

Syllabus
for
B.Sc.(B.C.CA) – R17



VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.

Course Structure

Revised Common Framework of CBCS for colleges in Andhra Pradesh w.e.f 2017-18
PROGRAMME: Three-Year B.S.C.(Bio-Technology, Chemistry, Computer Applications)

SEMESTER -I

SL NO	Course	Name of the Subject	Total Marks	Mid. Sem. Exam	Sem. End Exam	Teaching Hours	Credits
1	First Language	English	100	25	75	4	3
2	Second Language	(Tel/Hindi/Urdu/Sans)	100	25	75	4	3
3	Foundation Course-1	Human values & Professional Ethics	50	-0-	50	2	2
4	Foundation Course-2	Environmental Studies	50	-0-	50	2	2
5	Bio-Technology-I	BTT-101 Microbiology and cell biology	100	25	75	5	3
		BTT-101 Microbiology and cell biology Lab	50	-0-	50	2	2
6	Chemistry-I	Inorganic and Organic Chemistry	100	25	75	4	3
		Practical-I	50	-0-	50	2	2
7	Computer Applications-I	Computer Fundamentals & Photoshop	100	25	75	4	3
		Computer Fundamentals & Photoshop Lab	50	-0-	50	2	2
TOTAL			750	125	625	31	25

SEMESTER -II

SL NO	Course	Name of the Subject	Total Marks	Mid. Sem. Exam	Sem. End Exam	Teaching Hours	Credits
1	First Language	English	100	25	75	4	3
2	Second Language	(Tel/Hindi/Urdu/Sans)	100	25	75	4	3
3	Foundation Course-3	ICT-1(Information & Communication Technology)	50	-0-	50	2	2
4	Foundation Course-4	Communication & Soft Skills-1	50	-0-	50	2	2
5	Bio-Technology-II	BTT-201 Macromolecules and metabolism	100	25	75	5	3
		BTT-201 Macromolecules and metabolism lab	50	-0-	50	2	2
6	Chemistry-II	Physical and general chemistry	100	25	75	4	3
		Practical	50	-0-	50	2	2
7	Computer Applications-II	Programming in C	100	25	75	4	3
		Programming in C Lab	50	-0-	50	2	2
TOTAL			750	125	625	31	25



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PROGRAMME: Three-Year B.SC.(Bio-Technology, Chemistry, Computer Applications)

SEMESTER –III

SL NO	Course	Name of the Subject	Total Marks	Mid. Sem. Exam	Sem. End Exam	Teaching Hours	Credits
1	First Language	English	100	25	75	4	3
2	Second Language	(Tel/Hindi/Urdu/Sans)	100	25	75	4	3
3	Foundation Course-6	ICT-2 (Information and Communication Technology)	50	-0-	50	2	2
4	Foundation Course-6	Communication & Soft Skills-2	50	-0-	50	2	2
5	Bio-Technology-III	BTT-301 Biophysical Techniques	100	25	75	5	3
		BTT-301 Biophysical Techniques Lab	50	-0-	50	2	2
6	Chemistry-III	Inorganic and Organic Chemistry	100	25	75	4	3
		Practical-III	50	-0-	50	2	2
7	Computer Applications-III	Office Automation Tools	100	25	75	4	3
		Office Automation Tools Lab	50	-0-	50	2	2
TOTAL			750	125	625	31	25

SEMESTER –IV

SL NO	Course	Name of the Subject	Total Marks	Mid. Sem. Exam	Sem. End Exam	Teaching Hours	Credits
1	Foundation Course-7	Communication & Soft Skills-3	50	-0-	50	2	2
2	Foundation Course-8	Analytical Skills	50	-0-	50	2	2
3	Foundation Course-9	Entrepreneurship	50	-0-	50	2	2
4	Foundation Course-10	Leadership Education	50	-0-	50	2	2
5	Bio-Technology-IV	BTT-401 Immunology	100	25	75	5	3
		BTT-401 Immunology Lab	50	-0-	50	2	2
6	Chemistry-IV	Spectroscopy and Physical Chemistry	100	25	75	4	3
		Practical-IV	50	-0-	50	2	2
7	Computer Applications-IV	Object Oriented Programming with C++	100	25	75	4	3
		Object Oriented Programming with C++ Lab	50	-0-	50	2	2
TOTAL			650	125	575	27	23



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PROGRAMME: Three-Year B.SC.(Bio-Technology, Chemistry, Computer Applications)
Semester –V

SL NO	Course	Name of the Subject	Total Marks	Mid. Sem. Exam	Sem. End Exam	Teaching Hours	Credits
1	Bio-Technology-V	BTT-501 Molecular Biology	100	25	75	5	4
		BTT-501 Molecular Biology lab	50	-0-	50	2	2
Elective							
2	Bio-Technology-VI	a) BTT-503 rDNA Technology	100	25	75	5	4
		BTT-503 rDNA Technology lab	50	-0-	50	2	2
		b) BTT-505 Genetics	100	25	75	5	4
		BTP-506 Genetics Lab	50	-0-	50	2	2
3	Chemistry-V	Inorganic, Organic and Physical Chemistry	100	25	75	3	3
		Practical-V	50	-0-	50	2	2
4	Chemistry-VI	Inorganic, Organic and Physical Chemistry	100	25	75	3	3
		Practical-V	50	-0-	50	2	2
5	Computer Applications-V	Programming in Java	100	25	75	3	3
		Programming in Java Lab	50	-0-	50	2	2
6	Computer Applications-VI	Web Technology	100	25	75	3	3
		Web Technology Lab	50	-0-	50	2	2
TOTAL			900	150	750	34	32



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Revised Common Framework of CBCS for colleges in Andhra Pradesh w.e.f 2017-18
PROGRAMME: Three-Year B.SC.(Bio-Technology, Chemistry, Computer Applications)
Semester –VI

S.no	Semester	paper	Name of the subject	Total marks	Mid Sem Marks	Sem End Exam	Teaching Hours	Credits		
1.	VI	Bio Technology - VII	Elective I							
			a) *BTT-601 Plant and Animal Biotechnology	100	25	75	5	4		
			*BTP-602 Plant and Animal Biotechnology Lab	50	0	50	2	2		
			b) *BTT-603 Environmental Biotechnology	100	25	75	5	4		
			*BTP-604 Environmental Biotechnology Lab	50	0	50	2	2		
			c) *BTT-605 Industrial Biotechnology	100	25	75	5	4		
			*BTP-606 Industrial Biotechnology Lab	50	0	50	2	2		
		2.	VI	Bio Technology VIII	Elective-II (Cluster-701) **BTT 701 & BTP 701					
					1. Nutritional Biotechnology	100	25	75	5	4
					2. Food Biotechnology	100	25	75	5	4
					3. Metabolisms	100	25	75	5	4
					Practical 1: Nutritional Biotechnology	50	0	50	2	2
					Practical 2: Food Biotechnology	50	0	50	2	2
Practical 3: Metabolisms	50				0	50	2	2		
Elective-II (Cluster-702) **BTT 702 & BTP 702										
1. Tissue Culture	100				25	75	5	4		
2. Industrial Biotechnology	100				25	75	5	4		
3. Environmental Biotechnology	100				25	75	5	4		
Practical 1: Tissue Culture	50				0	50	2	2		
Practical 1: Industrial Biotechnology	50				0	50	2	2		
Practical 2: Environmental Biotechnology	50				0	50	2	2		
Elective-II (Cluster-703) **BTT 703 & BTP 703										
1. Cell Biology	100				25	75	5	4		
2. Gene Biotechnology	100				25	75	5	4		
3. Biostatistics & Bioinformatics	100				25	75	5	4		
Practical 1: Cell Biology	50				0	50	2	2		
Practical 2: Gene Biotechnology	50			0	50	2	2			
Practical 3: Biostatistics & Bioinformatics	50	0	50	2	2					

S.no	Semester	paper	Name of the subject	Total marks	Mid Sem Marks	Sem End Exam	Teaching Hours	Credits
3.		Chemistry-VII A	Elective: Analytical Methods in Chemistry	100	25	75	4	3
			Practical -VII A	50	0	50	2	2
		Chemistry-VII B	Elective: Environmental Chemistry	100	25	75	4	3
			Practical -VII B	50	0	50	2	2
		Chemistry-VII C	Elective: Green Chemistry	100	25	75	4	3
			Practical -VII C	50	0	50	2	2
4.		Cluster Elective -I						
		Chemistry-VIII- A	VIII A -I: Polymer Chemistry	100	25	75	3	3
			VIII A-II: Instrumental Methods of Analysis	100	25	75	3	3
			VIII A-III: Analysis of Drugs, Foods, Dairy Products & Bio-Chemical Analysis	100	25	75	3	3
			Practical -VIII A -I	50	0	50	2	2
			Practical -VIII A-II	50	0	50	2	2
			Practical -VIII A-III	50	0	50	2	2
		Cluster Elective -II						
		Chemistry-VIII-B	VIII B -I: Fuel Chemistry and Batteries	100	25	75	3	3
			VIII B -II: Inorganic Materials of Industrial Importance	100	25	75	3	3
			VIII B -III: Analysis of Applied Industrial Products	100	25	75	3	3
			Practical -VIII B -I	50	0	50	2	2
			Practical -VIII B -II	50	0	50	2	2
			Practical -VIII B -III	50	0	50	2	2
		Cluster Elective -III						
		Chemistry-VIII-C	VIII C -I: Organic Spectroscopic Techniques	100	25	75	3	3
			VIII C -II: Advanced Organic Reactions	100	25	75	3	3
			VIII C -III: Pharmaceutical and Medicinal Chemistry	100	25	75	3	3
			Practical -VIII C -I	50	0	50	2	2
			Practical -VIII C -II	50	0	50	2	2
			Practical -VIII C -III	50	0	50	2	2

5.	Computer Application-VII	Elective -I						
		A. Operating systems	100	25	75	3	3	
		B. Software Engineering						
		C. Computer Networks						
		Lab for Elective -I(A OR B OR C)	50	0	50	2	2	
		Elective-II(Cluster A)						
		1. E-commerce Applications	100	25	75	3	3	
		E-commerce Applications Lab	50	0	50	2	2	
		2. Database Management System	100	25	75	3	3	
		Database Management System	50	0	50	2	2	
		3. Project Work	150	50	100	5	5	
		Elective -II (CLUSTER -B)						
		1. Visual basic programming	100	25	75	3	3	
		Practical	50	0	50	2	2	
		2. PHP (Personal Home page)	100	25	75	3	3	
		Practical	50	0	50	2	2	
		3. Project work	150	50	100	5	5	
		TOTAL		900	150	750	39	34

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE
General English Syllabus for B.A/ B.A. (OL)/B.Com/B.Sc/BBA/BCA Courses under
CBCS w.e.f. 2015-16 (Revised in April-2016)

SEMESTER – I

1. Every unit shall state the objectives and expected deliverables.
2. Every lesson shall have
 - i) Questions on subject comprehension, paragraph, short note, single sentence answer types
 - ii) Exercises on vocabulary, syntax, and pronunciation
 - iii) Language exercises shall include exercises in paraphrasing, note-making and report writing wherever possible
 - iv) Pre -reading and post- reading activities.

Unit – I

PROSE

1. A.P. J. Abdul Kalam: The Knowledge Society (from *Ignited Minds*)
2. NgugiWaThiong'o: The Language of African Literature (from *Decolonizing the Mind*)

Unit – II

POETRY

1. Robert Frost: The Road Not Taken
2. Nissim Ezekiel: Night of the Scorpion

Unit – III

SHORT STORY

1. Mulk Raj Anand : The Lost Child
2. Henry Lawson: The Loaded Dog

Unit – IV

ONE - ACT PLAY

William Shakespeare: The Merchant of Venice (Court Scene – Act IV Scene -1)

Unit – V

LANGUAGE ACTIVITY

1. Classroom and Laboratory Activities
 - i. Single Sentence Answer Questions on Vocabulary (spelling), sound(pronunciation), sense (meaning), and syntax (usage)
2. Classroom Activity
 - i. Exercises in Articles and Prepositions
 - ii. Exercises in Tenses, Interrogatives and Question tags

Note: In classroom instruction it may be ensured that the theoretical and practical components of CSS-I complement the language activity in this semester.

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VIKRAMA SIMHAPURI UNIVERSITY :: KAKUTUR

General English

(Common to FIRST YEAR – FIRST SEMESTER B.A., B.A. (OL), B.Com., B.Sc., BBA, BCA)

(A. P. Common Core Syllabus (CBCS) for I year Effective from 2015-16) (Revised in April, 2016)

Model Question Paper (2017-18)

Time: 3 Hours

Max. Marks: 75

1. Answer any TWO of the following questions. 2x5 = 10
 - a. What are the problems India would face in making Abdul Kalam's dream into a reality?
 - b. Describe the author's experiences about language and literature in "The Language of African Literature".
 - c. Describe how changes in society through technology can lead to wealth generation in a country like India according to Kalam.
2. Answer any TWO of the following questions. 2x5 = 10
 - a. 'And that has made all the difference.' Explain it with reference to the poem 'The Road Not Taken'.
 - b. Narrate all the activities presented in the poem 'Night of the Scorpion'.
 - c. Pick out the comparisons in the poem 'Night of the Scorpion' and explain how they enhance the beauty of the poem.
3. Answer any TWO of the following questions. 2x5 = 10
 - a. Describe the different feelings of the child in the story 'The Lost Child'.
 - b. Bring out the humorous elements described in 'The Loaded Dog'.
 - c. Do you think that all parents behave the same way as the child's parents in the story 'The Lost Child'? Discuss.
4. Answer any ONE of the following questions. 1x5 = 5
 - a. Describe the role of Portia in deciding the case of Antonio in the court of justice.
 - b. How does Portia turn the tables on Shylock?
5. Read the following passage and answer the questions that follow. (From Prose) 5x1 = 5

Knowledge has many forms and it is available at many places. It is acquired through education, information, intelligence and experience. It is available in academic institutions with teachers, in libraries, in research papers, seminar proceedings and in various organizations and workplaces with workers, managers, in drawings, in process sheets and on the shop floors. Knowledge, though closely linked to education, comes equally from learning skills such as those possessed by our artists, craftsmen, hakims, vaidyas, philosophers and saints, as also our housewives. Knowledge plays a very important role in their performance and output too. Our heritage and history, the rituals, epics and traditions that form part of our consciousness are also vast resources of knowledge as are our libraries and universities. There is an abundance of unorthodox, earthy wisdom in our villages.

 - a. How is knowledge acquired?
 - b. Where is knowledge available?
 - c. In whose performance and output does knowledge play a very important role?
 - d. Where is an abundance of wisdom?
 - e. What is the antonym of 'unorthodox'?
6. Identify the Correct spelling in each group. 5x1 = 5
 - a. i. Hight ii. Height iii. Hieght
 - b. i. Aavailable ii. Available iii. Avialable
 - c. i. Incomplete ii. Incompleate iii. Incomplet
 - d. i. Acheivement ii. Achievement iii. Achievement
 - e. i. Campain ii. Campaign iii. Campain
7. Write the English spelling of the words given in phonemic transcription. 5x1 = 5

a. /fɑ:st/ b. / meɪk/ c. /mʌndeɪ/ d. /zu:/ e. / mæn
8. Fill in the blanks with suitable Articles. 5x1 = 5
 - a. The Nile is ___ longest river.
 - b. My friend came late by ___ hour.
 - c. Honesty is ___ best policy.
 - d. I saw ___ one-eyed man.
 - e. My friend is ___ honest man.

9. Fill in the blanks with suitable Prepositions. 5x1 = 5

- a. I prefer milk ___ coffee.
- b. He has been staying here ___ 2 pm.
- c. My brother is suffering ___ fever.
- d. There is an exception ___ every rule.
- e. He is senior ___ me.

10. Fill in the blanks with the correct forms of the verbs given in brackets. 5x1 = 5

- a. I ___ (buy) a house last year.
- b. She ___ (read) a book at 2 pm yesterday.
- c. It ___ (rain) for the last two hours.
- d. They ___ (work) in that office from 2010 to 2015.
- e. The thief ___ (escape) before I opened the door.

11. Convert the following sentences into questions. 5x1 = 5

- | | |
|--------------------------|-----------------------------|
| a. They are students. | b. She is writing a letter. |
| c. You know him. | d. It is a book. |
| e. He met her last week. | |

12. Add a question tag to each of the following sentences. 5x1 = 5

- | | |
|-----------------------|-----------------------------|
| a. I am a student. | b. He doesn't drink liquor. |
| c. They won't come. | d. The film is not good. |
| e. You are impatient. | |

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VIKRAMA SIMHAPURI UNIVERSITY::NELLORE

Part I (B) SANSKRIT

CBCS SEMESTER WISE SYLLABUS

COMMON TO B.A./B.SC./B.Com./BBA

I SEMESTER

PAPER – I POETRY, PROSE AND GRAMMAR - I

Unit – I	Old poetry	1. ABHIJNAANAM Ramayanam – Kishkindhaa Kaanda – 6 th Canto 1- 27 Slokas 2. AATITHYAM Bhaagavatam – IX Skandha - 21 st Adhyaaya – 1 – 36 Slokas
Unit – II	Modern Poetry	1. UNNATIHI From Bharatee Bhushanam by Dr D.N.Deekshit –Pp No. 66 – 68 2. VIVIKTA PUSHPA KARANDAHA By Dr Rani Sadasiva Murthy, Selected Stanzas – 14
UNIT – III	PROSE	MOORKHATAA PAREEKSHITAKAARAKAM OF PANCHARANTRAM – 3 rd & 4 th Stories- Murkha Brahmana Katha & Murkha Pandita Katha – Page 734 – 743 , Pub. Krishnadas Academy, Varanasi
UNIT IV	GRAMMAR	1. DECLENSIONS Nouns ending in vowels, Deva, Kavi, Bhanu, Dhatru, Pitru, Go, Ramaa, Mati 2. CONJUGATIONS 1 st Conjugation – Bhoo, Gam, Shtha, Drusir, Labh, Mud 2 nd Conjugation – AS 10 th Conjugation – Bhaash
UNIT – V	GRAMMAR -	1. SANDHI Swara Sandhi : Sarvarnadeergha, Ayovayava, Guna, Vruddhi, Yana desa. Halsandhi : Scutva, Stutva, Anunasika 2. SAMASA – Dwandwa, Tatpurusha, Karmadharaya, Dwigu.

VIKRAMA SIMHAPURI UNIVERSITY
NELLORE - 524 001

SANSKRIT

CBCS SEMESTER WISE SYLLABUS

PATRON OF THE QUESTION PAPER

SEMESTER-I

Time : 3hrs

Max Marks : 75

I.	Essay One from each lesson - Abhignanam and Antharyam	1 out of 2	1 x 10	10M
II.	Essay One from each Lesson : Unnati and Viviktapushpa Karandah.	1 out of 2	1 x 8	08M
III.	Essay One from each Lesson : Murkhabrahmana Katha and Murkha Pandita Katha	1 out of 2	1 x 10	10M
IV.	Short Answers Three from, Abhignanam and Athityam Two from Murkha Brahmana Katha	4 out of 8	4 x 2	08M
V.	Annotations Two from each lesson Abhignanam, Athidhyam, Murkhabrahmana Katha, Murkha Pandita Katha	4 out of 8	4 x 3	12 M
VI.	Full form of Sabda Three from Pullinga and one from Srilinga	2 out of 4	2 x 4	08M
VII.	Full form of a Lakara of a given Dhatu Two from each Parshmaipada and Athmanepada	2 out of 4	2 x 3 = 6	
VIII.	Combine any SIX and mention the name of the sandhi	6 out of 10	6x1=6	
IX.	Simple Writing of Vighravakya One from Each Samasa	3 out of 6	3x1=3	
X.	Filling the Sloka and Writing the Meaning Two from Abhignanam and two from Adityam	2 out of 4	2x2=4	

Note : Question Paper should be Sanskrit Only. English Translation should not be there.

Andhra Pradesh State Council of Higher Education
General Telugu Syllabus for B.A/ B.Com/B.Sc., Courses Under CBCS
W.e.f. 2015-16 (Revised in April - 2016)

SEMESTER - I

I. ప్రాచీన కవిత్వం:

- (అ) నన్నయ - గంగాశంతనుల కథ
ఆంధ్రమహాభారతం-ఆదిపర్వం-నాల్గవ అశ్వాసం (120-165)
“నరవరుడగు శంతనునకు” నుండి “దివ్య భూషణాలంకృత” వరకు
- (ఆ) తిక్కన - ద్రౌపది పరిదేవనం - ఆంధ్రమహాభారతం - ఉద్యోగపర్వం -
తృతీయ అశ్వాసం - (100-125)
“ధర్మనందను పలుకులు” నుండి “అని యూఱడిలగ బలికిన” వరకు

II ఆధునిక కవిత్వం

- (అ) గురజాడ - కన్యక
(ఆ) శ్రీశ్రీ - దేశచరిత్రలు

III కథానికలు

- (అ) పాపినేని శివశంకర్ - చింతల తోపు
(ఆ) బండి నారాయణస్వామి - సావుకూడు

IV వ్యాకరణం

- (అ) సంధులు - సవర్ణదీర్ఘ, గుణ, వృద్ధి, యణాదేశ, త్రిక, గ.స.డ.ద.వాదేశ, రుగాగమ, టుగాగమ, ఆమ్రేడిత, అత్వ, ఇత్వ, ఉత్వ, సంధులు.
(ఆ) సమాసాలు - తత్పురుష, కర్మధారయ, ద్వంద్వ, ద్విగు, బహువ్రీహి.
(ఇ) అక్షర దోషాలు - దోషాలు సరిదిద్ది సాధు రూపాలు రాయాలి.

విద్యార్థి కృత్యాలు:

1. శ్రీశ్రీ కవిత దేశ చరిత్రలకు సంబంధించిన పేరడీలు సేకరించండి.
2. ముత్యాల సరాలు ఛందస్సులో రచనలు చేసే ప్రయత్నం చేయండి.
3. ఆనాటి ద్రౌపది పరిస్థితిని ప్రస్తుత సమాజ పరిస్థితికి అన్వయించండి.
(పైన సూచించిన విద్యార్థి కృత్యాలు కొన్ని ఉదాహరణలు మాత్రమే. ఇటువంటివి మరిన్ని ప్రయత్నించగలరు.)

Foundation Course - 1

I. HUMAN VALUES AND PROFESSIONAL ETHICS

Common for BA/BCom/BSc/BBA/BCA Programmes

I Semester

(Total 30 Hrs)

Unit-I : Introduction to Value Education

1. Value Education, Definition, Concept and Need for Value Education
2. The Content and Process of Value Education
3. Self-Exploration as a means of Value Education
4. Happiness and Prosperity as parts of Value Education

Unit-II : Harmony in the Human Being

1. Human Being is more than just the Body
2. Harmony of the Self ('I') with the Body
3. Understanding Myself as Co-existence of the Self and the Body
4. Understanding Needs of the Self and the Needs of the Body

Unit-III : Harmony in the Family and Society and Harmony in the Nature

1. Family as a basic unit of Human Interaction and Values in Relationships
2. The Basics for respect and today's Crisis : Affection, Care, Guidance, Reverence, Glory, Gratitude and Love
3. Comprehensive Human Goal : The Five dimensions of Human Endeavour

Unit-IV : Social Ethics

1. The Basics for Ethical Human conduct
2. Defects in Ethical Human Conduct
3. Holistic Alternative and Universal order
4. Universal Human Order and Ethical Conduct

Unit-V : Professional Ethics

1. Value Based Life and Profession
2. Professional Ethics and Right Understanding
3. Competence in Professional Ethics
4. Issues in Professional Ethics - The Current scenario
5. Vision for Holistic Technologies, Production System and Management Models

Reference Books :

1. A.N.Tripaty, Human Values, New Age International Publishers, 2003
2. Bajpai.B.L., Indian Ethos and Modern Management, New Royal Book Co., Lucknow, Reprinted, 2004
3. Bertrand Russell, Human Society in Ethics and Politics
4. Corliss Lamont, Philosophy of Humanism
5. Gaur.R.R., Sangal.R, Bagaria.G.P., A Foundation Course in Value Education, Excel Books, 2009
6. Gaur.R.R., Sangal.R, Bagaria.G.P., Teacher's Manual, Excel Books, 2009
7. I.C.Sharma, Ethical Philosophy of India, Nagin & Co., Julundhar
8. Mortimer.J.Adler, What Man has Made of Man
9. R.Subramanian, Professional Ethics, Oxford University Press
10. Text Book for Intermediate Ethics and Human Values, Board of Intermediate Education & Telugu Academy, Hyderabad
11. William Lilly, Introduction to Ethics, Allied Publishers

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE
THREE YEAR DEGREE EXAMINATION
FIRST YEAR EXAMINATION
SEMESTER-I
HUMAN VALUES AND PROFESSIONAL ETHICS
Common for BA/BCom/BSc/BBA/BCA Programmes
MODEL PAPER

TIME: 2 Hrs

Max Marks: 50

Answer any FIVE of the following questions 5 X 10 =50

1. నేటి వృత్తిపరమైన విద్యావ్యవస్థలో విలువల విద్య అవశ్యకత ఎట్టిది?
What is the need for value education in the present day professional oriented education?
2. స్వీయ పరిశోధన అనగానేమి? అది ఎలా సాధ్యం?
What is meant by self-exploration? How it can be achieved?
3. నేను, శరీరం యొక్క కార్యకలాపాలను ఎలా అర్థం చేసుకుంటావు?
What do you mean by understanding the activities of the self and body?
4. “సంయమ” “స్వస్థ్య” అనగా నేమి? అవి ఒకదానికొకటి ఎట్టి సంబంధం కల్గియున్నాయి?
Define sanyama and svasthya and explain how they are related?
5. మానవ సంబంధాలను అర్థం చేసుకోవటానికి కుటుంబం ఒక ప్రయోగశాల?
వివరింపుము?
“Family is a natural laboratory to understand human relationship” – Explain.
6. సంపూర్ణమైన మానవ లక్ష్యానికి అవసరమైన ప్రణాళిక ఎట్టిది?
What is the programme needed to achieve the comprehensive human goal?
7. సరైన అవగాహన నీతివంతమైన జీవనానికి ఎలా దోహదం చేస్తుంది?
How does right understanding provide the basis for ethical human conduct?
8. సంపూర్ణ ప్రత్యామ్నాయ పయనంలోని వివిధ దశలను పేర్కొనుము?
What are the various stages of journey towards the destination of holistic alternatives?
9. నేడు వృత్తిధర్మములో నెలకొన్న సమస్యలను విశ్లేషించి వాని పరిష్కారమార్గములను సూచింపుము?
Critically examine the issues in professional ethics?
10. సంపూర్ణ ప్రత్యామ్నాయం లేక సంపూర్ణ మానవ లక్ష్యాన్ని సాధించటంలో సాంకేతిక, ఉత్పాదన, యాజమాన్యాల పాత్రను వివరించండి?
What is the vision for holistic alternative? Mention the broad holistic criteria for evaluation of technologies production systems and management models?

Instruction to Paper Setter :

Two questions must be given from each unit.

Foundation Course – 2
ENVIRONMENTAL STUDIES
Common for BA/BCom/BSc/BBA/BCA Programmes
Semester – I (Total 30 Hours)

Unit-I : Natural Resources: **6 Hrs**

Definition, scope and importance. Need for public awareness.

Brief description of;

- Forest resources: Use and over-exploitation. Deforestation; timber extraction, mining, dams. Effect of deforestation environment and tribal people
- Water resources: Use and over-utilization. Effects of over utilisation of surface and ground water. Floods, drought.
- Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources.
- Food resources: World food problems, Effects of modern agriculture; fertilizer-pesticide, salinity problems.
- Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources.
- Land resources: Land as resources, land degradation, man induced landslides, soil erosion and desertification

Unit-II : Ecosystems, Biodiversity and its conservation **6 Hrs**

- | Concept of an ecosystem
- | Structure and function of an ecosystem
- | Producers, consumers and decomposers

- Food chains, food webs and ecological pyramids
- Characteristic features of the following ecosystems:-
Forest ecosystem, Desert ecosystem, Aquatic ecosystem.

- Value of biodiversity: Consumptive use, productive use. Biodiversity in India.
- | Threats to biodiversity: habitat loss, poaching of wildlife, man wildlife conflicts.
- | Endangered and endemic species of India
- | Conservation of biodiversity

Unit-III : Environmental Pollution **6 Hrs**

- Definition
- Causes, effects and control measures of :-
 - a. Air pollution
 - b. Water pollution
 - c. Soil pollution
 - d. Noise pollution
- Solid waste management; Measures for safe urban and industrial waste disposal
- | Role of individual in prevention of pollution
- | Disaster management: Drought, floods and cyclones

Unit-IV : Social Issues and the Environment **6 Hrs**

- From Unsustainable to Sustainable development
- Water conservation, rain water harvesting, watershed management.
- Climate change, global warming, ozone layer depletion,
- Environment protection Act
- Wildlife Protection Act, Forest Conservation Act

Unit-V : Human Population and the Environment

6 Hrs

- Population explosion, impact on environment.
- Family welfare Programme
- Environment and human health
- Role of Information Technology in Environment and humanhealth.

Reference Books :

1. Environmental Studies by Dr.M.Satyanarayana, Dr.M.V.R.K.Narasimhacharyulu, Dr.G. Rambabu and Dr.V.VivekaVardhani, Published by Telugu Academy, Hyderabad.
2. Environmental Studies by R.C.Sharma, Gurbir Sangha, published by Kalyani Publishers.
3. Environmental Studies by Purnima Smarath, published by Kalyani Publishers.

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.

FIRST YEAR : SEMESTER - I

SUBJECT : (FOUNDATION COURSE-2)

Common for BA/BCom/BSc/BBA/BCA Programmes

ENVIRONMENTAL STUDIES

Time : 2hours

Max marks : 50

*Answer any **FIVE** of the following questions.*

5 X 5 = 25M

1. Define Environment and Explain Multidisciplinary Nature of the environmental science?
పర్యావరణాన్ని నిర్వచించి, పర్యావరణశాస్త్రం యొక్క బహుముఖపాఠాలను వివరించండి?
2. Write about Renewable and Non-Renewable Energy Resources?
పునరుద్ధరించగల పునరుద్ధరించలేనిశక్తి వనరులను వివరించండి?
3. Explain the structure and Functions of Ecosystem?
ఆవరణవ్యవస్థ యొక్క నిర్మాణము మరియు విధులను తెల్పుండి?
4. Define Biodiversity and Explain India as a mega – Biodiversity Nation?
జీవవైవిధ్యాన్ని నిర్వచించి, భారతదేశాన్ని జీవవైవిధ్య ప్రాంతంగా వివరింపుము?
5. Write about Air pollution?
గాలి కాలుష్యాన్ని వివరించండి?
6. Describe the solid waste Management Methods?
వ్యర్థఘనపదార్థాల తరలింపు విధానాలను తెల్పుండి?
7. Explain the global warming and Acid rains?
గ్లోబల్ వార్మింగ్ మరియు ఆమ్లవర్షాలను వివరించండి?
8. Describe about rain water harvesting and watershed Management?
వర్షపునీరు ప్రోధి, నిలుపుదల మరియు నీటిగట్ల యాజమాన్యపద్ధతులు వివరించండి?
9. Write about women & Child welfare programme?
స్త్రీ, శిశుసంక్షేమంను వివరించండి?
10. Explain population unemployment?
జనాభాపెరుగుదల, నిరుద్యోగులను తెల్పుండి?

Instruction to Paper Setter :

Two questions must be given from each unit.

BIO. TECHNOLOGY

B.Sc., SEMESTER I

BTT- 101 MICROBIOLOGY AND CELL BIOLOGY

UNIT I

History, Development and Microscopy

History and development of microbiology: contributions of Louis Pasteur, Robert Koch and Edward Jenner. Microscopy: Compound microscopy: Numerical aperture and its importance, resolving power, oil immersion objectives and their significance, principles and applications of dark field, phase contrast, fluorescent microscopy. Electron microscopy: Principle, ray diagram and applications, TEM and SEM, comparison between optical and electron microscope, limitations of electron microscopy.

Stains and staining procedures: Acidic, basic and neutral stains, Gram staining, Acid fast staining, Flagella staining, Endospore staining.

UNIT II

Bacteria: Bacterial morphology and subcellular structures, general morphology of bacteria, shapes and sizes, generalized diagram of typical bacterial cell. Slime layer and capsule, difference between the structure, function and the position of the two structures. Cell wall of gram +ve and Gram -ve cells, Prokaryotic classification. General account of flagella and fimbriae. Chromatin material, plasmids; definition and kind of plasmids (conjugative and non-conjugative) F, R, and Col plasmids. Endospores: Detailed study of endospore structure and its formation, germination, basis of resistance.

Viruses: General characteristics of viruses, difference between virus and typical microbial cell, structure, different shapes and symmetries with one example of each type, classification of viruses on the basis of nucleic acids, phage and animal cell viruses, example of each and their importance. Brief idea of lytic cycle and lysogeny.

UNIT III

Microbial Nutrition: Basic nutritional requirements: Basic idea of such nutrients as water, carbon, nitrogen, sulfur and vitamins etc., natural and synthetic media, nutritional classification of bacteria. Selective and Differential media, Enriched media, Enrichment media.

UNIT IV:

Microbial growth and control: **Growth:** Growth rate and generation time, details of growth curve and its various phases. Concept of synchronous cultures, continuous and batch cultures (chemostat and turbidostat). Measurement of growth. Pure cultures and cultural characteristics. Maintenance of pure culture. Sterilization, Physical control: Temperature (moist heat, autoclave, dry heat, hot air oven and incinerators), desiccation, surface tension, osmotic pressure, radiation, UV light, electricity, ultrasonic sound waves, filtration. Chemical control: Antiseptics and disinfectants (halogens, alcohol, gaseous sterilization. Concept of biological control.

UNIT V

Cell Biology: Eukaryotic Cell - Structure and function of the following: nucleus, nuclear membrane, nucleoplasm, nucleolus, golgi complex, Mitochondria, Chloroplast, endoplasmic reticulum, lysosomes, peroxisomes, glyoxisomes and vacuoles.

PRACTICAL: BTP-102 MICROBIOLOGY & CELL BIOLOGY

1. Demonstration, use and care of microbiological equipments.
2. Preparation of media, sterilization and isolation of bacteria.
3. Isolation of Bacteriophage from sewage / other sources. 4
- . Demonstration of motility of Bacteria.
5. Simple staining of bacteria
6. Gram staining of Bacteria
7. Acid fast staining of Bacteria
8. Endospore staining.
9. Demonstration of starch hydrolysis by bacterial cultures.
10. Growth of fecal coliforms on selective media.
11. Isolation of pure culture by pour plate method.
12. Isolation of pure culture by streak plate method.
13. Anaerobic cultivation of microorganisms.
14. Cultivation of yeast and moulds.
15. Antibiotic sensitivity assay.
16. Oligodynamic action of metals.
17. To study germicidal effect of UV light on bacterial growth.
18. Stages of mitosis.
19. Stages of meiosis.

Note: - Mandatory to perform at least ten practical.

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.
FIRST YEAR : SEMESTER - I
SUBJECT : BIO-TECHNOLOGY
MODEL QUESTION PAPER

Time : 3 hours

Max marks : 75

PART - A

Answer any FIVE questions. Each question carries 5 Marks.

5 X 5 = 25M

1. Robert Koch
2. Plasmid
3. Nutritional Classification of Bacteria
4. Batch Culture
5. Golgi Complex
6. Flagella Staining
7. Endospore
8. Mitochondria

PART-B

Answer ONE question from each unit. Each question carries 10 Marks. 5 X 10=50 M

9. (a) Describe Electron Microscope?
(OR)
(b) Define staining and write an account on Gram's Staining?
10. (a) Describe the ultra structure of Bacteria?
(OR)
(b) Write about Nucleic acid classification of Viruses?
11. (a) Give an Account on Microbial Nutrition?
(OR)
(b) Define Medium and add a note on different culture mediums?
12. (a) Define sterilization and write Different chemical sterilizing agents?
(OR)
(b) Explain Process of growth measurement?
13. (a) Describe Plasma Membrane, Chemical composition and structural Models?
(OR)
(b) Write about structure and Functions of Eukaryotic cell well?

SEMESTER - I

Paper I - Inorganic & Organic Chemistry 60hrs (4h/w)

INORGANIC CHEMISTRY

30 hrs (2h / w)

UNIT - I

p-block elements - I

15h

Group-13: Synthesis and structure of diborane and higher boranes

(B_4H_{10} and B_5H_9), boron-nitrogen compounds ($B_3N_3H_6$ and BN)

Group - 14: Preparation and applications of silanes and silicones.

Group - 15: Preparation and reactions of hydrazine, hydroxylamine.

UNIT-II

1. p-block elements -II

8h

Group - 16: Classifications of oxides based on (i) Chemical behaviour and (ii) Oxygen content.

Group-17: Inter halogen compounds and pseudo halogens.

2. Organometallic Chemistry

7h

Definition - classification of Organometallic compounds - nomenclature, preparation, properties and applications of alkyls of Li and Mg.

ORGANIC CHEMISTRY

30hrs (2h /w)

UNIT-III

Structural theory in Organic Chemistry

10 h

Types of bond fission and organic reagents (Electrophilic, Nucleophilic, and free radical reagents including neutral molecules like H_2O , NH_3 & $AlCl_3$).

Bond polarization : Factors influencing the polarization of covalent bonds, electro negativity - inductive effect. Application of inductive effect (a) Basicity of amines (b) Acidity of carboxylic acids (c) Stability of carbonium ions. Resonance or Mesomeric effect, application to (a) acidity of phenol, and (b) acidity of carboxylic acids. Hyper conjugation and its application to stability of carbonium ions, Free radicals and alkenes, carbanions, carbenes and nitrenes.

Types of Organic reactions : Addition - electrophilic, nucleophilic and free radical. Substitution - electrophilic, nucleophilic and free radical. Elimination- Examples.

- 1 N Honantha Kom
- 2 A. V. S. S. S.
- 3

LABORATORY COURSE-I
Practical-I Simple Salt Analysis
(At the end of Semester-I)

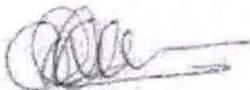
30 hrs (2 h / w)

Qualitative inorganic analysis

Analysis of simple salt containing one anion and cation from the following

Anions: Carbonate, sulphate, chloride, bromide, acetate, nitrate, borate, phosphate.

cations: Lead, copper, iron, aluminum, zinc, manganese, nickel, calcium, strontium, barium, potassium and ammonium.

- 1) N. Koman Ho Komy
- 2) A. U. D. Khan
- 3) 

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.
THREE YEAR (CBCS) DEGREE EXAMINATION
FIRST SEMESTER
PART-1 : CHEMISTRY
INORGANIC AND ORGANIC CHEMISTRY
MODEL PAPER

Time : 3 hours

Max marks : 75

PART - A

Answer any FIVE questions. Each question carries 5 Marks.

5 X 5 = 25M

1. Write on Silicones.
2. Write down the Borazole.
3. Write on Pseudohalogens.
4. Write the classification of oxides based on chemical behavior.
5. Explain the type of Bond fission.
6. Write down the Hyperconjugation with example.
7. Explain the Kharasch effect with example.
8. Write down the acidity of 1-alkynes.
9. Define aromaticity with two examples.
10. Explain - NO_2 group is a meta directing group.

PART-B

Answer any FIVE questions. Each question carries 10 Marks.

5 X 10 = 50 M

11. Discuss the synthesis and structure of Diborane.
12. Write down the preparation and two properties of Hydrazine and Hydroxyl amine.
13. Write an essay about Interhalogen compounds.
14. Write the preparation, properties of alkyl magnesium compound.
15. Define Inductive effect. Explain two applications of Inductive effect.
16. Write down the addition and substitution reactions with examples.
17. What are alkadiene. Explain their types. Write down 1,2 and 1,4 addition of when HBr to 1,3-Butadiene.
18. Explain the following : (a) Bayer - Strain Theory (b) Wislicenus method.
19. Discuss the structure of benzene.
20. Write down the Electrophilic Nitration and Friedel craft acylation on benzene.

NOTE :- For Paper Setters, choosing the two short Questions and two long Questions for each unit.

N Hanumanth Rao


I YEAR – SEMESTER-I
PAPER-I: COMPUTER FUNDAMENTALS & PHOTOSHOP

Unit-I: Introduction to Computers: Characteristics and limitations of Computer, Block diagram of computer, types of computers, uses of computers, computer generations. Windows basics: desktop, start menu, icons

Unit-II: Input and Output Devices: Keyboard and mouse, inputting data in other ways, Types of Software: system software, Application software, commercial, open source, domain and free ware software, Memories: primary, secondary and cache memory.

Unit –III: Introduction to Adobe Photoshop: Getting started with Photoshop, creating and saving a document in Photoshop, page layout and back ground, Photoshop program window-title bar, menu bar, option bar, image window, image title bar, status bar, ruler, pallets, tool box, screen modes, saving files, reverting files, closing files.

Unit –IV: Images: working with images, image size and resolution, image editing, colour modes and adjustments, Zooming & Panning an Image, Rulers, Guides & Grids- **Working with Tool box:** Practice Sessions.

Unit-V: Layers: Working with layers- layer styles- opacity-adjustment layers. **Filters:** The filter menu, Working with filters- Editing your photo shoot, presentation –how to create ads, artistic filter, blur filter, brush store filter, distort filters, noise filters, pixelate filters, light effects, difference clouds, sharpen filters, printing.

Reference Books:

1. Reema Thareja, Fundamentals of Computers, Oxford University Press
2. Adobe Creative Team, Adobe Photoshop Class Room in a Book.
3. David Maxwell, Photoshop: Beginner's Guide for Photoshop - Digital Photography, Photo Editing, Color Grading & Graphic...19 February 2016.

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

Vikrama Simhapuri University::Nellore
B.Sc.(Computer Applications) Syllabus Under CBCS
(with effect from 2016-'17)

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE
COMPUTER APPLICATIONS
BA(CA)/BCom(CA)/BSc(CA) - I YEAR - SEMESTER-I (w.e.f. 2016-'17)
COMPUTER FUNDAMENTALS & PHOTOSHOP
MODEL QUESTION PAPER

Time: 3 Hours

Max. Marks : 75

Section-A

Answer any FIVE of the following Questions:

(5 x 5= 25 Marks)

1. Write various limitations of computers.
2. Briefly explain windows desktop
3. Explain keyboard and mouse
4. Write about commercial software
5. How do you set page layout in Photoshop?
6. Write and explain how to create a document in Photoshop
7. How rulers and guides are useful in Photoshop window?
8. Explain how will you zoom an image in Photoshop.
9. Define Layer
10. Define Filter

Section - B

Answer any FIVE of the following Questions

(5 × 10 =50 Marks)

11. Draw block diagram of a computer and explain
12. Explain various types of computers.
13. What is primary memory? Explain its types
14. Define software. Explain different types of software
15. Explain various components of Photoshop program window
16. Write about reverting files
17. Explain how you change image size and resolution in Photoshop
18. Write about various colour modes.
19. Explain in detail about layers.
20. Explain the working of filters in Photoshop

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE
GENERAL ENGLISH SYLLABUS
FIRST YEAR - SEMESTER – II

Unit – I

PROSE

1. J. B.S Haldane: The Scientific Point of View
2. A.G. Gardiner : On Shaking Hands

Unit - II

POETRY

1. John Keats: Ode to Autumn
2. KishwarNaheed : I am not that Woman

(from *An Anthology of Commonwealth Poetry* edited by C.D. Narasimhaiah)

Unit – III

SHORT STORY

1. Ruskin Bond : The Boy Who Broke the Bank
2. R. K. Narayan : Half a Rupee Worth

Unit – IV

ONE ACT PLAY

Anton Chekhov: The Proposal

Unit – V

LANGUAGE ACTIVITY

1. Transformation of Sentences: (a) Voice and (b) Speech
2. Degrees of Comparison
3. Paragraph writing using the Hints.
4. Dialogue writing in a given situation.
5. Dialogue writing using the Hints.
6. Reading Comprehension (a) From Prose and (b) Unknown

VIKRAMA SIMHAPURI UNIVERSITY :: KAKUTUR

General English

(Common to FIRST YEAR – SECOND SEMESTER B.A., B.A. (OL), B.Com., B.Sc., BCA, BBA)
(A. P. Common Core Syllabus (CBCS) for I year Effective from 2015-16) (Revised in April, 2016)

Model Question Paper (2017-18)

Time: 3 Hours

Max. Marks: 75

1. Answer any TWO of the following questions. 2x5 = 10
 - a. 'Scientific point of view is morally equivalent of war.' Do you agree? Give Reasons.
 - b. What are the modes of greetings of different countries mentioned by A.G. Gardiner?
 - c. 'It is the happy mean between the Oriental's formal salaam and the Russian's enormous hug.' Elaborate this statement with reference to "On Shaking Hands".
2. Answer any TWO of the following questions. 2x5 = 10
 - a. 'Season of mists and mellow fruitfulness.' Why does Keats feel about autumn like that? Describe?
 - b. Why does the poet compare herself with a commodity in the poem 'I am not that Woman'?
 - c. How does Keats describe the autumn season in the poem 'Ode to Autumn'?
3. Answer any TWO of the following questions. 2x5 = 10
 - a. How did Subbaiah meet his tragic end in 'Half a Rupee Worth'?
 - b. Sketch the character of Nathu in 'The Boy who Broke the Bank'.
 - c. Give a brief description of the story 'Half a Rupee Worth'.
4. Answer any ONE of the following questions. 1x5 = 5
 - a. Why did Lomov want to marry his neighbour, Natalya?
 - b. What are the causes of the arguments in the play 'The Proposal'?
5. Rewrite the following sentences as directed. 5x1 = 5
 - a. He reads a story. (into Passive Voice)
 - b. The letters have been posted by him. (into Active Voice)
 - c. She invited him to the party. (into Passive Voice)
 - d. Nothing can be gained by us without effort. (into Active Voice)
 - e. We posted most of the invitation cards. (into Passive Voice)
6. Rewrite the following sentences as directed. 5x1 = 5
 - a. He said, "I have posted the letter." (into Indirect Speech)
 - b. She said to me, "Are you a student?" (into Indirect Speech)
 - c. Savitha said, "I sang a song." (into Indirect Speech)
 - d. My father said to me, "I am happy because you have got good marks." (into Indirect Speech)
 - e. "Don't make a noise" said the mother to her son. (into Indirect Speech)
7. Rewrite the following sentences as directed. 5x1 = 5
 - a. He is taller than any other boy in the class. (into Superlative Degree)
 - b. Akbar was greater than most other rulers. (into Positive Degree)
 - c. His brother is at least as tall as he. (into Comparative Degree)
 - d. A foolish friend can be more dangerous than a wise enemy. (into Positive Degree)
 - e. My pen is not so good as yours. (into Comparative Degree)

8. Write a paragraph using the hints given below. $1 \times 5 = 5$
Reading hobby – good and bad books – of the hour and forever – books as best companions – they entertain, educate and enlighten – make one forget one’s loneliness – guide and make one’s life richer – good book, a life blood of master’s spirit – Carlyle’s concept of true university, a collection of books.

9. Write a dialogue between Venu and Rajesh about their college anniversary. $1 \times 5 = 5$

10. Fill in the blanks in the following Dialogue writing. $1 \times 5 = 5$

A: Hello, who _____?

B: This is Ram.

A: Oh, hello, Ram. How _____?

B: Fine, not so bad.

A: Is Mohan at home?

B: No, he has _____ out.

A: When is he expected?

B: In about an hour, I guess.

A: Could you _____ a message to him? Ask him to call me back.

B: Sure. I’ll do that.

A: _____, Ram.

11. Reading Comprehension.

a) Read the following passage and answer the questions that follow. (From Prose) $5 \times 1 = 5$

If there is one custom that might be assumed to be beyond criticism it is the custom of shaking hands; but it seems that even this innocent and amiable practice is upon its trial. A heavy indictment has been directed against it in the Press on hygienic grounds, and we are urged to adopt some healthier mode of expressing our mutual emotion when we meet or part. I think it would need a pretty stiff Act of Parliament and a heavy code of penalties to break us of so ingrained a habit. Of course, there are many people in the world who go through life without ever shaking hands. Probably, most people in the world manage to do so. The Japanese bows, and the Indian salaams, and the Chinese makes a grave motion of the hand, and the Arab touches the breast of his friend at parting with the tips of his fingers.

- Which custom might be assumed to be beyond criticism?
- Why has a heavy indictment been directed against shaking hands in the press?
- What is needed to control the custom of shaking hands?
- What is meant by ‘ingrained’?
- How does the Arab greet?

b) Read the following passage and answer the questions that follow. (Unknown) $5 \times 1 = 5$

Just as Mrs. Richards was entering the dining-room, there was a knock on the front door. She knew that it must be the baker. She had told him to come straight in if ever she failed to open the door and to leave the bread on the kitchen table. Not wanting to frighten the poor man, Mrs. Richards quickly hid in the small store-room under the stairs. She heard the front door open and heavy footsteps in the hall. Suddenly the door of the store-room was opened and a man entered. Mrs. Richards realized that it must be the man from the Electricity Board who had come to read the meter. She tried to explain the situation, saying ‘It’s only me’, but it was too late. The man let out a cry and jumped back several paces.

- Where did Mrs. Richards hide when she heard a knock on the door?
- What does it mean by ‘realize’ in the above paragraph?
- In the sentence ‘It’s only me,’ whom does the word ‘me’ refer to?
- When did Mrs. Richards hear a knock on the front door?
- Who did enter when the door of the store-room was opened suddenly?

Andhra Pradesh State Council of Higher Education
General Telugu Syllabus for B.A/ B.Com/B.Sc., Courses Under CBCS
W.e.f. 2015-16 (Revised in April - 2016)

SEMESTER - II

I. ప్రాచీన కవిత్వం:

- (అ) ధూర్జటి - సాయుజ్యము
శ్రీకాళహస్తి మహాత్మ్యము - ద్వితీయాశ్వాసం (109-139)
త్రేతాంబుననొక్క నుండి పన్నగంబు వరకు
- (ఆ) చేమకూర వేంకటకవి- సుభద్రా పరిణయం
విజయ విలాసం - 3వ ఆశ్వాసం - (93-139)
“తనయుని పెండ్లికేగ వలె ధాత్రికి”నుండి
“తేరెక్కి దంపతులరుగ” వరకు.

II ఆధునిక కవిత్వం

- (అ) జాషువా - పిరదొసి లేఖ
“ఆ సుల్తాను” ... నుండి “అనుచు లిఖించె” వరకు)
- (ఆ) గొడ్డావు సత్యం - ‘చెట్టు’ ఖండిక 1 నుండి 25 పద్యాలు
“శ్రీనిధానం” నుండి “మహిమ నీది” పద్యం వరకు)
(కవితా వైజయంతి పద్య సంకలనం నుండి)

III కథానికలు

- (అ) కేతు విశ్వనాథ రెడ్డి - నమ్ముకున్న నేల
(ఆ) ముప్పాళ్ళ రంగనాయకమ్మ- అమ్మకు ఆదివారం లేదా?

IV నవల

- డా॥ వి.ఆర్. రాసాని - బతుకాట

విద్యార్థి కృత్యాలు:

1. సుభద్ర వివాహ ఆచారాలు - ఈనాటి వివాహ ఆచారాలు తులనాత్మకంగా పరిశీలించండి.
2. మీకు నచ్చిన ఒక చెట్టుకు సంబంధించిన పూర్తి సమాచారాన్ని సేకరించండి.
3. మీ ఇంటి నేపథ్యంలో అమ్మలకు ఆదివారం ఉందో లేదో ఒక సంఘటన ఆధారంగా కథ రాయండి.
4. నమ్ముకున్న నేల కథలోని రైతుల గాధలను చిత్రాలతో దినపత్రికల ఆధారంగా సేకరించండి.

VIKRAMA SIMHAPURI UNIVERSITY

NELLORE - 524 001

PART-II SANSKRIT

CBCS SEMESTER WISE SYLLABUS

2ND SEMESTER

PAPER - II POETRY, PROSE & GRAMMAR

Unit-I	Poetry	Vasishthasramagamanam Raghuvamsam - 1st Canto (35-54 Slokas)
Unit-II	Poetry-1	Gangavataranam Bhoja's Champu Ramayanam - Balakanda (Except Kumaropathi)
Unit-III	Prose	1) Pushpodbhava Charitam Dasakumara Charitam - Purvapeethika 4th Chapter 2) Krshiphalam Kaalaaya Tasmai Namah 20th Chapter - Written by Ogeti Parikshit Sarma Page : 273-277
Unit-IV	Grammar	1. Declensions Nouns ending in vowels : Nadee, Vadhoo, Mathru, Phala, Vari and Madhu Conjugations : III Conjugation Yudh IV Ish VIII Likh X Kath, Ram, Vand
Unit-V	Grammar :	1) Sandhi A) Halsandhi : Latva, Jastva B) Visarga Sandhi 1) Utva, 2) Visargalopa, 3) Rephadesa, 4) Ooshram 2) Samasa A) Avyayibhava, B) Bahuvrihi.

VIKRAMA SIMHAPURI UNIVERSITY

NELLORE - 524 001

SANSKRIT

CBCS SEMESTER WISE SYLLABUS

2ND SEMESTER

PATRON OF THE QUESTION PAPER

Time : 3hrs

Max Marks : 75

- | | | | | |
|---|--|------------|---------|------|
| I. | Essay | 1 out of 2 | 1 x 10 | 10M |
| | from the Lesson : Vasathasramagamanam | | | |
| II. | Essay | 1 out of 2 | 1 x 8 | 08M |
| | from the Lesson : Gangavataranam of Bhoja | | | |
| III. | Essay | 1 out of 2 | 1 x 10 | 10M |
| | One from each Lesson : 1) Pushpodbhava Charitham of Dandi, 2) Krishi Palam of Ogiti Parishth Sarma | | | |
| IV. | Short Answers | 4 out of 8 | 4 x 2 | 08M |
| | Two from Each Lesson : Vasathasramagamanam, Gangavataranam, Pushpodbhava Charitham and Krishi Palam | | | |
| V. | Annotations | 4 out of 8 | 4 x 3 | 12 M |
| | Two from each lesson | | | |
| VI. | Full form of Sabdas | 2 out of 4 | 2 x 4 | 08M |
| VII. | Full form of a Lakara of a given Dhatu | 2 out of 4 | 2x3 = 6 | |
| | Two from each Parshmaipada and Athmanepada | | | |
| VIII. | Combination of Words | 3 out of 6 | 3x1=3 | |
| | B) Division of Words | 3 out of 6 | 3x1=3 | |
| Note : All Questions should be given from Textual grammer part only. Not from the lesson as given in the Text Book. | | | | |
| Latva, Jestva and Visarga. | | | | |
| IX. | Simple Writing of Vighravakya | 3 out of 6 | 3x1=3 | |
| | All Questions should be given from Textual grammer part only. Not from the lesson as given in the Text Book. | | | |
| X. | Filling the Sloka and Writing the Meaning | 2 out of 4 | 2x2=4 | |
| | Two from Abhignanam and two from All from Vasisthasramagamanam only. | | | |

VIKRAMA SIMHAPURI UNIVERSITY::NELLORE

Foundation Course

INFORMATION & COMMUNICATION TECHNOLOGY –1 (ICT-1)

Computer Fundamentals and Office Tools

Common for BA/BCOM/BSC/BBA

FIRST YEAR SEMESTER - II

Unit-I:

Basics of Computers :Definition of a Computer - Characteristics and Applications of Computers – Block Diagram of a Digital Computer – Classification of Computers based on size and working – Central Processing Unit – I/O Devices.

Unit-II:

Primary, Auxiliary and Cache Memory – Memory Devices. Software, Hardware, Firmware and People ware – Definition and Types of Operating System – Functions of an Operating System – MS-DOS – MS Windows – Desktop, Computer, Documents, Pictures, Music, Videos, Recycle Bin, Task Bar – Control Pane.

Unit-III:

MS-Word

Features of MS-Word – MS-Word Window Components – Creating, Editing, Formatting and Printing of Documents – Headers and Footers – Insert/Draw Tables, Table Auto format – Page Borders and Shading – Inserting Symbols, Shapes, Word Art, Page Numbers, Equations – Spelling and Grammar – Thesaurus – Mail Merge

Unit-IV: MS-

PowerPoint

Features of PowerPoint – Creating a Blank Presentation - Creating a Presentation using a Template - Inserting and Deleting Slides in a Presentation – Adding Clip Art/Pictures - Inserting Other Objects, Audio, Video - Resizing and Scaling of an Object – Slide Transition – Custom Animation

Unit-V: MS-

Excel

Overview of Excel features – Creating a new worksheet, Selecting cells, Entering and editing Text, Numbers, Formulae, Referencing cells – Inserting Rows/Columns – Changing column widths and row heights, auto format, changing font sizes, colors, shading.

Reference Books:

1. Fundamentals of Computers by ReemaThareja, Publishers : Oxford University Press, India
2. Fundamentals of Computers by V.Raja Raman, Publishers : PHI
3. Microsoft Office 2010 Bible by John Walkenbach, Herb Tyson, Michael R.Groh and FaitheWempen, Publishers : Wiley

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE

Foundation Course
INFORMATION & COMMUNICATION TECHNOLOGY –1 (ICT-1)
Computer Fundamentals and Office Tools
Common for BA/BCOM/BSC/BBA
FIRST YEAR – SEMESTER-II

MODEL QUESTION PAPER

Time: 2 Hours

Max. Marks : 50

Answer any **FIVE** questions from the following 5x10=50

1. Explain Block diagram of a digital Computer.
2. Explain about Input devices
3. Write about primary memory in detail.
4. Define operating system. Explain about functions of operating system.
5. Explain about features of MS-Word.
6. Write about Mail Merge Concept in MS-Word
7. How to create a presentation in MS-Power point?
8. How to add animation affects to a slide in MS-Power point?
9. What is worksheet? Explain features of MS-Excel.
10. Explain editing and formatting a Work Sheet

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.
Foundation Course - 4
COMMUNICATION SKILLS AND SOFT SKILLS-1 (CSS -1)
(FOR ALL DEGREE PROGRAMMES)
I YEAR - II Semester
COURSE CONTENT (30 hours)

UNIT-1

VOCABULARY

- (a) Analogy
- (b) One-Word Substitutes
- (c) Words often confused
- (d) (I) Synonyms and (II) Antonyms

UNIT-2

GRAMMAR

- (a) Correction of sentences
- (b) Tenses

UNIT-3

GRAMMAR

- (a) Articles
- (b) Prepositions

UNIT-4

LISTENING SKILLS

- (a) The Importance of listening
- (b) Barriers / Obstacles of Effective Listening
- (c) Strategies of effective listening.

UNIT-5

READING SKILLS

- (a) Skimming
- (b) Scanning
- (c) Intensive and Extensive Reading
- (d) Reading Comprehension

Vikrama Simhapuri University :: Kakatur

Communication and Soft Skills (CSS) - 1

(Common to FIRST YEAR - SECOND SEMESTER B.A., B.A (O.L) B. Com., B.Sc.,BCA,BBA)
(A. P. Common Core Syllabus (CBCS) for 1 year Effective from 2015-16) (Revised in May 2016)
Model Question Paper (2017-18)

Time: 2 Hours

Max. Marks: 50

I. Answer any TWO of the following questions.

2x5=10

1. Choose the right word that has the same relationship as the original pair of words.
 - a. Honesty: Deception:: Kindness: _____. (Compassion, Cruelty, Pity)
 - b. Fox: Cunning :: Ant: _____. (Lazy / Industrious/Playful).
 - c. Player: Team :: Judge: _____. (Justice/ Jury/ Committee)
 - d. Hill: Mountain :: Sea: _____. (River/ Ocean/ Bay)
 - e. Poet: Poetess:: Lord : _____. (Lady / Count/ Gentleman)

2. Replace the underlined part of the sentence with one of the options given below the sentence.
 - a. The police arrested him for trying to kill himself.
i) death ii) suicide iii) murder
 - b. The library has undertaken a project to digitalize all the hand written matter.
i) tape-scripts ii) manuscripts iii) palm leaf scripts
 - c. She is planning to write her own life history.
i) biography ii) biodata iii) autobiography
 - d. The guest is presented with a bunch of flowers.
i) bouquet ii) branch iii) garland
 - e. It is very difficult to get water that is fit to drink in this area.
i) usable ii) potable iii) bottled

3. Fill in the blanks with either of the two words with the help of the context in each sentence.
 - a. I'm sorry I can't _____ (accept / except) your proposal.
 - b. The extreme weather conditions have _____ (affected/ effected) the food grain production.
 - c. The contestants in the run are allowed to use only _____ (canvas/ canvass) shoes.
 - d. Most of the special festival meals are concluded with a _____ (desert /dessert).
 - e. The _____ (poles/ polls) are scheduled for a week by the election commission.

4. Answer the following.
 - a. Write the Synonyms of the following words.
i) Handsome ii) Polite
 - b. Write the Antonyms of the following words.
iii) Friend iv) Ancient v) Crazy

II. Answer the following Questions

2x5=10

1. Correct the following sentences and rewrite them.
 - a. I am going to college every day.
 - b. They have waited for the mail since four weeks.
 - c. Look! The two boys quarrel.
 - d. The movie started before I went into the theatre.
 - e. When I saw, they are all in a group.

2. Fill in the blanks by choosing the suitable verb forms.
 - a. I _____ (go/goes) to Hyderabad every week.
 - b. His family _____ (is/are) at Hyderabad.
 - c. One of the best students _____ (is/are) selected for the position of president of the Club.
 - d. My friends and I _____ (am/are) going to the party.
 - e. Last night a group of youngsters _____ (was/were) addressed by the Minister.

III. Answer the Following Questions.

2x5=10

1. Fill in the blanks with suitable Articles.
 - a. I talked to ____ European.
 - b. My brother came early by ____ hour.
 - c. Honesty is ____ best policy.
 - d. I met ____ one-legged man.
 - e. My teacher is ____ honest man.
2. Fill in the blanks with suitable Prepositions.
 - a. Secret of success lies ____ hard work.
 - b. She has been sleeping ____ 9 pm.
 - c. My father is suffering ____ severe fever.
 - d. There is an exception ____ every rule.
 - e. I congratulated him ____ his success.

IV. Answer any TWO of the following in 75 words each.

2x5=10

1. Describe a few barriers to listening.
2. Give some strategies for effective listening.
3. Why is listening Important?
4. What are the types of listening?

V. Answer any TWO of the following questions.

2x5=10

1. How can we become good readers? What are the qualities of good readers?
2. Write about skimming.
3. What do you know about Intensive reading and extensive reading?
4. Read the following passage and answer the questions that follow.

Beware of those who use the truth to deceive. When someone tells you something that is true, but leaves out important information that should be included, he can create a false impression. For example, someone might say, "I just won one lakh rupees on the lottery. It was great. I took that one thousand rupee ticket back to the store and turned it in for one lakh rupees!" This guy's a winner, right? Maybe, maybe not. We then discover that he bought two hundred tickets, and only one was a winner. He's really a big loser! He deliberately omitted important information. That's called a half-truth. Half-truths are just dishonest. Untrustworthy candidates in political campaigns often use this tactic. Let's say that during the last term of a Chief Minister of one of the states, that state lost one lakh jobs and gained three lakh jobs. Then he/she contests election for another term. One of his/her opponents canvasses in the public saying, "During his/ her term as the C.M, the state lost one lakh jobs!" That's true. However an honest statement would have been, "During his/her term, the state had a net gain of two lakh jobs." Advertisers will sometimes use half-truths. An ad might boast, "Nine out of ten doctors recommend 'Danta' toothpaste to cure bleeding gums." It fails to mention that they only asked ten doctors and nine of them work for the 'Danta' Corporation.

- a. As per the writer of the passage how do people create false impression?
- b. Pick out the word from the passage that means to fool or cheat people.
- c. How can you say that the person who won the lottery ticket is actually hiding full truth?
- d. Is the C.M mentioned in the passage actually responsible for a fall or growth in the number of jobs? Support your answer.
- e. As per the passage, name the two fields where people use half truths.

* * *

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE

B. Sc. FIRST YEAR SEMESTER II

SUBJECT : BIO-TECHNOLOGY

BTT- 201 MACROMOLECULES, ENZYMOLOGY AND BIOENERGETICS

UNIT I

Nucleic Acids and Chromosomes: Chemical structure and base composition of nucleic acids, Chargaff's rules, Watson Crick Model (B-DNA), deviations from Watson-Crick model, other forms of DNA (A- and Z-DNA), forces stabilizing nucleic acid structures, (hydrogen bonds and hydrophobic associations, base stacking).

UNIT II

Amino acids and Proteins: Structure of amino acids occurring in proteins, classification of amino acids (pH based, polarity based and nutrition based physico-chemical properties of amino acids. Primary, Secondary, Tertiary & Quaternary structure of proteins.

UNIT III:

Carbohydrates: Definition, classification, nomenclature of carbohydrates, structures of monosaccharides, disaccharides and polysaccharides. Concept and examples of heteropolysaccharides.

Lipid: Types of lipids, structures of saturated and unsaturated fatty acids, triglycerides, phospholipids, Concept of acid value, saponification value and iodine value.

UNIT IV

Enzymes: Terminology: Active site, allosteric site, Holoenzyme, apoenzyme, coenzyme, substrate, inhibitor, activator, modulator etc. Classification and nomenclature of enzymes. Substrate Specificity (bond specificity, group specificity, absolute specificity, stereo-specificity), lock and key and induced fit models.

Enzyme kinetics: Michaelis-Menten equation, effect of substrate concentration, effect of enzyme concentration, effect of p H and temperature, temperature. Enzyme inhibition kinetics (reversible inhibition types – competitive, uncompetitive and non-competitive), brief idea of irreversible inhibition.

UNIT V

Bioenergetics: Concept of free energy, Entropy, Enthalpy & Redox Potential. Concept of high energy bonds as related to the structure of ATP, Phosphoenolpyruvate, Creatine phosphate etc. Glycolysis (pathway, entry of other monosachharides and disaccharides, regulation, inhibitors) Gluconeogenesis: Bypass reactions. Structure of mitochondria.

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.
THREE YEAR B.SC.(CBCS) DEGREE EXAMINATION
FIRST YEAR : SEMESTER - II
SUBJECT : BIO-TECHNOLOGY
(MACROMOLECULES, ENZYMOLOGY AND BIOENERGETICS)
MODEL PAPER

Time : 3hours

Max marks : 75

PART - A

*Answer any **FIVE** questions. Each question carries 5 Marks.*

5 X 5 = 25M

1. Forms of DNA
2. Physio Chemical Properties of Amino Acids.
3. Acid Value.
4. Heparin
5. Tri Glycerides
6. Induced Fit Model
7. Free Energy
8. Mito Chandria

PART-B

*Answer **ONE** question from each unit. Each question carries 10 Marks. 5 X 10 = 50 M*

UNIT-I

9. Write a Detailed note on Chemical Components of Nucleic Acids.

(OR)

10. Describe the Watson & Crick model of DNA.

UNIT-II

11. Explain the Structural organization of Proteins.

(OR)

12. Write about Aninoacids Classifications.

UNIT-III

13. Give an Account on Monosaccharibes with Examples.

(OR)

14. Write in details about fatty Acids.

UNIT-IV

15. Write the nomenclature and classifications of Enzymes.

(OR)

16. Explain about Enzyme inhibition.

UNIT-V

17. Give an account on ATP Structure.

(OR)

18. Describe Glycolysis.

SEMESTER - II
Paper II (Physical & General Chemistry) 60 hrs. (4h/w)

PHYSICAL CHEMISTRY 30 hrs (2h / w)

UNIT-I

Solidstate 10h Symmetry in crystals. Law of constancy of interfacial angles. The law of rationality of indices. The law of symmetry. Definition of lattice point, space lattice, unit cell. Bravis lattices and crystal systems. X-ray diffraction and crystal structure. Bragg's law. Defects in crystals. Stoichiometric and non-stoichiometric defects.

UNIT-II

1. Gaseous state 6 h Compression factors, deviation of real gases from ideal behavior. Vander Waal's equation of state. P-V Isotherms of real gases, Andrew's isotherms of carbon dioxide, continuity of state. Critical phenomena. The vander Waal's equation and the critical state. Law of corresponding states. Relationship between critical constants and vander Waal's constants. Joule Thomson effect.

2. Liquid state

4 h

Structural differences between solids, liquids and gases. Liquid crystals, the mesomorphic state. Classification of liquid crystals into Smectic and Nematic. Differences between liquid crystal and solid/liquid. Application of liquid crystals as LCD devices.

UNIT-III

Solutions 10h Liquid-liquid - ideal solutions, Raoult's law. Ideally dilute solutions, Henry's law. Non-ideal solutions. Vapour pressure - composition and vapour pressure-temperature curves. Azeotropes-HCl-H₂O, ethanol-water systems and fractional distillation. Partially miscible liquids-phenol-water, trimethylamine-water, nicotine-water systems. Effect of impurity on consulate temperature. Immiscible liquids and steam distillation.

Nernst distribution law. Calculation of the partition coefficient. Applications of distribution law.

GENERAL CHEMISTRY

30 hrs (2h / w)

UNIT-IV

1. Surface chemistry 8 h Definition of colloids. Solids in liquids(sols), preparation, purification, properties - kinetic, optical, electrical. Stability of colloids, Hardy-Schulze law, protective colloid. Liquids in liquids (emulsions) preparation, properties, uses. Liquids in solids (gels) preparation, uses.

1 N Homan He Komey
2 A. S. Khan
3

Adsorption: Physical adsorption, chemisorption. Freundlich, Langmuir adsorption isotherms. Applications of adsorption.

2. Chemical Bonding

7h

Valence bond theory, hybridization, VB theory as applied to ClF_3 , $\text{Ni}(\text{CO})_4$, Molecular orbital theory - LCAO method, construction of M.O. diagrams for homo-nuclear and hetero-nuclear diatomic molecules (N_2 , O_2 , CO and NO).

UNIT-V

Stereochemistry of carbon compounds 15 h Molecular representations- Wedge, Fischer, Newman and Saw-Horse formulae.

Optical isomerism: Optical activity- wave nature of light, plane polarised light, optical rotation and specific rotation.

Chiral molecules- definition and criteria (Symmetry elements)- Definition of enantiomers and diastereomers - Explanation of optical isomerism with examples Glyceraldehyde, Lactic acid, Alanine, Tartaric acid, 2,3-dibromopentane.

D,L and R,S configuration methods and E,Z- configuration with examples.

List of Reference Books

1. Principles of physical chemistry by Prutton and Marron
2. Solid State Chemistry and its applications by Anthony R. West
3. Text book of physical chemistry by K L Kapoor
4. Text book of physical chemistry by S Glasstone
5. Stereochemistry of Organic compounds by E L Eliel
6. Advanced Organic Chemistry by F A Carey and R J Sundberg
7. Stereochemistry by P.S.Kalsi
8. Stereochemistry of Organic compounds by D. Nasipuri
9. Advanced physical chemistry by Bahl and Tuli
10. Advanced Inorganic Chemistry Vol-I by Satyaprakash, Tuli, Basu and Madan

1. N Hanumanth Rao
2. A. K. Chandra
3. [Signature]

LABORATORY COURSE -II
Practical-II Analysis of Mixture Salt
(At the end of Semester-II)

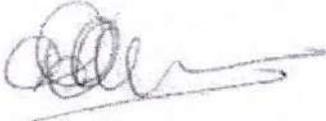
30 hrs (2 h / w)

Qualitative inorganic analysis

Analysis of mixture salt containing two anions and two cations (From two different groups) from the following:

Anions: Carbonate, sulphate, chloride, bromide, acetate, nitrate, borate, phosphate.

Cations: Lead, copper, iron, aluminum, zinc, manganese, calcium, strontium, barium, potassium and ammonium.

1 N Honsuhtu koms
2 
3

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.
THREE YEAR (CBCS) DEGREE EXAMINATION
SECOND SEMESTER
PART-II : CHEMISTRY
PHYSICAL AND GENERAL CHEMISTRY
MODEL PAPER

Time : 3 hours

Max marks : 75

PART - A

Answer any FIVE questions. Each question carries 5 Marks.

5 X 5 = 25M

1. Explain Schottky and Frenkel defects.
2. Define unit cell.
3. Derive vanderwaal's equation of state.
4. Explain Joule-Thomson effect.
5. State and explain Henry's law.
6. Explain the Azeotropic mixtures \bar{C} examples.
7. Write notes on Tyndall effect.
8. Write the differences between physical and chemical adsorption.
9. Explain specific rotation.
10. Write the optical isomerism of tartaric acid.

PART-B

Answer any FIVE questions. Each question carries 10 Marks.

5 X 10 = 50 M

11. Derive Bragg's equation.
12. Explain the following : (a) Laws of symmetry (b) Miller Indices.
13. Derive the relationship between critical constants and vanderwaal's constants.
14. What are liquid crystals explain the classification of liquid crystal \bar{e} examples.
15. What is critical solution temperature (CST)? Explain CST diagram of phenol-water system.
16. State Nernst distribution law and write its calculate their partition co-efficient.
17. Write the preparation, properties and uses of Emulsions and Gels.
18. Explain molecular orbital energy level diagram of "CO" molecule and mention its bond order and magnetic behavior.
19. (a) Explain Enantiomers and diastereomers with examples.
(b) Define Chiral molecule and explain with an example.
20. Explain Cahn-Ingold-Prelog rules with examples.

NOTE :- For Paper Setters, choosing the two short Questions and two long Questions for each unit.

N. H. ...
Me

Vikrama Simhapuri University::Nellore
B.Sc.(Computer Applications) Syllabus Under CBCS
(with effect from 2016-'17)

I YEAR – SEMESTER-II
PAPER-II: PROGRAMMING IN C

UNIT I: Introduction to C: Introduction – Structure of C Program – Compiling and Executing C Programs – Using Comments – Keywords – Identifiers – Basic Data Types in C – Variables – Constants – Operators in C (Arithmetic, Relational, Logical, Increment and Decrement)

UNIT II:

I/O Statements in C – formatted input and output functions – use of scanf() and printf() functions

Decision Control and Looping Statements: Introduction to Decision Control Statements – Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement

UNIT III:

Functions: Introduction – using functions – Function declaration/ prototype – Function definition – function call

– return statement – Passing parameters – Scope of variables – Storage Classes

UNIT IV

Arrays: Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array – one dimensional array for inter-function communication – Two dimensional Arrays – two dimensional arrays for inter-function communication

Strings: Introduction - String Operations – String and Character functions.

UNIT V

Pointers: Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – Passing Arguments to Functions using Pointer – Pointer and Arrays - Dynamic Memory Allocation

Structure, Union Data Types: Introduction – Declaring Structures – Arrays of Structures – Union – Declaring Unions

TEXT BOOK

1. Computer Fundamentals and Programming in C by REEMA THAREJA from OXFORD UNIVERSITY PRESS

REFERENCE BOOKS

2. E Balagurusamy: —COMPUTING FUNDAMENTALS & C PROGRAMMING|| – Tata McGraw-Hill, Second Reprint 2008, ISBN 978-0-07-066909-3.
3. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publ, 2002.
4. Henry Mullish & Huubert L.Cooper: The Sprit of C, Jaico Pub. House,1996.
5. Teach your C Skills-Kanithker

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

Vikrama Simhapuri University::Nellore
B.Sc.(Computer Applications) Syllabus Under CBCS
(with effect from 2016-'17)

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE
COMPUTER APPLICATIONS
BA(CA)/BCom(CA)/BSc(CA) - I YEAR - SEMESTER-II (w.e.f. 2016-'17)
PROGRAMMING IN C
MODEL QUESTION PAPER

Time: 3 Hours

Max. Marks : 75

Section-A

Answer any FIVE of the following Questions:

(5 x 5= 25 Marks)

1. Define constant. Explain about constants
2. Write about arithmetic and relational operators in C
3. Explain scanf() statement with an example
4. Write about if..else statement with an example
5. Write short notes on function prototype
6. Explain about return statement with examples
7. Write differences between one-dimensional and two-dimensional arrays
8. Write any three string functions
9. Define pointer. Explain how to declare a pointer variable
10. Differentiate structure and union

Section - B

Answer any FIVE of the following Questions

(5 × 10 =50 Marks)

11. What is data type? Write in detail about basic data types used in C language
12. Explain the structure of C program
13. Write about various input and output functions used in C language
14. Explain in detail about iterative statements
15. What is a function? Explain function declaration with an example
16. Write about any two storage classes
17. Define an array. Explain one-dimensional arrays
18. Write about various string operations
19. Explain dynamic memory allocation
20. Explain about structures with an example

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE
General English Syllabus for B.A/ B.A. (OL)/B.Com/B.Sc/BBA/BCA Courses under
CBCS w.e.f. 2015-16 (Revised in April-2016)

SEMESTER –III

Unit – I

PROSE

1. M.K. Gandhi: Shyness My Shield (from *The Story of My Experiments with Truth*)
2. Alexis C. Madrigal: Why People Really Love Technology: An Interview with Genevieve Bell

Unit – II

POETRY

1. Gabriel Okara: Once upon a Time
2. Seamus Heaney: Digging

Unit – III

SHORT STORY

1. JhumpaLahiri: The Interpreter of Maladies
2. Shashi Deshpande: The Beloved Charioteer

Unit – IV

ONE ACT PLAY

GurajadaAppa Rao: *Kanyasulkam*, translated by C. Vijayasree& T. VijayaKumar (Acts I & II)

Unit – V

LANGUAGE ACTIVITY

1. Classroom and Laboratory Activities
 - i. JAM Session
 - ii. Expansion of an idea
2. Classroom Activity
 - i. Transformation of sentences (Simple-Complex-Compound Sentences)
 - ii. Note Making
 - iii. Report Writing (Letter Format and paragraph Format)
 - iv. Reading Comprehension (From Prose)

Note: *In classroom instruction it may be ensured that the theoretical and practical components of CSS-II complement the language activity in this semester.*

* * *

VIKRAMA SIMHAPURI UNIVERSITY :: KAKUTUR

General English

(Common to SECOND YEAR – THIRD SEMESTER B.A., B.A. (OL), B.Com., B.Sc.,BBA,BCA)
(A. P. Common Core Syllabus (CBCS) for 1 year Effective from 2015-16) (Revised in April, 2016)

Model Question Paper (2017-18)

Time: 3 Hours

Max. Marks: 75

1. Answer any TWO of the following questions. 2X5 = 10
 - a. Summarize the main ideas of the essay 'Shyness, My Shield'.
 - b. What are the ideas of Genevieve Bell about gadget adoption and ubiquitous computing?
 - c. Describe the instances of Gandhi's shyness during his stay in England.
2. Answer any TWO of the following questions. 2X5 = 10
 - a. What does the father tell his son in the poem 'Once upon a Time'?
 - b. 'Between my finger and my thumb the squat pen rests. I'll dig with it'. Explain it with reference to the poem 'Digging'.
 - c. What assumptions can you make about the kind of life that the poet of the poem 'Once upon a Time' has lived? How is it different now?
3. Answer any TWO of the following questions. 2X5 = 10
 - a. Discuss the title of the story 'The Interpreter of Maladies'.
 - b. What feelings does the child have towards her mother in 'The Beloved Charioteer'?
 - c. What cultural differences do you notice among the characters in 'The Interpreter of Maladies'?
4. Answer any ONE of the following questions. 1X5 = 5
 - a. How is 'Kanyasulkam' a critique of society?
 - b. Write a note on the comic elements in the play 'Kanyasulkam'.
5. Prepare notes for JAM on ONE of the following. 1X5 = 5
 - a. My Career Choice
 - b. My Childhood
 - c. Smart Phone
6. Write a report to the news paper on your college day celebrations highlighting the important events. 1X5=5
7. Write about any TWO of the following. 2X5 = 10
 - a. Prevention is better than cure.
 - b. Where there is a will, there is a way.
 - c. Necessity is the mother of invention.
 - d. My Hobbies
 - e. The uses of Internet
8. Rewrite the following sentences as directed: 5x1 = 5
 - a. He is poor but he is honest. (into Simple Sentence)
 - b. As he was ill, he was absent. (into Compound Sentence)
 - c. The thief saw the police and he ran away. (into Simple Sentence)
 - d. He ran away in order to escape arrest. (into Compound Sentence)
 - e. You must work hard, and then you will pass. (into Complex Sentence)

9. Read the following passage and make notes of it.

1x5 = 5

There are different forms of environmental pollution. Air pollution is caused by the burning of coal and oil. It can damage the earth's vegetation and cause respiratory problems in humans. A second type of pollution is noise pollution. It is the result of the noise of aircraft and heavy traffic. Further, loud music is also a cause of noise pollution, which has been seen to affect people's hearing and give them severe headaches and high blood pressure. Another source of pollution is radioactivity, which occurs when there is a leak from a nuclear power station. Radioactivity is a deadly pollutant, which kills and causes irreparable harm to those exposed to it. Land and water pollution is caused by the careless disposal of huge quantities of rubbish, sewage and chemical wastes. Pollution of river and seas kills fishes and other marine life and also becomes the cause of water-borne diseases. Land pollution, on the other hand, poisons the soil, making the food grown in it unfit for consumption.

10. Write a Report on ragging in the educational institutions. (Paragraph Format).

1x5 = 5

11. Read the following passage and answer the questions that follow. (From Prose)

5x1 = 5

There were in the Committee others also who shared my view, but I felt myself personally called upon to express my own. How to do it was the question. I had not the courage to speak and I therefore decided to set down my thoughts in writing. I went to the meeting with the document in my pocket. So far I recollect, I did not find myself equal even to reading it, and the President had it read by someone else. Dr. Allinson lost the day. Thus in the very first battle of the kind I found myself siding with the losing party. But I had comfort in the thought that cause was right. I have a faint recollection that, after this incident, I resigned from the Committee.

- a. Who is 'I' in the given passage?
- b. What did the author do as he had not the courage to speak?
- c. How did he go to the meeting?
- d. When the author failed to read the document, what did the President do?
- e. When did the author resign from the Committee?

* * *

Andhra Pradesh State Council of Higher Education
General Telugu Syllabus for B.A/ B.Com/B.Sc., Courses Under CBCS
W.e.f. 2015-16 (Revised in April - 2016)

SEMESTER - III

I. ప్రాచీన కవిత్వం:

- (అ) పోతన - వామనావతారం
ఆంధ్రమహాభాగవతం - ఎనిమిదవ స్కంధం (582-621)
("కులమున్ రాజ్యము" నుండి "రవిబింబంబుపమింప" వరకు)
- (ఆ) కొఱవిగోపరాజు - శాలివాహన విజయం
సింహాసన ద్వాత్రింశిక - ఒకటవ ఆశ్వాసం (115-165)
("సజ్జిత దానధర్మ" నుండి "ఇట్లు విక్రమార్కుడీల్గిన" వరకు)

II ఆధునిక కవిత్వం

- (అ) కుసుమ ధర్మన్న - హరిజన శతకము (1-20)
"శ్రీహరినుత నీదు" నుండి "నీకులంబువారు" వరకు
- (ఆ) రాయప్రోలు సుబ్బారావు - సంక్రాంతి సంబరము - మిశ్రమంజరిలోంచి - "అయిదు
లక్షల అరవదేడులు" నుండి "మంగళము సంక్రాంతి సామికి" వరకు

III గద్యభాగం (వ్యాస సంపుటి)

- (అ) ఆచార్య గుజ్జర్లమూడి కృపాచారి - తెలుగు భాష
- (ఆ) ఆచార్య రాచపాళెం చంద్రశేఖర రెడ్డి - వ్యక్తిత్వ వికాసం

IV ఛందస్సు - అలంకారాలు

- (అ) ఛందస్సు - ఉత్పలమాల, చంపకమాల, శార్దూలం, మత్తేభం, కందం, తేటగీతి,
ఆటవెలది
- (ఆ) అలంకారాలు - ఉపమ, రూపక, ఉత్పేక్ష, స్వభావోక్తి, అతిశయోక్తి, అర్థాంతరన్యాస,
దృష్టాంతం, శబ్దాలంకారాలు.

విద్యార్థి కృత్యాలు:

1. తెలుగు వారాలు, తిథులు, నక్షత్రాలు, సంవత్సరాల పేర్లు నేర్చుకోండి.
2. మీ వ్యక్తిత్వాన్ని మీరు ఏ విధంగా మెరుగుపరుచుకుంటున్నారో వ్యాసం రాయండి.
3. అంత్యానుప్రాసాలంకారంలో ఒక కవిత సొంతంగా రాయండి.

VIKRAMA SIMHAPURI UNIVERSITY
NELLORE - 524 001
PART-II SANSKRIT
CBCS SEMESTER WISE SYLLABUS
II-YEAR – SEMESTER-III
PAPER - III DRAMA, UPANISHAD, ALANKARAS, PARTICIPLES &
SABDAS
(B.A., B.SC., B.COM)

Unit-I	Old Drama	Dootavakyam One act play by Bhasa
Unit-II	Modern Drama	Asani Niraasam By Kavisamrat Viswanatha Satyanarayana, Pub. in 1954
Unit-III	Upanishad	Sishyaanusaasanam - Sikshavalli of Taittiriyeeyupanishat
Unit-IV	Alankaras	1) Upama, 2) Ananvaya, 3) Utpreksha, 4) Deepakam, 5) Aprastuta Prasamsa, 6) Drushtanta.
Unit-V	Participles Krtpratyayas	1) Ktvaa, 2) Lyap, 3) Tuman, 4) Tavya.
	Sabdās :	
	1) Halanta	1) Vach, 2) Marut, 3) Bhavat, 4) Rajan, 5) Vidwas, 6) Manas
	2) Sarvanama	1) Asmad, 2) Yushmad

History of Sanskrit Literature :

1) पाणिनिः, 2) कौटिल्यः, 3) भरतमुनिः, 4) भारविः, 5) माघः, 6) भवभूतिः.

VIKRAMA SIMHAPURI UNIVERSITY
NELLORE - 524 001
SANSKRIT
CBCS SEMESTER WISE SYLLABUS

3RD SEMESTER

PATRON OF THE QUESTION PAPER

Time : 3hrs

Max Marks : 75

- | | | | | |
|-------|--|------------|--------|---------|
| I. | Essay | 1 out of 2 | 1x 10 | 10M |
| | from the Lesson : Dutavakyam of Bhasa | | | |
| II. | Essay | 1 out of 2 | 1 x 10 | 10M |
| | from the Lesson : Asaninirasam | | | |
| III. | Essay | 1 out of 2 | 1 x 8 | 08M |
| | One from each Lesson : 1) Shisyanusasanam | | | |
| IV. | Short Answers | 4 out of 6 | 4 x 2 | 08M |
| | Two from Each Lesson : | | | |
| V. | Annotations | 4 out of 6 | 4 x 3 | 12 M |
| | Two from each lesson | | | |
| VI. | Full form of Sabdas | 2 out of 4 | 2 x 3 | 06M |
| | One from each Gender and one from Sarvanama. | | | |
| VII. | Participles | 3 out of 6 | | 3x1 = 3 |
| | Two from each Participle | | | |
| VIII. | Alankaras | 2 out of 4 | | 2x5=10 |
| | Eleborate explanation should be given. | | | |
| IX. | History of Sanskrit Literature | 2 out of 4 | | 2x4=8 |
| | A Brief explanation of a Poet should be given. | | | |

Note : Question Paper should be Sanskrit Only. English Translation should not be there.

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE

Foundation Course - 5

INFORMATION & COMMUNICATION TECHNOLOGY -2 (ICT-2)

Internet Fundamentals and Web Tools

Common for BA / BCom / B Sc / BBA Programmes

III Semester

(30 Hours of Teaching Learning including Lab)

Unit-I :

Fundamentals of Internet : Networking Concepts, Data Communication – Types of Networking, Internet and its Services, Internet Addressing – Internet Applications – Computer Viruses and its types – Browser –Types of Browsers.

Unit-II:

Internet applications: Using Internet Explorer, Standard Internet Explorer Buttons, Entering a Web Site Address, Searching the Internet – Introduction to Social Networking: twitter, tumblr, LinkedIn, facebook, flickr, skype, yelp, vimeo, yahoo!, google+, youtube, WhatsApp, etc.

Unit-III :

E-mail : Definition of E-mail - Advantages and Disadvantages – UserIds, Passwords, Email Addresses, Domain Names, Mailers, Message Components, Message Composition, Mail Management, Email Inner Workings.

Unit IV:

WWW- Web Applications, Web Terminologies, Web Browsers, URL – Components of URL, Searching WWW – Search Engines and Examples

Unit-III :

Basic HTML: Basic HTML – Web Terminology – Structure of a HTML Document – HTML, Head and Body tags – Semantic and Syntactic Tags – HR, Heading, Font, Image and Anchor Tags – Different types of Lists using tags – Table Tags, Image formats – Creation of simple HTML Documents.

Reference Books :

1. In-line/On-line : Fundamentals of the Internet and the World Wide Web, 2/e - by Raymond Greenlaw and Ellen Hepp, Publishers : TMH

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE
FOUNDATION COURSE
INFORMATION & COMMUNICATION TECHNOLOGY -2 (ICT-2)
Internet Fundamentals and Web Tools
Common for BA / BCom / B Sc / BBA Programmes

SEMESTER-III (MODEL QUESTION PAPER)

Time: 2 Hours

Max. Marks : 50

Answer any FIVE of the following Questions: (5 x 10 = 50 Marks)

1. What is Network? Explain types of networks
2. Write about Internet applications.
3. Briefly explain features of Internet Explorer
4. Explain about any two Social networking sites
5. What is E-mail? Write advantages of E-mail.
6. Write about message components.
7. Define WWW. Write about web browsers.
8. What is Search engine? Explain search engines used on Internet.
9. Explain the structure of HTML document.
10. Explain list tags used in HTML

Instruction to Paper Setter:

TWO questions must be given from each unit

Foundation Course - 6
COMMUNICATION SKILLS AND SOFT SKILLS-2 (CSS -2)
Common for BA/BCom/BSc/BBA/BCA Programmes

III Semester
COURSE CONTENT (30 hours)

Unit I: Pronunciation - 1

The Sounds of English

Unit II: Pronunciation – 2

1. Word Accent
2. Intonation

Unit III: Speaking Skills -1

1. Conversation Skills
2. Interview Skills
3. Presentation Skills
4. Public Speaking

Unit IV: Speaking Skills -2

1. Role Play
2. Debate
3. Group Discussion

Unit V: Writing Skills

1. Spelling
2. Punctuation
3. Information Transfer
4. Tables
5. Bar Diagrams
6. Line Graphs
7. Pie Diagrams
8. Flow Charts
9. Tree Diagrams
10. Pictures

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VIKRAMA SIMHAPURI UNIVERSITY :: KAKUTUR

Communication and Soft Skills (CSS) - 2

(Common to SECOND YEAR - THIRD SEMESTER B.A., B.A (O.L) B.Com., B.Sc.,BBA,BCA)
(A. P. Common Core Syllabus (CBCS) for I year Effective from 2015-16) (Revised in May 2016)

Model Question Paper (2017-18)

Time: 2 Hours

Max. Marks: 50

I. Answer the following questions.

2X5=10

1. Write English spelling for the words given in phonemic transcription.

i) /a:tɪst/ ii) /kaindnəs/ iii) /pəzɪfən/ iv) /θɔ:n/ v) ba:bə/

2. Choose correct transcription for each word.

i) Apple a) /a: pl/ b) /a:pil/ c) /æpl/

ii) Album a) / Albəm/ b) /a:lbəm/ c) /ælbəm/

iii) College a) /ka:le:dʒ/ b) / ca:lɪdʒ/ c) /kɒlɪdʒ/

iv) Museum a) /mjuzi:əm/ b) / mju:siəm/ c) /mu:sium/

v) Summer a) / samə/ b) / sʌmə/ c) / sʌmmə/

II. Answer the following questions.

2X5=10

1. Mark the stress on the appropriate syllable in the following words.

a) Particular b) Canteen c) Police d) Traditional e) Propriety

2. Choose correct tone (Falling/ Rising) for each of the following sentences.

- Ravi Kumar is a good doctor.
- Have you taken breakfast?
- Where are you going?
- What's your name? (Warmth and affection).
- Shut the door, please.

III. Answer any TWO of the following questions.

2X5=10

- What are the dos and don'ts during an interview?
- How do you develop your presentation skills?
- When you are asked to address a gathering, what are the tips to be followed?

IV. Answer any TWO of the following questions.

2X5=10

- Write a dialogue between two friends about an accident that took place in their town.
- 'Using social media is a waste of time.' Prepare five debate points.
- What are the dos and don'ts in a group discussion?

V. Answer the following questions.

2X5=10

1. Present the given information in the form of a tree diagram.

There are three main types of geometrical figures. They are circle, triangle and quadrilateral. Equilateral, isosceles and scalene are the triangle forms that are used. The circle has no such sub forms. Quadrilateral can be represented by square, rectangle, rhombus and Parallelogram.

2. Identify the Correct spelling in each group.

- | | | |
|------------------|---------------|-----------------|
| a. i. Monotonos | ii. Monotonus | iii. Monotonous |
| b. i. Syllable | ii. Syllabel | iii. Syllabul |
| c. i. Vocabolary | ii. Vocablary | iii. Vocabulary |
| d. i. Grammer | ii. Grammar | iii. Grammor |
| e. i. Receive | ii. Recieve | iii. Receave |

B.Sc., SEMESTER III
BTT- 301: BIOPHYSICAL TECHNIQUES

UNIT – I:

Spectrophotometry: Spectrum of light, absorption of electromagnetic radiations, Beer's law - derivation and deviations, extinction coefficient. Instrumentation of UV and visible spectrophotometry, Double beam spectrometer; dual-wavelength spectrometer, Applications of UV and visible spectrophotometry. Spectrofluorometry: principle, instrumentation and applications. Absorption & emission flame photometry: principle, instrumentation and application.

UNIT II:

Chromatography: Partition principle, partition coefficient, nature of partition forces, brief account of paper chromatography. Thin layer chromatography and column chromatography. Gel filtration: Applications Ion-exchange chromatography : Principle, types of resins, choice of buffers, applications including amino acid analyzer. Affinity chromatography : specific and non-specific elution, applications. HPLC

UNIT III

Electrophoresis: Migration of ions in electric field, Factors affecting electrophoretic mobility. Paper electrophoresis, Gel electrophoresis: - Types of gels, Solubilizers, Procedure, Column & slab gels Detection, Recovery & Estimation of macromolecules. SDS-PAGE Electrophoresis and applications. Isoelectric focusing, Pulsed-field gel electrophoresis.

UNIT – IV:

Isotopic tracer technique: Radioactive & stable isotopes, rate of radioactive decay. Units of radioactivity. Measurement of radioactivity: - Ionization chambers, proportional counters, Geiger- Muller counter, Solid and liquid scintillation counters (basic principle, instrumentation and technique), Cerenkov radiation. Measurement of Stable isotopes: Mass spectrometry. Advantages and limitations, applications of isotopes in biotechnology (distribution studies, metabolic studies, isotope dilution technique, metabolic studies, clinical applications, autoradiography).

UNIT V:

Centrifugation: Basic principles, concept of RCF, types of centrifuges (clinical, high speed and ultracentrifuges). Preparative centrifugation: Differential and density gradient centrifugation, applications (Isolation of cell components). Analytical centrifugation: Sedimentation coefficient.

Biostatistics : Basic concepts of mean, median, mode, Standard deviation and Standard error. Introduction to ANOVA

Bio Informatics: Introduction, Databases, Search tools, Applications in Bo Technology.

PRACTICALS : B T P : 3 0 2 - METABOLISM & BIOPHYSICAL TECHNIQUES

1. Spectrophotometric analysis of DNA denaturation.
2. Determination of absorption spectrum of oxy- and deoxyhemoglobin and methemoglobin.
3. Protein estimation by E280/E260 method.
4. Paper chromatography of amino acids/sugars.
5. TLC of sugars/amino acids.
6. Cellular fractionation and separation of cell organelles using centrifuge.
7. Isolation of mitochondria and assay of marker enzyme.
8. Estimation of Urea by diacetyl monoxime method.
9. Estimation of Sugars by Folin Wu method
10. Validity of Beer's law for colorimetric estimation of creatinine.
11. Absorption spectrum of NAD & NADH
12. Preparation of standard buffers and determination of pH of a solution
13. Titration of a mixture of strong & weak acid
14. Paper electrophoresis of proteins
15. Gel electrophoresis of proteins.
16. SDS-PAGE of an oligomeric protein.
17. Calculation of mean, median, and mode (manual/computer aided).
18. Calculation of standard deviation and standard error (manual/computer aided).
19. Biostatistical problem based on standard deviation.

Note: - Mandatory to perform atleast 10 practicals

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VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.
SECOND YEAR : SEMESTER-III
SUBJECT : BIO-TECHNOLOGY
MODEL QUESTION PAPER

Time : 3 hours

Max marks : 75

PART - A

Answer any FIVE questions. Each question carries 5 Marks.

5 X 5 = 25M

1. Beer – Lambert's Law
2. Thin layer Chromatography
3. Electro Focusing
4. Cerenkov-radiation
5. Standard Error
6. Extinction Coefficient
7. HPCL
8. Sedimentation coefficient

PART-B

Answer ONE question from each unit. Each question carries 10 Marks. 5 X 10=50 M

9. (a) Write about spectro fluometry?
(OR)
(b) Explain the principle and instrumentation of UV-Visible Spectrometry?
10. (a) Define Chromatography and write about paper chromatography?
(OR)
(b) Write about Gel filtration Chromatography?
11. (a) Explain SDS – PAGE?
(OR)
(b) Define Electrophoresis and write the factors effecting Electrophoretic mobility?
12. (a) Write about rate of Radioactivity Decay?
(OR)
(b) Describe about Mass Spectrometry?
13. (a) Explain Preparative Centrifugation?
(OR)
(b) Give an account on Protein Databases?

SEMESTER - III
Paper III (INORGANIC & ORGANIC CHEMISTRY) 60 hrs (4 h / w)

INORGANIC CHEMISTRY

30 hrs (2h / w)

UNIT - I

1. Chemistry of d-block elements:

9h

Characteristics of d-block elements with special reference to electronic configuration, variable valence, magnetic properties, catalytic properties and ability to form complexes. Stability of various oxidation states

2. Theories of bonding in metals:

6h

Metallic properties and its limitations, Valence bond theory, Free electron theory, Explanation of thermal and electrical conductivity of metals, limitations, Band theory, formation of bands, explanation of conductors, semiconductors and insulators.

UNIT - II

3. Metal carbonyls :

7h

EAN rule, classification of metal carbonyls, structures and shapes of metal carbonyls of V, Cr, Mn, Fe, Co and Ni.

4. Chemistry of f-block elements:

8h

Chemistry of lanthanides - electronic structure, oxidation states, lanthanide contraction, consequences of lanthanide contraction, magnetic properties. Chemistry of actinides - electronic configuration, oxidation states, actinide contraction, comparison of lanthanides and actinides.

ORGANIC CHEMISTRY

30 h (2h/w)

UNIT - III

1. Halogen compounds 5 h Nomenclature and classification of alkyl (into primary, secondary, tertiary), aryl, aryl alkyl, allyl, vinyl, benzyl halides.

Nucleophilic aliphatic substitution reaction- classification into SN^1 and SN^2 - reaction mechanism with examples - Ethyl chloride, t-butyl chloride and optically active alkyl halide 2-bromobutane.

N. Hemant Kumar



2. Hydroxy compounds

5 h

Nomenclature and classification of hydroxy compounds.

Alcohols: Preparation with hydroboration reaction, Grignard synthesis of alcohols.

Phenols: Preparation i) from diazonium salt, ii) from aryl sulphonates, iii) from cumene.

Physical properties- Hydrogen bonding (intermolecular and intramolecular). Effect of hydrogen bonding on boiling point and solubility in water.

Identification of alcohols by oxidation with KMnO_4 , Ceric ammonium nitrate, Luca's reagent and phenols by reaction with FeCl_3 .

Chemical properties:

a) Dehydration of alcohols.

b) Oxidation of alcohols by CrO_3 , KMnO_4 .

c) Special reaction of phenols: Bromination, Kolbe-Schmidt reaction, Riemer-Tiemann reaction, Fries rearrangement, azocoupling, Pinacol-Pinacolone rearrangement.

UNIT-IV

Carbonyl compounds 10 h Nomenclature of aliphatic and aromatic carbonyl compounds, structure of the carbonyl group. Synthesis of aldehydes from acid chlorides, synthesis of aldehydes and ketones using 1,3-dithianes, synthesis of ketones from nitriles and from carboxylic acids. Physical properties: Reactivity of carbonyl group in aldehydes and ketones.

Nucleophilic addition reaction with a) NaHSO_3 , b) HCN , c) RMgX , d) NH_2OH , e) PhNHNH_2 , f) 2,4 DNPH, g) Alcohols-formation of hemiacetal and acetal. Base catalysed reactions: a) Aldol, b) Cannizzaro's reaction, c) Perkin reaction, d) Benzoin condensation, e) Haloform reaction, f) Knoevenagel reaction. Oxidation of aldehydes- Baeyer-Villiger oxidation of ketones. Reduction: Clemmensen reduction, Wolf-Kishner reduction, MPV reduction, reduction with LiAlH_4 and NaBH_4 . Analysis of aldehydes and ketones with a) 2,4-DNPH test, b) Tollen's test, c) Fehling test, d) Schiff's test e) Haloform test (with equation)

UNIT-V

1. Carboxylic acids and derivatives 6 h Nomenclature, classification and structure of carboxylic acids. Methods of preparation by a) Hydrolysis of nitriles, amides b) Hydrolysis of esters by acids and bases with mechanism c) Carbonation of Grignard reagents. Special methods of preparation of aromatic acids by a) Oxidation of side chain. b) Hydrolysis by benzotrichlorides. c) Kolbe reaction. **Physical properties:** Hydrogen bonding, dimeric association, acidity-strength of acids with examples of trimethyl acetic acid and trichloroacetic acid. Relative differences in the acidities of aromatic and aliphatic acids. **Chemical properties:** Reactions involving H, OH and COOH groups- salt formation, anhydride formation, acid chloride formation, amide formation and esterification (mechanism). Degradation of carboxylic acids by Huns-Diecker reaction, decarboxylation by Schimdt reaction, Arndt-Eistert synthesis, halogenation by Hell- Volhard- Zelinsky reaction.

N. Hanumanth Kumar


2. Active methylene compounds

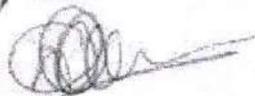
4 h

Acetoacetic ester: keto-enol tautomerism, preparation by Claisen condensation, Acid hydrolysis and ketonic hydrolysis. Preparation of a) monocarboxylic acids. b) Dicarboxylic acids. c) Reaction with urea

Malonic ester: preparation from acetic acid. **Synthetic applications:** Preparation of a) monocarboxylic acids (propionic acid and n-butyric acid). b) Dicarboxylic acids (succinic acid and adipic acid) c) α,β -unsaturated carboxylic acids (crotonic acid). d) Reaction with urea.

List of Reference Books

1. Selected topics in inorganic chemistry by W.D.Malik, G..D.Tuli,R.D.Madan
2. Inorganic Chemistry J E Huheey, E A Keiter and R L Keiter
3. A Text Book of Organic Chemistry by Bahl and Arun bahl
4. A Text Book of Organic chemistry by I L Finar Vol I
5. Organic chemistry by Bruice
6. Organic chemistry by Clayden
7. Advanced Inorganic chemistry by Gurudeep Raj
8. Basic Inorganic Chemistry by Cotton and Wilkinson
9. Concise Inorganic Chemistry by J.D.Lee

N H o m H o 10 cm


LABORATORY COURSE -III

30 hrs. (2 h / w)

Practical Paper-III Titrimetric analysis and Organic Functional Group Reactions (At the end of Semester-III)

Titrimetric analysis:

25M

1. Determination of Fe (II) using KMnO_4 with oxalic acid as primary standard.
2. Determination of Cu(II) using $\text{Na}_2\text{S}_2\text{O}_3$ with $\text{K}_2\text{Cr}_2\text{O}_7$ as primary standard.

Organic Functional Group Reactions

25M

3. Reactions of the following functional groups present in organic compounds (at least four) Alcohols, Phenols, Aldehydes, Ketones, Carboxylic acids and Amides

N H ...


VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.
THREE YEAR (CBCS) DEGREE EXAMINATION
THIRD SEMESTER
PART-III : CHEMISTRY
INORGANIC AND ORGANIC CHEMISTRY
MODEL PAPER

Time : 3 hours

Max marks : 75

PART - A

Answer any FIVE questions. Each question carries 5 Marks.

5 X 5 = 25M

1. Write on complex formation of transition elements with examples
2. Explain semi conductors
3. Define EAN rule with Two examples
4. Write down the comparison of lanthanoids and actinoids
5. Write down the preparation of alcohols from Grignard reagent
6. Write down the mechanism of Reimer-tiemann reaction
7. Write on Clemmenson and wolf-kishner reductions
8. Explain the Halo form reaction
9. Write on Esterification with mechanism
10. Explain Keto-enol Tautomerism with examples

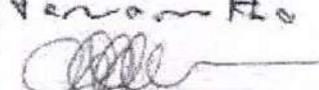
PART-B

Answer any FIVE questions. Each question carries 10 Marks.

5 X 10 = 50 M

11. What are Transition elements. Explain variable Oxidation states of 3d Series of elements with their stabilities.
12. Explain the free electron theory of metals and their limitations.
13. What are Metal Carbonyls . Draw the structure and shape of $[Fe(CO)_5]$.
14. Write down the comparison of Lanthanoids and Actinoids.
15. Discuss the S_N1 and S_N2 reactions with suitable examples.
16. Explain the followings :- (a) Pinacol-Pinacolone rearrangement (b) Luca's reagent.
17. Explain the followings :- (a) Aldol condensation (b) Perkin's reaction.
18. Explain the followings :- (a) Aldol condensation (b) Perkin's reaction.
19. Write down the preparation of carboxylic acids from Esters and Nitriles.
20. How is auto acetic ester prepared from clasin condensation and also explain the three synthetic applications of Automatic ester.

NOTE :- For Paper Setters, choosing the two short Questions and two long Questions for each unit.

N Hanumantha Rao


II YEAR – SEMESTER-III
PAPER-III: OFFICE AUTOMATION TOOLS

Unit-I: MS-Excel: features of Ms-Excel, Parts of MS-Excel window, entering and editing data in worksheet, number formatting in excel, different cell references, how to enter and edit formula in excel, auto fill and custom fill, printing options.

Unit-II: Formatting options: Different formatting options, change row height, formulae and functions, **Functions:** Meaning and advantages of functions, different types of functions available in Excel.

Unit-III: Charts: Different types of charts, Parts of chart, chart creation using wizard, chart operations, data maps, graphs, data sorting, filtering. Excel sub totals, scenarios, what-if analysis

Unit-IV: MS Access: Creating a Simple Database and Tables: Features of Ms-Access, Creating a Database, Parts of Access. **Tables:** table creation using design view, table wizard, data sheet view **Forms:** The Form Wizard, design view, columnar, tabular, data sheet, chart wizard.

Unit- V: Finding, Sorting and Displaying Data: Queries and Dynasts, Creating and using select queries, Returning to the Query Design, Multi-level sorts, Finding incomplete matches, showing All records after a Query, saving queries . **Printing Reports:** Form and Database Printing. **Relational Databases:** Flat Versus Relational, Types of Relationships, Viewing Relationships, Defining and Redefining Relationships, Creating and Deleting Relationships.

Reference Books:

- 1.Ron Mansfield, Working in Microsoft Office 2000, Tata McGraw Hill(2008)
- 2.Ed Bott, Woody Leonhard, Using Microsoft Office 2007, Pearson Education(2007)
3. Sanjay Saxsena, Microsoft Office,
- 4.Microsoft Office, BPB Publications

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

Vikrama Simhapuri University::Nellore
B.Sc.(Computer Applications) Syllabus Under CBCS
(with effect from 2016-'17)

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE
COMPUTER APPLICATIONS
BA(CA)/BCom(CA)/BSc(CA) - I YEAR - SEMESTER-III (w.e.f. 2016-'17)
OFFICE AUTOMATION TOOLS
MODEL QUESTION PAPER

Time: 3 Hours

Max. Marks : 75

Section-A

Answer any FIVE of the following Questions:

(5 x 5= 25 Marks)

1. Write some features of Excel
2. Write about how to enter and edit data in worksheet
3. Explain how to change row height in Excel
4. Write about formulae used in Excel
5. Explain about data sorting in Excel
6. Write and explain sub totals
7. Explain various parts of MS-Access
8. Write about chart wizard
9. Define queries and dynasets
10. Write about types of relationships

Section - B

Answer any FIVE of the following Questions

(5 × 10 =50 Marks)

11. What is MS-Excel? Explain various parts of MS-Excel window
12. Explain auto fill and custom fill in Excel
13. Write about various functions used in Excel
14. Explain in detail about formatting options
15. What is a chart? Explain
16. Explain various what..if analysis tools used in Excel.
17. Explain how to create a database in MS-Access
18. Write about forms in Access.
19. Define Report. Explain how to create report in Access
20. Explain about Differences between flat and relational databases

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE

Foundation Course -7 SEMESTER-IV

COMMUNICATION SKILLS AND SOFT SKILLS-3 (CSS -3)

Common for BA/BCom/BSc/BBA/BCA Programmes

COURSE CONTENT (30 hours)

Unit - I

SOFT SKILLS

- I. Positive Attitude
- II. Body language
- III. SWOT / SWOC Analysis
- IV. Emotional Intelligence
- V. Netiquette

Unit - II

PARAGRAPH WRITING

1. Paragraph Structure
2. Development of Ideas

Unit - III

PARAPHRASING AND SUMMARISING

1. Elements of Effective Paraphrasing
2. Techniques of Paraphrasing
3. What makes a Good Summary
4. Stages of Summarising

Unit - IV

LETTER WRITING

1. Letter Writing (Formal and Informal)
2. E-Correspondence

Unit - V

RESUME AND CV

1. Resume and Curriculum Vitae
2. Cover Letters

* * *

Reference Books:

- Commissionerate of Collegiate Education, Government of Andhra Pradesh (2015)
JKC -Communication Skills and Soft Skills: Student's Book
- Sethi, J., and P.V. Dhamija (1999) *A Course in Phonetics and Spoken English*
New Delhi: Prentice-Hall of India
- Daniel Jones (2011) *English Pronouncing Dictionary* (18th Edition) Ed. Peter Roach, Jane Setter, and John Esling
- Quirk, Randolph and Sydney Greenbaum (1973) *A University Grammar of English*. Harlow: Longman.
Chapters 2, 3, and 7
- White, Goodith (2010) *Listening (Resource Book for Teachers)*. Oxford University Press
- Nageshwar Rao and Rajendra P. Das (2009) *Communication Skills*. Mumbai: Himalaya Publishing House
- Burton, S.H. (1983) *Mastering English Language*. The Macmillan Press Limited Chapter 3:
Comprehension
- Grellet, Francoise (2007) *Developing Reading Skills*. Cambridge University Press
- Roberts, Rachael, Joanne Gakonga, and Andrew Preshous (2004) *IELTS Foundation: Student's Book*.
Oxford: Macmillan Education
- Roberts, Rachael, Joanne Gakonga, and Andrew Preshous (2004) *IELTS Foundation: Study Skills*.
Oxford: Macmillan Education.

VIKRAMA SIMHAPURI UNIVERSITY :: KAKUTUR

COMMUNICATION AND SOFT SKILLS (CSS) - 3

(Common to SECOND YEAR - FOURTH SEMESTER B.A., B.A (O.L) B.Com., B.Sc.,BCA,BBA)
(A. P. Common Core Syllabus (CBCS) for I year Effective from 2015-16) (Revised in May 2016)

Model Question Paper (2017-18)

Time: 2 Hours

Max. Marks: 50

1. Answer any ***TWO*** of the following questions. 2 X 5 = 10
 1. Write a few suggestions for building positive attitude.
 2. Mention a few tips for improving one's good body language.
 3. What is SWOT/ SWOC analysis? Why is it useful for students?
 4. What is emotional intelligence? What is its importance?
 5. What do you know about Netiquette? Write a few general netiquettes.

2. Answer any ***TWO*** of the following questions. 2 X 5 = 10
 1. What is a paragraph? Write about the types of paragraphs.
 2. What are the general rules for writing a good paragraph?
 3. Write a paragraph on a Rainy Day.
 4. Write a paragraph on Death Penalty for Criminals
 5. Write about the parts of a good paragraph.

3. Answer any ***TWO*** of the following questions. 2 X 5 = 10
 1. What is paraphrasing? What are features of a paraphrase?
 2. Write a few guidelines for paraphrasing.
 3. Write about good summary.
 4. Write a short note on stages of summarizing.
 5. Write a summary of the story given below.

There was a villager. He was illiterate. He did not know how to read and write. He often saw people wearing spectacles for reading books or papers. He thought, "If I have spectacles, I can also read like these people. I must go to town and buy a pair of spectacles for myself." So one day he went to a town. He entered a spectacles shop He asked the shopkeeper for a pair of spectacles for reading. The shopkeeper gave him various pairs of spectacles and a book. The villager tried all the spectacles one by one. But he could not read anything. He told the shopkeeper that all those spectacles were useless for him. The shopkeeper gave him a doubtful look. Then he looked at the book. It was upside down! The shopkeeper said, "Perhaps you don't know how to read." The villager said, "No, I don't. I want to buy spectacles so that I can read like others. But I can't read with any of these spectacles." The shopkeeper controlled his laughter with great difficulty when he learnt the real problem of his illiterate customer. He explained to the villager, "My dear friend, you are very ignorant. Spectacles don't help to read or write. They only help you to see better. First of all you must learn to read and write."

4. Answer any ***TWO*** of the following questions. 2 X 5 = 10
 1. Write a letter to the MRO requesting him/her for the issue of Income Certificate.
 2. Write a letter to your father asking him to send you money for paying your hostel fee.
 3. Write a letter to a bookshop ordering the books you want.
 4. One of your friends has recently left for the USA for doing MS. You miss him very much.
 5. Write an e-mail to your friend Ravi.
 - 6.

5. Answer any ***TWO*** of the following questions. 2 X 5 = 10
 1. Prepare Resume of your own for the post of accountant in a reputed company.
 2. Prepare a resume for the post of computer operator in a Public School.
 3. Write a covering letter to accompany your Resume for the post of accountant.
 4. Write a covering letter to accompany your Resume for the post of computer operator.

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.

Foundation Course - 8

ANALYTICAL SKILLS

Syllabus, For all Degree Programmes.
w.e.f. 2015-16 (Revised in April, 2016)

Semester – IV

(Total 30 Hrs)

UNIT – 1

Data Analysis:-The data given in a Table, Graph, Bar Diagram, Pie Chart.

UNIT – 2

Sequence and Series:- Analogies of numbers and alphabets completion of blank spaces following the pattern in A:b::C: d relationship odd thing out; Missing number in a sequence or a series.

UNIT - 3

Arithmetic ability:-Algebraic operations BODMAS, Fractions, Divisibility rules, LCM&GCD (HCF).

UNIT - 4

Quantitative aptitude:- Calendar Problems, Clock Problems, Ratios and proportion.

UNIT – 5

Business computations:- Averages, Percentages, Profit & Loss.

Reference Books:

1. Quantitative Aptitude for Competitive Examination by R S Agrawal, S.Chand publications.
2. Quantitative Aptitude and Reasoning by R V Praveen, PHI publishers.
3. Quantitative Aptitude : Numerical Ability (Fully Solved) Objective Questions, Kiran Prakashan, Pratogitaprakasan, Kic X, Kiran Prakasan publishers
4. Quantitative Aptitude for Competitive Examination by Abhijit Guha, Tata Mc Graw hill publications.
5. Old question Paper of the exams conducted by (Wipro, TCS, Infosys, Etc) at their recruitment process, source-Internet.

Note : The teachers/students are expected to teach /learn the contents by not converting them to the problems of algebra at the maximum possible extent, but to use analytical thinking to solve the exercises related to those topics. This is the main aim of the course.

1. R S Agrawal
2. R V Praveen
3. Kiran Prakashan
4. Abhijit Guha
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VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.
FOUNDATION COURSE-8
SEMESTER-IV
ANALYTICAL SKILLS
Model Question Paper

Time : 2 Hours

Answer any 25 Questions. All question carry equal marks.

Max. Marks : 50

25 X 2 = 50M

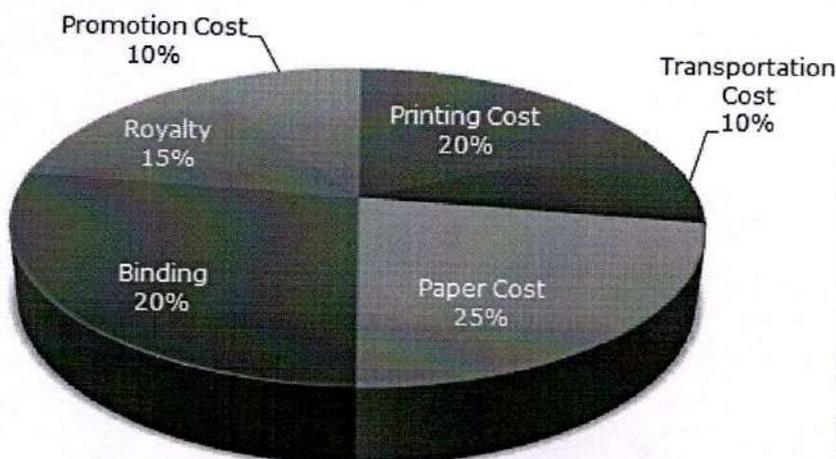
UNIT-I

Study the following table and answer the question based on it.
 Expenditures of company (in Lakh Rupees) per annum over the given year.

Year	Item of Expenditure				
	Salary	Fuel	Bonus	Interest	Taxes
1998	288	98	3.00	23.4	83
1999	342	112	2.52	32.5	108
2000	324	101	3.84	41.6	74
2001	336	133	3.68	36.4	88
2002	420	142	3.96	49.4	98

- What is the average amount of interest per year company had to pay?
 A) 32.43 Lakhs B) 33.72 Lakhs
 C) 34.18 Lakhs D) 36.66 Laksh
- The total amount of bonus during these period is approximately what percent of the total salary during the period
 A) 0.1% B) 0.5% C) 1% D) 1.25%
- Total expenditure on all these items in 1998 was approximately what percent of total expenditure in 2002
 A) 62% B) 66% C) 69% D) 71%
- Total expenditure of the company over these items during 2000 is?
 A) 544.44 Lakhs B) 501.11 Lakshs C) 446.46 Lakhs D) 478.87 Lakhs
- The ratio between total expenditure on taxes of all years and total expenditure on fuel respectively?
 A) 4:7 B) 10:13 C) 15:18 D) 5:8

Study the following Pi-Chart and answer the following questions
 Various expenditures (in percentage) incurred in publishing a book



1. 3000000
 2. 1000000
 3. 1000000
 4. 1000000
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6. If for a certain quantity of books the publisher has to pay Rs 30600 as printing cost then what will be the amount of royalty?
 A) Rs19,450 B) Rs21,200 C) Rs22,950 D) Rs26,150
7. What is the central angle of the section corresponding to the expenditure of Royalty?
 A) 150° B) 24° C) 54° D) 48°
8. What is difference of cost for paper and binding in percentages?
 A 5% B) 10% C) 15% D) 20%
9. If 5500 copies are published and the transportation cost on them is 82500, then what should be the selling price of book so that publisher earn 25% profit
 A) Rs 187.50 B) Rs 191.50 C) Rs175 D) Rs180
10. Royalty on the book is less than the printing cost by
 A) 5% B) 331% C) 20% D) 25%

UNIT-II

Complete the following Series

11. 125,80,45,20, _____
 A) 5 B) 15 C) 25 D) 35
12. 6,12,18,24 _____
 A) 30 B) 26 C) 28 D) 29
13. 20,40,60,80 _____
 A) 90 B) 85 C) 100 D) 110
14. T,R,P,N _____
 A) M B) L C) O D) S
15. GH, JK, MN, PQ _____
 A) MP B) ST C) TR D) RT
16. 2B, 4C, 6E, 8H _____
 A) 10 L B) 9 P C) 8 F D) 13M
17. D-4, F-6, H-8, J-10 _____
 A) Z-1 B) N-10 C) M-16 D) L-12
18. Find the odd one 3,5,7,9,11,13
 A) 3 B) 9 C) 7 D) 13
19. Girl : Beautiful :: Boy :?
 A) Smart B) Handsome C) Heroic D) Pretty
20. Victory: Encouragement : : failure?
 A) Sadness B) Defeat C) Anger D) Frustration

1. 300000
 2. 24
 3. 100
 4. 10
 5-770

UNIT-III

21. $15 \div 3 \times 1 \div 5 =$ _____
A) 1 B) 2 C) 3 D) 4
22. $\frac{3}{4}$ OF $12 + 9 =$ _____
A) 21 B) 22 C) 18 D) 20
23. $(6+4) \times 5 + 14 =$ _____
A) 50 B) 64 C) 30 D) 56
24. What is the value of $\frac{3}{4}$ in 1600?
A) 1000 B) 1100 C) 1200 D) 1300
25. What is the result of $\frac{\frac{2}{3} \times \frac{3}{4}}{\frac{2}{4} \times \frac{8}{2}}$?
A) 1 B) 2 C) 3 D) $\frac{1}{4}$
26. 4082A0 is divisible by 4 then A is ?
A) 1 B) 2 C) 3 D) 5
27. Sum Of 10 Natural Numbers Is
A. 65 B. 35 C. 45 D. 55
28. Find The Hcf Of 3556 And 3444 Is?
A. 23 B. 25 C. 26 D. 28
29. Find The L.C.M Of 16, 24, 36, 54?
A. 432 B. 324 C. 243 D. 24
30. Find the Highest Common Fraction Of 36 & 84
A. 8 B. 12 C. 14 D. 24

UNIT-IV

31. What Was the Day India Attained Independence (1947-Aug-15)
A. Friday B. Saturday C. Monday D. Sunday
32. 1869-Oct-2 Was What Day?
A. Friday B. Saturday C. Monday D. Sunday
33. ----- Is Leap Year?
A. 1996 B. 1997 C. 1998 D. 1999
34. How Many Times the Two Hands Co-Inside in A Day
A. 21 B. 22 C. 23 D. 24
35. When Do the Two Hands of a Clock Co-Inside between 9 and 10'clock
A. 8.45 B. 9.50 C. $9.49\frac{1}{11}$ D. $9.59\frac{1}{11}$
36. Between 5 P.M And 6 P.M When Will the Two Hands Of The Clock Be At Night Angle?
A. $5:10\frac{10}{11}$ B. $5:43\frac{7}{11}$ C. 5:10 D. 5:42

1. 3 p.m. (written)
2. ~~3 p.m.~~ (crossed out)
3. 11.45 (written)
4. 8:10 (written)
5-7:10 (written)

37. A Particular Sum Was Divided Among A, B and C in the Ratio 2: 6: 7 Respectively. If The Amount Received By A Was 4000 Then Total Amount
 A.30000 B.20000 C.25000 D.29000
38. Divided 672 In The Ratio 5: 3 Then The First Part (5) Value?
 A. 420 B.252 C. 410 D. 240
39. If $0.75 : X :: 5 : 8$ Then : X Is -----
 A. $\frac{6}{5}$ B. $\frac{5}{6}$ C. $\frac{7}{5}$ D. $\frac{5}{7}$
40. $4 : 9 : 12 : X ?$ -----
 A. 27 B. 27 C. 29 D. 30

UNIT-V

41. Find the Average Of All Prime Numbers Between 30 And 50?
 A. 35 B.39.8 C.40.2 D. 41.4
42. Find the Average Of First Five Natural Numbers
 A. 15 B.20 C. 16 D.18
43. Average Of 76, 65, 82, 67, 85 Is
 A. 65 B.69 C.75 D. 76
44. X And Y Are Two Values Then Is The Percentage Of X In Y
 A. $\frac{x}{y} \times 100$ B. $\frac{y}{x} \times 100$ C. $x \times 100$ D. $y \times 100$
45. What Is The Value (80% Of 400)+ (30% Of 200)
 A. 380 B.390 C.4850 D.4880
46. 4598 Is 95% Of -----?
 A. 4800 B.4840 C.4850 D.4880
47. Cost Prize Is X, Selling Prize Is Y ($Y > X$) Then What Is the Profit Percentage
 A. $\frac{y-x}{x} \times 100$ B. $\frac{x-y}{y} \times 100$ C. $\frac{x}{y} \times 100$ D. $\frac{y}{x} \times 100$
48. Find The Cost Prize When Selling Prize Is 40 And Gain Percentage 33.33
 A.30 B.35 C.40 D.45
49. If the Cost Price of 12 Pens Equal To The Selling Price Of 8 Pens The Gain Percentage Is?
 A.50% B.70% C.60% D.80%
50. Some Articles Were Bought For 5000 And Sell for 4500 Then Loss Percentage
 A.10% B.20% C.30% D.40%

1. 30000
 2. ~~420~~
 3. 4800
 4. 33.33
 5-770 de

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.
THREE YEAR (CBCS) DEGREE EXAMINATION
(FOR BA/BSC/BCOM/BBA COURSES)
FOUNDATION COURSE - 9
ENTREPRENEURSHIP
SYLLABUS

SEMESTER – IV

(Total 30 Hrs)

Unit-I: Entrepreneurship: Entrepreneur characteristics – Classification of Entrepreneurships – Incorporation of Business – Forms of Business organizations – Role of Entrepreneurship in economic development – Start-ups.

Unit-II: Idea Generation and Opportunity Assessment: Ideas in Entrepreneurships – Sources of New Ideas – Techniques for generating ideas – Opportunity Recognition – Steps in tapping opportunities.

Unit-III: Project Formulation and Appraisal : Preparation of Project Report – Content; Guidelines for Report preparation – Project Appraisal techniques – economic – Steps Analysis; Financial Analysis; Market Analysis; Technical Feasibility.

UNIT-IV: Institutions Supporting Small Business Enterprises: Central level Institutions: NABARD; SIDBI, NIC, KVIC; SIDIO; NSIC Ltd; etc. – state level Institutions – DICs-SFC- SSIDC- Other financial assistance.

Unit-V: Government Policy and Taxation Benefits: Government Policy for SSIs- tax Incentives and Concessions – Non-tax Concessions – Rehabilitation and Investment Allowances.

Reference Books:

1. Arya Kumar, Entrepreneurship, Pearson, Delhi, 2012.
2. Poornima M.CH., Entrepreneurship Development – Small Business Enterprises, Pearson, Delhi, 2009
3. Michael H. Morris, ET. al., Entrepreneurship and Innovation, Cengage Learning, New Delhi, 2011
4. Kanishka Bedi, Management and Entrepreneurship, Oxford University Press, Delhi, 2009
5. Anil Kumar, S., ET.al., Entrepreneurship Development, New Age International Publishers, New Delhi, 2011
6. Khanka, SS, Entrepreneurship Development, S. Chand, New Delhi.
7. Peter F. Drucker, Innovation and Entrepreneurship.
8. A.Sahay, M. S. Chhikara, New Vistas of Entrepreneurship: Challenges & Opportunities.

Instruction to Paper Setter :

TWO Questions must be given from each Unit.

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.
THREE YEAR (CBCS) DEGREE EXAMINATION
(FOUNDATION COURSE)
SECOND YEAR EXAMINATION
SEMESTER - IV
ENTREPRENEURSHIP
MODEL PAPER

Time: 2 Hours

Max. Marks : 50

I. Answer Any FIVE of the Following: -

5 X 10 = 50

1. Explain the characteristics of Entrepreneur?
ఎంట్రప్రెన్యూర్ యొక్క లక్షణాలను వివరించండి?
2. Explain forms of business organizations?
వ్యాపార సంస్థలలో రకాలను గురించి వ్రాయండి?
3. Explain Sources of new ideas?
క్రొత్త ఆలోచనలకు మూలాలను వివరించండి?
4. Selecting the techniques for generating Ideas?
క్రొత్త ఆలోచనలను ఎంచుకొనే పద్ధతులను గురించి వ్రాయండి?
5. Explain Elements of Project Report?
ప్రాజెక్టు నివేదిక అంశాలను వ్రాయండి?
6. Write about Project appraisal Techniques?
ప్రాజెక్టు సమీక్ష విధానాలను వివరించండి?
7. Write about NABARD?
నాబార్డ్‌ను వివరించండి?
8. Explain SFC's?
రాష్ట్రస్థాయి విత్తసంస్థలు గురించి వ్రాయండి?
9. Explain Role of SSIs?
చిన్నతరహాపరిశ్రమలు ప్రాముఖ్యతను వ్రాయండి?
10. Explain Tax incentives and concessions?
చిన్నతరహాపరిశ్రమకు పన్నులపాలసీలు మరియు ప్రయోజనాలు గురించి వివరించండి?

Instruction to Paper Setter :

TWO Questions must be given from each Unit.

VIKRAMA SIMHAPURI UNIVERSITY::NELLORE

Foundation Course - 10

SECOND YEAR – SEMESTER - IV

LEADERSHIP EDUCATION

(Common for BA/BCOM/BSC/BBA)

SYLLABUS

(Total 30 Hrs)

1. Organisation – Management – Leadership – Meaning and Significance – Different theories – Trait Theory, Blake & Mountan Theory – Other functions of Management.
2. Behavioral Concepts – Individual Behaviour – Perception – Learning – Attitude Formation and Change – Motivation – Theories of Motivation – Personality Development.
3. Interpersonal Behaviour – Communication – Leadership – Influencing Relations – Transactional Analysis.
4. Team Building and Management – Developing team resources – Designing team – Participation and Repercussion – Team building activities.

Reference Books :

1. Fred Luthans, “Organizational Behaviour”, Tata McGraw Hill Publishing Co., New Delhi.
2. Robins, Stephen P, “Organisational Behaviour”, 9th Edition, Prentice Hall of India, New Delhi.
3. Koontz and O “Donnell”, Essentials of Management, Tata McGraw Hill Publishing Co., New Delhi, 2000.
4. Keith Davis, “Human Behaviour at Work”, Tata McGraw Hill Publishing Co., New Delhi.
5. Aswathappa, ”Orgnizational Behaviour”, Himalaya Publishing House, Mumbai
6. Stoner Freeman, “Management”, Prentice Hall of India, New Delhi.

Instruction to Paper Setter :

TWO Questions must be given from each concepts.

3

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.
THREE YEAR (CBCS) DEGREE EXAMINATION
(FOUNDATION COURSE)
SECOND YEAR EXAMINATION
SEMESTER - IV
LEADERSHIP EDUCATION
MODEL PAPER

Time: 2 Hours

Max. Marks : 50

I. Answer Any FIVE of the Following: -

5 X 10 = 50

1. Explain the functions of Management.
నిర్వహణ విధులను వివరింపుము?
2. Explain the theory's of Leadership.
నాయకత్వ సిద్ధాంతాలు గూర్చి వివరింపుము?
3. Write the process of Perception.
గ్రహణశక్తి ప్రక్రియను వివరింపుము?
4. Explain the concept of Attitude.
విలువలు మరియు వైఖరులను వివరించండి?
5. Explain the theories of Motivation.
ప్రేరణసిద్ధాంతాలు గూర్చి వివరింపుము?
6. Explain the process of communication.
కమ్యూనికేషన్ విధానమును వివరింపుము?
7. Explain Transactional Analysis.
సమర్థవంతమైన నాయకత్వాన్ని వివరించండి?
8. Explain the Team Building Activities.
వివిధ రకాల జట్టు నిర్మాణ కార్యకలాపాలను వివరించండి?
9. Explain the Concept of team Building.
జట్టు నిర్మాణం గూర్చి వివరింపుము?
10. Explain the importance of leadership.
నాయకత్వము యొక్క ప్రాముఖ్యతను వివరింపుము?

Instruction to Paper Setter :

Minimum TWO Questions must be given from each concepts.

VIKRAMA SIMHAPURI UNIVERSITY::NELLORE
B. Sc. (CBCS) SECOND YEAR - SEMESTER IV
BIO-TECHNOLOGY

BTT-401: IMMUNOLOGY

UNIT I

Immune system: Organs and cells of immune system Immunity, innate immune mechanism, Acquired immune mechanism, Antigen, Humoral immunity.

UNIT II

Antibody and Antigen: Antibody structure and classes, Antibody diversity, Types of Antigens Antigenicity (factors affecting antigenicity). Complement system .

UNIT III

Immunity: Cell mediated immunity: TC mediated immunity, NK cell mediated immunity, ADCC, brief description of cytokines and MHC (MHC types and diversity) Autoimmunity.

UNIT IV

Hypersensitivity and vaccination : General features of hypersensitivity, various types of hypersensitivity, Vaccination: Discovery, principles, significance, Types of Vaccines

UNIT V

Immunological Techniques:Antigen-antibody reactions: Precipitation, agglutination, complement fixation, immunodiffusion, ELISA. Hybridoma technology: Monoclonal antibodies and their applications in immunodiagnosis.

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.
THREE YEAR B.SC.(CBCS) DEGREE EXAMINATION
SECOND YEAR - SEMESTER - IV
SUB : BIO-TECHNOLOGY
BTT-401: IMMUNOLOGY

MODEL PAPER

Time : 3hours

Max marks : 75

PART - A

*Answer any **FIVE** questions. Each question carries 5 Marks.*

5 X 5 = 25M

1. Thymus
2. Cytokines
3. Factors affecting antigenicity.
4. Significance of Vaccination
5. Compliment Fixation
6. Elisa
7. Adcc
8. B-cells

PART-B

*Answer **ONE** question from each unit. Each question carries 10 Marks. 5 X 10=50 M*

UNIT-I

9. Describe about innate immunity.

(OR)

10. Explain acquired immunity.

UNIT-II

11. Describe the structure of Antibody.

(OR)

12. Explain about classical path way of Complement.

UNIT-III

13. Write a note on cell mediate immunity.

(OR)

14. Define autoimmunity. Explain about autoimmune disorders.

UNIT-IV

15. Describe the types of vaccines.

(OR)

16. Describe the general features of Hypersensitivity.

UNIT-V

17. Write a note a production of monoclonal antibodies.

(OR)

18. Explain about any two types of antigen antibody reactions.

SEMESTER IV
Paper IV (SPECTROSCOPY & PHYSICAL CHEMISTRY)
60 hrs (4 h / w)

SPECTROSCOPY

30 hrs (2h / w)

UNIT-I

6h

General features of absorption - Beer-Lambert's law and its limitations, transmittance, Absorbance, and molar absorptivity. Single and double beam spectrophotometers. Application of Beer-Lambert law for quantitative analysis of 1. Chromium in $K_2Cr_2O_7$
2. Manganese in Manganous sulphate

Electronic spectroscopy:

8h

Interaction of electromagnetic radiation with molecules and types of molecular spectra. Energy levels of molecular orbitals (σ , π , n). Selection rules for electronic spectra. Types of electronic transitions in molecules effect of conjugation. Concept of chromophore and auxochrome.

UNIT-II

Infra red spectroscopy

8h

Different Regions in Infrared radiations. Modes of vibrations in diatomic and polyatomic molecules. Characteristic absorption bands of various functional groups. Interpretation of spectra-Alkanes, Aromatic, Alcohols carbonyls, and amines with one example to each.

Proton magnetic resonance spectroscopy (1H -NMR)

8h

Principles of nuclear magnetic resonance, equivalent and non-equivalent protons, position of signals. Chemical shift, NMR splitting of signals - spin-spin coupling, coupling constants. Applications of NMR with suitable examples - ethyl bromide, ethanol, acetaldehyde, 1,1,2-tribromo ethane, ethyl acetate, toluene and acetophenone.

PHYSICAL CHEMISTRY

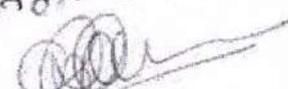
30 hrs (2h / w)

UNIT-III

Dilute solutions

10h

Colligative properties. Raoult's law, relative lowering of vapour pressure, its relation to molecular weight of non-volatile solute. Elevation of boiling point and depression of freezing point. Derivation of relation between molecular weight and elevation in boiling point and depression in freezing point. Experimental methods of determination. Osmosis, osmotic pressure, experimental determination. Theory of dilute solutions. Determination of molecular weight of non-volatile solute from osmotic pressure. Abnormal Colligative properties- Van't Hoff factor.

N. H. ... 10/2014


UNIT-IV

Electrochemistry-I 10h Specific conductance, equivalent conductance. Variation of equivalent conductance with dilution. Migration of ions, Kohlrausch's law. Arrhenius theory of electrolyte dissociation and its limitations. Ostwald's dilution law. Debye-Huckel-Onsager's equation for strong electrolytes (elementary treatment only). Definition of transport number, determination by Hittorff's method. Application of conductivity measurements- conductometric titrations.

UNIT-V

1. Electrochemistry-II 4h Single electrode potential, sign convention, Reversible and irreversible cells Nernst Equation- Reference electrode, Standard Hydrogen electrode, calomel electrode, Indicator electrode, metal - metal ion electrode, Inert electrode, Determination of EMF of cell, Applications of EMF measurements - Potentiometric titrations.

2. Phase rule

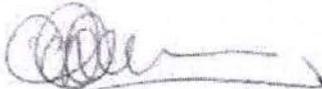
6h

Concept of phase, components, degrees of freedom. Thermodynamic Derivation of Gibbs phase rule. Phase equilibrium of one component system - water system. Phase equilibrium of two- component system, solid-liquid equilibrium. Simple eutectic diagram of Pb-Ag system, simple eutectic diagram, desilverisation of lead., NaCl-Water system, Freezing mixtures.

List of Reference Books

1. Spectroscopy by William Kemp
2. Spectroscopy by Pavia
3. Organic Spectroscopy by J. R. Dyer
4. Modern Electrochemistry by J.O. M. Bockris and A.K.N.Reddy
5. Advanced Physical Chemistry by Atkins
6. Introduction to Electrochemistry by S. Glasstone
7. Elementary organic spectroscopy by Y.R. Sharma
8. Spectroscopy by P.S.Kalsi

N Hemanta Dasg



LABORATORY COURSE – IV
Practical Paper - IV Physical Chemistry and IR Spectral Analysis
(at the end of semester IV)

30 hrs (2 h / W)

Physical Chemistry

25M

1. Critical Solution Temperature- Phenol-Water system
2. Effect of NaCl on critical solution temperature (Phenol-Water system)
3. Determination of concentration of HCl conductometrically using standard NaOH solution.
4. Determination of concentration of acetic acid conductometrically using standard NaOH Solution.

IR Spectral Analysis

25 M

5. IR Spectral Analysis of the following functional groups with examples
 - a) Hydroxyl groups
 - b) Carbonyl groups
 - c) Amino groups
 - d) Aromatic groups

N Hanumanth - 16/09



VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.
THREE YEAR (CBCS) DEGREE EXAMINATION
FOURTH SEMESTER
PART-IV : CHEMISTRY
INORGANIC AND ORGANIC CHEMISTRY
MODEL PAPER

Time : 3 hours

Max marks : 75

PART - A

Answer any FIVE questions. Each question carries 5 Marks.

5 X 5 = 25M

1. Write Beer's Lambert's law and its limitations.
2. Explain selection rules for electronic spectra with examples.
3. Explain types of molecular vibrations on IR spectroscopy
4. Write the principle involved in the nuclear magnetic Resonance spectroscopy
5. Define osmotic pressure explain the method of determination of osmotic pressure.
6. Derive the Raoult's law
7. Explain Ostwald's dilution law. What are its limitations?
8. Explain specific conductance
9. Explain the various types of reversible electrodes with examples.
10. Explain the terms phase, component and number of degree of Freedom

PART-B

Answer any FIVE questions. Each question carries 10 Marks.

5 X 10 = 50 M

11. Write the determination of Manganese in Manganese sulphate quantitatively by Beer's-Lamber's law
12. Write notes on: a) chromophore b) Auxochrome
13. What is Finger print region in IR spectroscopy? Write its importance
14. Explain the following terms: (a) Spin-spin coupling (b) Principle of Nuclear Magnetic resonance.
15. What is Lowering of vapour pressure explain the method of determination of relative lowering of vapour pressure
16. What is van't Hoff factor? Explain why the molecular weight of acetic acid determined by Freezing point method in Benzene is found to be about double its normal value.
17. Define Transport number. How do you determine the transport number of ions by Hittorf's method.
18. What are conductometric titrations? Explain various types of conductometric titrations.
19. Write notes on : a) Nernst Equation b) Potentiometric titrations
20. Explain the phase diagram of water system in detail.

N Hemavathi Ram

Vikrama Simhapuri University::Nellore
B.Sc.(Computer Applications) Syllabus Under CBCS
(with effect from 2016-'17)

II YEAR – SEMESTER-IV
PAPER-IV: OBJECT ORIENTED PROGRAMMING WITH C++

UNIT-1

Introduction:- Programming Language generations, Object Oriented Paradigm, Basics of OOPs, Benefits, Applications of OOPs, Object Oriented Languages, Difference between OOPs and Procedure Oriented Programming

UNIT - 2

Introduction to C++, General Structure of a C++ program, cin and cout objects, Keywords, identifiers, Constants, variables, Data types in C++, Operators-scope resolution operator, Control structures: Conditional statements and Looping statements

UNIT-3

Functions –function with default arguments, inline functions, function overloading, reference variables Arrays - Single and multidimensional arrays.

UNIT-4

Object and Classes-Structure and Class, Defining a class, defining member functions, member function with object as arguments and argument as return type, array of objects, static member data and member function, friend function and friend class.

Constructor and destructors-characteristics of constructor, constructor types-default, parameterized, copy and dynamic, constructor overloading.

UNIT- 5

Operator overloading, defining operator function, overloading unary, binary and relational operators Inheritance-benefits of inheritance, types of inheritance, methods overriding, virtual functions.

Reference Books

1. Object Oriented Programming with C++ - M.T. Somashekara, D.S.Guru, H.S. Nagendraswamy, K.S. Manjunatha, PHI 2nd Edition
 2. Object Oriented Programming with C++ - E. Balagurusamy, 4th Edition, Tata Mc Graw Hill Publication
 3. Object Oriented Programming in C++ - Robert Lafore, 4th Edition, Pearson Education
- Object-Oriented Programming with ANSI and Turbo C++.

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

Vikrama Simhapuri University::Nellore
B.Sc.(Computer Applications) Syllabus Under CBCS
(with effect from 2016-'17)

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE
COMPUTER APPLICATIONS
BA(CA)/BCom(CA)/BSc(CA) - II YEAR - SEMESTER-IV (w.e.f. 2016-'17)
OBJECT ORIENTED PROGRAMMING WITH C++
MODEL QUESTION PAPER

Time: 3 Hours

Max. Marks : 75

Section-A

Answer any FIVE of the following Questions:

(5 x 5= 25 Marks)

1. Explain the applications of oops.
2. Write programming language generations.
3. Write about cin and cout objects.
4. Explain scope resolution operator in c++.
5. Write about inline functions.
6. Define array. Write about single dimensional array
7. Define a structure and class
8. Explain member function with an example
9. What is inheritance? Explain the benefits of inheritance
10. Write about virtual functions.

Section - B

Answer any FIVE of the following Questions

(5 × 10 =50 Marks)

11. Describe the basic concepts of OOPs
12. Write the difference between OOP and POP
13. Describe the general structure of C++
14. Explain looping statements with syntax and example
15. Write about functions in c++.
16. Write a program to find out matrix addition
17. Explain about friend function and friend class with suitable example
18. Explain constructors and destructors
19. Explain in detail various types of inheritance
20. Describe operator overloading with an example

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

B. Sc. III –Semester - V
BTT- 501: MOLECULAR BIOLOGY

Unit I:

Genome Structure: Watson and Crick model of DNA; Genome organization with specific reference to prokaryotic and eukaryotic genomes; Genome size. Concepts of Genetic Material, Gene, Chromosome and Genome. Experiments to prove DNA as genetic material (Griffith experiment, Hershey- Chase experiment)

Unit II

DNA Replication: Enzymology of replication (DNA polymerase I, pol II and III, helicases, topoisomerases, single strand binding proteins, DNA melting proteins, primase. Proof of semiconservative replication, Replication origins, initiation, elongation, and termination. Rolling circle replication of DNA

Unit III

Transcription : Enzymatic synthesis of RNA: Basic features of transcription, structure of prokaryotic RNA polymerase (core enzyme and holo enzyme, sigma factor), concept of promoter (Pribnow box, -10 and -35 sequences), Four steps of transcription (promoter binding and activation, RNA chain initiation, chain elongation, termination and release). Reverse transcription.

Unit IV

Gene Expression and regulation

Regulation of gene expression; Clustered genes and the operon concepts - Negative and positive control of the Lac Operon, trp operon, Control of gene expression. Poly and Monocistronic m-RNA,

Unit V:

Genetic Code and Protein Synthesis

Genetic code: Features of genetic code, Structure of m RNA, brief structure of tRNA, the adaptor hypothesis, attachment of amino acids to tRNA. Codon-anticodon interaction - the wobble hypothesis. Initiation, elongation, termination of protein.

PRACTICALS BTP: 502-MOLECULAR BIOLOGY

1. Effect of UV radiations on the growth of microorganisms.
2. Determination of absorption maxima of DNA and RNA and their quantification
3. Quantitative estimation of RNA
4. Quantitative estimation of DNA
5. Isolation of plasmid DNA from bacteria
6. Isolation of genomic DNA from *E.coli*
7. Isolation of DNA from sheep liver
8. Isolation of DNA from plant leaves (Rice or Tobacco or any other plant)
9. Separation of DNA by Agarose gel Electrophoresis
10. Purity analysis of the Nucleic acids

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.

**III-YEAR : SEMESTER-V
SUBJECT : BIO-TECHNOLOGY
MODEL QUESTION PAPER**

Time : 3hours

Max marks : 75

PART - A

Answer any FIVE questions. Each question carries 5 Marks.

5 X 5 = 25M

1. Hershey-chase Experiment
2. Rolling circular replication of DNA
3. Promoter
4. m-RNA
5. Wobble hypothesis
6. DNA polymerases
7. TrP operon
8. Amino acylation

PART-B

Answer ONE question from each unit. Each question carries 10 Marks. 5 X 10=50 M

9. (a) Explain Watson crick model of DNA?
(OR)
(b) Prove DNA act as the genetic material?
10. (a) Describe the enzymes involved in DNA Replication?
(OR)
(b) Write about DNA replication mechanism in Eukaryotes?
11. (a) Define transcription and explain the prokaryotic transcription mechanism?
(OR)
(b) Give an account an Reverse transcription?
12. (a) Define lac operon and Explain the mechanism?
(OR)
(b) Give an account an repressor and Operator sequences?
13. (a) Define genetic code and write properties of Genetic Code?
(OR)
(b) Explain the mechanism of Translation?

B. Sc. III – Semester V
BTT- 503: rDNA TECHNOLOGY (Elective Theory)

Unit I:

Restriction and Modification. Classification of restriction endonucleases. Enzymes used in molecular cloning; Polymerases, ligases, phosphatases, kinases and nucleases; Advanced Molecular biology techniques, Electrophoresis and Blotting techniques. Meta Genomics, DNA finger printing.

Unit II

Cutting and joining DNA (cohesive end ligation, methods of blunt end ligation). Transfection and transformation. Selection of transformed cells. Screening methods (Genetic marker and blue white screening)

Unit III:

Cloning vehicles - Plasmid, Bacteriophage, Construction of genomic and cDNA libraries. Advantages of cDNA libraries. Cosmids, Phagemids, Shuttle Vector, Expression Vector, Ti-Derived Vectors.

Unit IV.

Methods of gene sequencing – Maxam - Gilberts and Sanger's dideoxy chain termination methods; Polymerase chain reaction technique (Components in PCR and PCR conditions). Blotting Techniques, DNA probes.

Unit IV:

Methods of gene transfer in fungi, yeast and higher plants using microinjection, microprojectile bombardment (gene gun method, Electroporation and Agrobacterium mediated transformation

Unit V:

Applications of recombinant DNA technology in Agriculture (Transgenic Plants) Medicine (production of Insulin, Growth hormone, Tissue plasminogen activator and HBsAg vaccine)

PRACTICALS BTP 504: rDNA TECHNOLOGY (Elective Lab)

1. Problem in Genetic engineering.
2. Transformation in Bacteria using plasmid.
3. Restriction digestion of DNA and its electrophoretic separation.
4. Ligation of DNA molecules and their testing using electrophoresis.
5. Activity of DNAase and RNase on DNA and RNA.
6. Isolation of Plasmid DNA.
7. Demonstration of PCR.
8. Demo of Blotting Techniques.

BTT- 505: GENETICS (Elective Theory)

UNIT I

Mendels Laws and Inheritance: Mendel experiments, Mendel Laws and deviations: incomplete dominance and Co dominance Penetration and pleiotropism, Recessive and Dominant epistatic gene interactions. Concept of multiple alleles

UNIT II

Genes and their variations: Structure of gene, gene and environment, gene copies of prokaryotic and Eukaryotic chromosomes. Eukaryotic chromosome organization, histone proteins.

Unit III:

Gene mutations: Mutagenesis - Spontaneous and induced (Chemical and physical) mutations; Natural and induction of mutations, point mutations, frameshift mutations, auxotrophic conditional and suppressor mutations.

UNIT IV:

DNA Damage and DNA Repair: Light induced repair, Excision repair and mismatch repair, Post replication repair, Rec gene and its role in DNA repair, SOS repair and SOS response

Unit V:

Transposable elements: Structure and Molecular basis of AC-DS transposition in maize, "P" element of *Drosophila* and hybrid dysgenesis, Yeast "T₇" elements, Retroposans

PRACTICALS BTP 506: GENETICS (Elective Lab)

1. Study of different phases of mitosis in onion root tips and meiosis in *Allium cepa* flower buds.
2. Karyotyping in *Allium* or *Drosophila*.
3. Determination of multiple allele frequencies of leaf scars in *Trifolium*.
4. Problems and assignments in Mendilian genetics.
5. Determination of linkage and calculation of recombination frequencies (maize/ *Drosophila*).
6. Induction of chromosomal aberrations by chemical mutagenesis in *Allium* (or any plant).
7. Isolation of auxotrophic mutants (plants or insects).
8. Repair of DNA by Photo activation of Photolyase in bacteria.
9. Mutation of bacteria by UV.
10. Chemical induced mutation in bacteria

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE.
III-YEAR : SEMESTER-V (PAPER-II)
SUBJECT : BIO-TECHNOLOGY
MODEL QUESTION PAPER

Time : 3 hours

Max marks : 75

PART - A

*Answer any **FIVE** questions. Each question carries 5 Marks.*

5 X 5 = 25M

1. Multiple alleles
2. Histone Proteins
3. Auxotrophic condition
4. SOS response
5. Retroposons
6. Law of segregation
7. Suppressor mutations
8. Overlapping genes

PART-B

*Answer **ONE** question from each unit. Each question carries 10 Marks. 5 X 10=50 M*

9. (a) Explain the Law of Independent Assortment?
(OR)
(b) Describe the Recessive and Dominant Epistatic Gene Interactions?
10. (a) Give an account on gene structure?
(OR)
(b) Explain the chromosome organization in eukaryotes?
11. (a) Define Mutation? And explain induced mutations?
(OR)
(b) Explain followings (a) Point mutations (b) Frame shift mutations?
12. (a) Write about post replication repair mechanism?
(OR)
(b) Explain different DNA repair mechanisms?
13. (a) Give an account on P-elements of drosophila and dihybrid dysgenesis?
(OR)
(b) Structure and molecular basis of AC-DS transposition in maize?

SEMESTER-V

Paper - V (INORGANIC, PHYSICAL & ORGANIC CHEMISTRY)
45 hrs (3 h / w)

INORGANIC CHEMISTRY UNIT - I

Coordination Chemistry:

8h

IUPAC nomenclature - bonding theories - Review of Werner's theory and Sidgwick's concept of coordination - Valence bond theory - geometries of coordination numbers 4-tetrahedral and square planar and 6-octahedral and its limitations, crystal field theory - splitting of d-orbitals in octahedral, tetrahedral and square-planar complexes - merits and demerits of crystal-field theory. Isomerism in coordination compounds - structural isomerism and stereo isomerism, stereochemistry of complexes with 4 and 6 coordination numbers.

UNIT-II

1. Spectral and magnetic properties of metal complexes:

4h

Types of magnetic behavior, spin-only formula, calculation of magnetic moments, experimental determination of magnetic susceptibility-Gouy method.

2. Stability of metal complexes:

3h

Factors affecting the stability of metal complexes, chelate effect, determination of composition of complex by Job's method and mole ratio method.

ORGANIC CHEMISTRY

UNIT- III

Nitro hydrocarbons:

3h

Nomenclature and classification-nitro hydrocarbons, structure -Tautomerism of nitroalkanes leading to aci and keto form, Preparation of Nitroalkanes, reactivity - halogenation, reaction with HONO (Nitrous acid), Nef reaction and Mannich reaction leading to Micheal addition and reduction.

UNIT - IV

Nitrogen compounds :

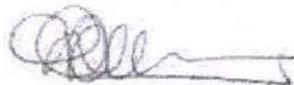
12h

Amines (Aliphatic and Aromatic): Nomenclature, Classification into 1°, 2°, 3° Amines and Quarternary ammonium compounds. Preparative methods -

1. Ammonolysis of alkyl halides 2. Gabriel synthesis 3. Hoffman's bromamide reaction (mechanism).

Reduction of Amides and Schmidt reaction. Physical properties and basic character - Comparative basic strength of Ammonia, methyl amine, dimethyl amine, trimethyl amine and aniline.

N. Hanumantho Kumar



Chemical properties: a) Alkylation b) Acylation c) Carbylamine reaction d) Hinsberg separation e) Reaction with Nitrous acid of 1°, 2°, 3° (Aliphatic and aromatic amines). Electrophilic substitution of Aromatic amines – Bromination and Nitration. Oxidation of aryl and Tertiary amines, Diazotization.

PHYSICAL CHEMISTRY

UNIT- V

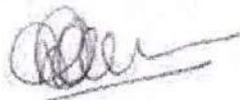
Thermodynamics

15h

The first law of thermodynamics-statement, definition of internal energy and enthalpy. Heat capacities and their relationship. Joule-Thomson effect- coefficient. Kirchoff's equation. Second law of thermodynamics. Different Statements of the law. Carnot cycle and its efficiency. Carnot theorem. Concept of entropy, entropy as a state function, entropy changes in reversible and irreversible processes.

List of Reference Books

1. Concise coordination chemistry by Gopalan and Ramalingam
2. Coordination Chemistry by Basalo and Johnson
3. Organic Chemistry by G. Mare loudan, Purdue Univ
4. Advanced Physical Chemistry by
5. Text book of physical chemistry by S Glasstone
6. Concise Inorganic Chemistry by J.D. Lee
7. Advanced Inorganic Chemistry Vol-I by Satyaprakash, Tuli, Basu and Madan
8. A Text Book of Organic Chemistry by Bahl and Arun bahl
9. A Text Book of Organic chemistry by I L Finar Vol I
10. Advanced physical chemistry by Gurudeep Raj

N Hemantha Kumar


SEMESTER-V

Paper - VI (INORGANIC, ORGANIC & PHYSICAL CHEMISTRY)

45 hrs (3 h / w)

INORGANIC CHEMISTRY

UNIT-I

1. Reactivity of metal complexes: 4h

Labile and inert complexes, ligand substitution reactions - SN^1 and SN^2 , substitution reactions of square planar complexes - Trans effect and applications of trans effect.

2. Bioinorganic chemistry: 4h

Essential elements, biological significance of Na, K, Mg, Ca, Fe, Co, Ni, Cu, Zn and Cl^- . Metalloporphyrins - Structure and functions of hemoglobin and Chlorophyll.

PHYSICAL CHEMISTRY

UNIT-II

1. Chemical kinetics 8h Rate of reaction - Definition of order and molecularity. Derivation of rate constants for first, second, third and zero order reactions and examples. Derivation for time half change. Methods to determine the order of reactions. Effect of temperature on rate of reaction, Arrhenius equation.

2. Photochemistry 5h

Difference between thermal and photochemical processes. Laws of photochemistry- Grothus-Draper's law and Stark-Einstein's law of photochemical equivalence. Quantum yield-Photochemical reaction mechanism- hydrogen- chlorine, hydrogen- bromine reaction. Qualitative description of fluorescence, phosphorescence.

ORGANIC CHEMISTRY

UNIT- III

Heterocyclic Compounds 7h Introduction and definition: Simple five membered ring compounds with one hetero atom Ex. Furan. Thiophene and pyrrole - Aromatic character - Preparation from 1,4,-dicarbonyl compounds, Paul-Knorr synthesis.

Properties : Acidic character of pyrrole - electrophilic substitution at 2 or 5 position, Halogenation, Nitration and Sulphonation under mild conditions - Diels Alder reaction in furan.

N Hanumantha Kumar



UNIT-IV

Carbohydrates

8h

Monosaccharides: (+) Glucose (aldo hexose) - Evidence for cyclic structure of glucose (some negative aldehydes tests and mutarotation) - Proof for the ring size (methylation, hydrolysis and oxidation reactions) - Pyranose structure (Haworth formula and chair conformational formula).

(-) Fructose (ketohexose) - Evidence of 2 - ketohexose structure (formation of pentaacetate, formation of cyanohydrin its hydrolysis and reduction by HI). Cyclic structure for fructose (Furanose structure and Haworth formula) - osazone formation from glucose and fructose - Definition of anomers with examples. Interconversion of Monosaccharides: Aldopentose to Aldohexose (Arabinose to D- Glucose, D-Mannose) (Kiliani - Fischer method). Epimers, Epimerisation . Aldohexose to Aldopentose (D-Glucose to D- Arabinose) by Ruff degradation. Aldohexose to Ketohexose

[(+) Glucose to (-) Fructose] and Ketohexose to Aldohexose (Fructose to Glucose)

UNIT- V

Amino acids and proteins 7h Introduction: Definition of Amino acids, classification of Amino acids into alpha, beta, and gamma amino acids. Natural and essential amino acids - definition and examples, classification of alpha amino acids into acidic, basic and neutral amino acids with examples. Methods of synthesis: General methods of synthesis of alpha amino acids (specific examples - Glycine, Alanine, valine and leucine) by following methods: a) from halogenated carboxylic acid b) Malonic ester synthesis c) strecker's synthesis.

Physical properties: Zwitter ion structure - salt like character - solubility, melting points, amphoteric character, definition of isoelectric point.

Chemical properties: General reactions due to amino and carboxyl groups - lactams from gamma and delta amino acids by heating peptide bond (amide linkage).

List of Reference Books

1. Concise coordination chemistry by Gopalan and Ramalingam
2. Coordination Chemistry by Basalo and Johnson
3. Organic Chemistry by G.Mare loudan, Purdue Univ
4. Advanced Physical Chemistry by Atkins
5. Text book of physical chemistry by S Glasstone
7. Instrumentation and Techniques by Charwal and Anand
8. Essentials of nano chemistry by pradeep
9. A Textbook of Physical Chemistry by Puri and Sharma
10. Advanced physical chemistry by Gurudeep Raj

N. N. ...


LABORATORY COURSE – V
Practical Paper – V Organic
Chemistry (at the end of semester V) 30 hrs (2 h / W)

Organic Qualitative Analysis:

50M

Analysis of an organic compound through systematic qualitative procedure for functional group identification including the determination of melting point and boiling point with suitable derivatives.

Alcohols, Phenols, Aldehydes, Ketones, Carboxylic acids, Aromatic Primary Amines, Amides and Simple sugars.

LABORATORY COURSE – VI
Practical Paper – VI Physical Chemistry
(at the end of semester V) 30 hrs (2 h/W)

1. Determination of rate constant for acid catalyzed ester hydrolysis.
2. Determination of molecular status and partition coefficient of benzoic acid in Benzene and water.
3. Determination of Surface tension of liquid
4. Determination of Viscosity of liquid.
5. Adsorption of acetic acid on animal charcoal, verification of Freundlich isotherm.

N. H.



III YEAR – SEMESTER-V
Paper-V: PROGRAMMING IN JAVA

UNIT-1

Fundamentals Of Object – Oriented Programming: Introduction, Object Oriented paradigm, Basic Concepts of OOP

Overview of Java Language: Introduction, Java features, Java program structure, Java Virtual Machine – Java versus C++

UNIT-2

Identifiers – literals: integer literals - character literals – Floating point literals – string literals. Operators:- Arithmetic operators, relational operators, assignment operators, conditional operator. – Variables, Keywords, Data types

UNIT-3

Java statements: input and output statements, Control structures: if..else statement – switch statement — while statement – do..while statement – for loop – continue statement - break statement

UNIT-4

Classes, Objects & Methods: Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods

UNIT-5

Arrays: Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, creating a two-dimensional array

Threads: Introduction, Creating Threads, Extending the Threads, Stopping and Blocking a Thread, Lifecycle of a Thread

Prescribed Text book: Programming with Java by E.Balagurusamy

Reference books:

1. Programming in Java by Sachin Malhotra, OXFORD University Press
2. Java complete Reference by Herbert Schildt
3. John R. Hubbard, Programming with Java, Second Edition, Schaum"s outline Series, TATA McGraw-Hill Company.

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

Vikrama Simhapuri University::Nellore
B.Sc.(Computer Applications) Syllabus Under CBCS
(with effect from 2016-'17)

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE
CBCS – BA(CA)/BCom(CA)/BSc(CA) - III YEAR - SEMESTER-V
PROGRAMMING IN JAVA
MODEL QUESTION PAPER

Time: 3 Hours

Max. Marks : 75

Section-A

Answer any FIVE of the following Questions:

(5 x 5= 25 Marks)

1. Write about benefits of OOP
2. Write differences between Java and C++
3. Explain about identifiers with example
4. Explain about conditional operator
5. What is input statement? Explain with an example
6. Write about while statement.
7. Briefly explain about constructors.
8. Explain about accessing class members in Java
9. What is an array? Explain how to create an array in Java
10. What is Thread in Java?

Section - B

Answer any FIVE of the following Questions

(5 × 10 =50 Marks)

11. Write about Java program structure
12. Explain various concepts of OOP
13. Write about data types used in Java
14. Explain bitwise operators in Java.
15. Write in detail about conditional control structures
16. Explain various output statements used in Java
17. Explain about static members with examples
18. Write about creating objects in Java
19. Explain one dimensional arrays with an example
20. Explain thread life cycle.

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

III YEAR – SEMESTER-V

PAPER-VI: WEB TECHNOLOGY

UNIT -1

Introduction to Internet : Definition of Internet – History of Internet – Advantages & disadvantages of Internet – Tools of internet - How internet works. Introduction to WWW: Definition of WWW –WWW tools - Web Terminology – web browser – web server

UNIT-2

E-Mail : Definition of e-mail – advantages & disadvantages of e-mail – how to work with e-mail accounts – e-mail inner working : Store and forward method – message components – message composition – features of e-mail. Protocols: TCP/IP - HTTP

UNIT -3

Introduction to HTML: Basic HTML – HTML document structure – HTML tags – Basefont tag – title tag – body tag – Text formatting tags – Character tags
HTML Lists : Ordered List , Unordered List & Definition List – Using colors – Using Images

UNIT – 4

Horizontal Rule Tag - HTML Tables – Nested Tables - Hyperlinks: Textual, Graphical Links to sections – Frames – Nested Frames – Forms – Form Controls: textbox, checkbox, radio button, select, text area - Processing of forms

UNIT – 5

Advanced HTML : Cascading Style Sheets: Introduction – Using Styles: As an attribute, tag & external file – Defining Your own styles – Properties and values : properties related to Fonts , Backgrounds & colors, text , boxes & borders

PRESCRIBED BOOKS:

1. Chris Bates, Web Programming Building Internet Applications, Second Edition, Wiley.
2. Deitel & Deitel , Goldberg “Internet and world wide web – How to program”, pearson educations Asia

Reference Books:

1. Paul S.Wang Sanda S. Katila, An Introduction to Web Design Plus Programming, Thomson.
2. Robert W.Sebesta, Programming the World Wide Web, Third Edition, Pearson Education.
3. Joel Sklar, Principles of Web Design, Thomson.
4. Raj Kamal, Internet and Web Technologies, Tata McGraw Hill.
5. Gopalan & Akilandeswari, Web Technology: A Developer’s Perspective, PHI.

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

Vikrama Simhapuri University::Nellore
B.Sc.(Computer Applications) Syllabus Under CBCS
(with effect from 2016-'17)

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE
CBCS – BA(CA)/BCom(CA)/BSc(CA) - III YEAR - SEMESTER-V
WEB TECHNOLOGY
MODEL QUESTION PAPER

Time: 3 Hours

Max. Marks : 75

Section-A

Answer any FIVE of the following Questions:

(5 x 5= 25 Marks)

1. What is Internet? Write about advantages of Internet
2. Explain briefly about web server
3. What is protocol? Explain TCP/IP
4. Explain about message composition in Internet
5. What is HTML? Explain HTML document structure
6. Write about Basefont tag
7. Briefly explain about hyperlinks
8. Explain about frames
9. What is a property? Explain various properties
10. Explain about attribute.

Section - B

Answer any FIVE of the following Questions

(5 × 10 =50 Marks)

11. Write about Tools of WWW
12. Explain about how Internet works
13. Write about e-mail advantages.
14. Explain various message components in creating an e-mail
15. Write in detail about HTML tags.
16. Explain about HTML lists.
17. Explain about tables in HTML
18. Write about form controls used in designing a web page.
19. Explain CSS with an example
20. Illustrate how to create a web page with your own styles.

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

VIKRAMA SIMHAPURI UNIVERSITY::NELLORE
B. Sc. (CBCS)
III - B.Sc. (SEMESTER - VI)
BTT- 601: PLANT AND ANIMAL BIOTECHNOLOGY

UNIT - I

Cell and tissue culture: Introduction to cell and Tissue culture Laboratory facilities Tissue culture media (composition and preparation) Callus and suspension cultures: initiation and maintenance of callus and suspension cultures.

UNIT - II

Tissue and micropropagation : production of haploids, protoplast culture and somatic hybridization. Cloning in plants - Ti plasmid organization. Concept of transgenic plants Bt cotton and other plant applications.

UNIT - III

Various techniques of animal cell and tissue culture : Culture media, growth factors, laboratory facilities.

Characteristics of cells in culture : Contact inhibition, anchorage dependence, Primary culture, immortal cells, cell lines. Maintenance of cell lines in the laboratory.

UNIT - IV

rDNA products : Brief idea about recombinant DNA products in medicine (insulin, somatostatin, vaccines), Concept of Gene therapy, Production of recombinant vaccines – hepatitis. Concept of transgenic animals. In vitro fertilization and embryo transfer in humans and farm animals.

UNIT - V

IPR : Intellectual property rights. Protection of Copy rights. Patents and their significance. Management studies: society and ethical aspects of Biotechnology. Good manufacturing practices. Bio safety issues and bioethics.

PRACTICALS: BTP- 602 PLANT AND ANIMAL BIOTECHNOLOGY

1. Establishing a plant cell culture (both in solid and liquid media) – seed germination, callus culture, suspension cell culture, regeneration from callus cells.
2. Suspension culture.
3. Cell count by hemocytometer.
4. Cytology of callus.
5. Establishing primary cell culture of chicken embryo fibroblasts.
6. Animal tissue culture – maintenance of established cell lines.
7. Animal tissue culture – virus cultivation.
8. Measurement of cell size.
9. Microphotography.
10. Determination of seed viability.

VIKRAMA SIMHAPURI UNIVERSITY::NELLORE
B. Sc. (CBCS)
THIRD YEAR - SEMESTER - VI
BTT- 601 : PLANT AND ANIMAL BIOTECHNOLOGY

MODEL PAPER

Time : 3hours

Max marks : 75

SECTION - A

Answer any FIVE of the followings

5x5=25m

1. MS-Medium
2. Bt-Cotton
3. Cell Lines
4. Transgenic animals
5. Copy Right
6. Callus culture
7. Ex-vivo gene therapy
8. Somatic Hybridization

SECTION - B

Answer the following questions. Each question carries equal marks.

5x10=50m

UNIT-I

9. Explain the basic facilities of tissue culture.
(Or)
10. Write about suspension culture.

UNIT-II

11. Describe the production of Haploids
(Or)
12. Explain the Ti Plasmid organization in cloning.

UNIT-III

13. Define medium and add a note on different types of medias used in animal tissue culture.
(Or)
14. Write about primary culture

UNIT-IV

15. Describe the production of rDNA Proteins.
(Or)
16. Define IVF and explain various steps involved in IVF in farm animals.

UNIT-V

17. Write about intellectual property rights.
(Or)
18. Explain good manufacturing practices.

III - B. Sc. (SEMESTER - VI)
BTT: 603 - ENVIRONMENTAL BIOTECHNOLOGY (ELECTIVE THEORY)

UNIT - I

Principles of Ecology, Water and terrestrial ecosystems, Bio-geo chemical cycles - Carbon, Nitrogen cycles. Role of microbes in bio-geochemical cycles.

UNIT - II

Inorganic and Organic pollutants of air, land and water; maintenance of standards, Environmental monitoring. Detection, treatment and prevention of pollution. Biological indicators

UNIT - III

Biocides, Four stage alternatives, Refuse disposal - Treatment methods, effluent from pharmaceuticals, fertilizers, pulp and paper industry. Biogas, bioethanol, microbial hydrogen production.

UNIT - IV

Waste water management - Aerobic and anaerobic treatment, primary, secondary and tertiary treatment of municipal wastes, Solid waste management. Microbiological analysis of milk and food.

Unit - V

Bioremediation, Biodegradation of recalcitrant compounds and the role of genetically engineered microbes and genetically modified organisms in the environmental management. Microbial degradation of pesticides and toxic chemicals.

PRACTICALS BTP : 604 - ENVIRONMENTAL BIOTECHNOLOGY (Elective Lab)

1. Detection of coliforms for determination of the purity of potable water.
2. Determination of total dissolved solids of water
3. Determination of Hardness and alkalinity of water sample.
4. Determination of dissolved oxygen concentration of water sample
5. Determination of biological oxygen demand of sewage sample
6. Determination of chemical oxygen demand (COD) of sewage sample.
7. Isolation of xenobiotic degrading bacteria by selective enrichment technique
8. Estimation of heavy metals in water/soil
9. Estimation of nitrate in drinking water.
10. Preparation and formulation of microbial biopesticide (bacteria, fungi and viruses)
11. In vitro evaluation of medicinal plants against pathogenic microbes.
12. Effect of mycorrhizal fungi on growth promotion of plants.
13. Production of microbial fertilizers (Rhizobium, Azotobacter and AMF).

III - B. Sc. (SEMESTER - VI)
BTT: 605 INDUSTRIAL BIOTECHNOLOGY (Elective theory)

UNIT - I

Isolation, Screening, Preservation and Improvement of Industrially Important Microorganisms. Synthetic and Natural Medium, Precursors, Antifoams, Sterilization Methods and Inoculum Preparation.

UNIT - II

Definition of bioreactor, basic principles of bioreactor. Classification of bioreactors. Analysis of batch, continuous, fed batch and semi-continuous bioreactors.

UNIT - III

Ethanol Production by Fermentation using Molasses, Starchy Substances. Production of Alcoholic Beverages like Beer and Wine. Production of Citric Acid by Submerged and Solid State Fermentations.

UNIT - IV

Sources of Industrial Enzymes, Production of Microbial Enzymes like Amylase and protease. Backer's Yeast and SCP Production. Production of Antibiotics : Penicillin .

UNIT - V

Biotechnology Products- Production of recombinant proteins having therapeutic and diagnostic applications(Insulin, Growth Hormone, Recombinant vaccines, Monoclonal Antibody).

PRACTICALS BTP : 606 INDUSTRIAL BIOTECHNOLOGY (Elective Lab)

1. Isolation of industrially important microorganisms from soil.
2. Isolation of amylase producing organisms from soil.
3. Production of α - amylase from *Bacillus Spp.* by shake flask culture.
4. Production of alcohol or wine using different substrates.
5. Estimation of alcohol by titrimetry.
6. Estimation of alcohol by calorimetric method .
7. Production of citric acid.
8. Citric acid production by submerged fermentation.
9. Estimation of citric acid by titrimetry.

III - B.Sc. (SEMESTER - VI)

BTT- 701(1) : NUTRITIONAL BIOTECHNOLOGY (ELECTIVE THEORY)

UNIT - I

Components of food: Carbohydrates, Fats, Proteins and their importance in daily diet. Deficiency disorders: Protein deficiency disorders, Calorie maintenance diet, Malnutrition, Kwashiorkar, Marasmus, Starvation.

UNIT - II

Vitamins: types of vitamins, sources of various vitamins. Essential vitamins A, D, E, K, B complex and C. biological role of A, D, E, K, B complex and C in metabolisms. Vitamin deficiency disorders.

UNIT - III

Basal Metabolic Rate (BMR) and its determination. Factors influencing BMR, Calorific values of foods, Atherosclerosis and obesity. Body Mass Index (BMI).

UNIT - IV

Recommended dietary allowances, Dietary fibers, Role of water, Food allergy and its importance in health, Controlling measures. Role of food allergy in diagnosis and management.

Unit - V

Essential minerals: Ca, Mg, Fe, I, Co, Mo, Zn, Se & F. Their role and deficiency disorders. Specific dynamic actions of foods. Nutrition for pregnant, lactating women and for infants.

Practical BTP : 701(1) - NUTRITIONAL BIOTECHNOLOGY

1. Quantitative analysis of food for a) Moisture b) ash c) Iron d) Calcium
2. Isolation of Glycogen from sheep liver
3. Preparation of chloroplast from green leaves.
4. Preparation of carotens from carrots.

III - B.Sc. (SEMESTER - VI)
BTT- 701(2) : FOOD BIOTECHNOLOGY (ELECTIVE THEORY)

UNIT - I

Principles of food preservation. Microorganisms associated with foods. Infection, food intoxication, definition of self life, perishable foods.

UNIT - II

Food preservation by freezing, refrigeration. Storage at high temperature: sterilization, pasteurization, blanching, drying, dehydration, evaporation and irradiation.

UNIT - III

Food packing, methods of cooking – dry, moist, frying and microwave cooking. Advantages, disadvantages and effects of various cooking methods of food.

UNIT - IV

Canning, fermentations, pasteurization and adulteration. Food additives. Animal and sea foods - their importance, nutritional values and preservation methods.

UNIT - V

Microbiology of milk, milk products – cheese, yoghurt, butter, ice – cream, milk powder and their preparation. Food preservation by salting, smoking, curing and crystallization.

Practical BTP : 701 (2) : FOOD BIOTECHNOLOGY

1. To study concept of asepsis and sterilization.
2. To perform pasteurization of fluids using different methods.
3. Determination of pH of different foods using pH meter.
4. Study of food preservation methods
5. Study of osmotic dehydration
6. Nutritional labeling of food
7. Preparation of yoghurt
8. Isolation and identification food spoiling microorganisms.

III - B.Sc. (SEMESTER - VI)
BTT- 701(3) : METABOLISMS (ELECTIVE THEORY)

UNIT - I

Carbohydrate metabolism – concept of metabolism (anabolism & catabolism). Glycolysis – formation of lactate and pyruvate, TCA cycle, glycogenolysis and glycogenesis, gluconeogenesis, HMP shunt pathway

UNIT - II

Photosynthesis – light and dark reactions. Calcium cycle, C4 pathway, Nitrogen cycle, Urea cycle.

UNIT - III

Degradation of fatty acids (β – oxidation), ketogenesis, Biosynthesis & degradation of TAG (Triacyl Glycerol), Cholesterol metabolism.

UNIT - IV

General reactions of amino acids, deamination, decarboxylation & transamination. Biosynthesis of creatinine. Inborn errors of aromatic and branched chain amino acid metabolism.

UNIT - V

Metabolism of nucleic acids: biosynthesis of purine and pyrimidine nucleotides. De novo and Salvage pathway. Catabolism, biosynthesis and degradation of heme.

Practical BTP : 701 (3) : METABOLISMS

1. Estimation of amino acids by ninhydrin method
2. Estimation of protein by Biuret method
3. Estimation of glucose by DNS method
4. Estimation of glucose by Benedict's titrimetric method
5. Estimation of total carbohydrates by anthrone method

III - B.Sc. (SEMESTER - VI)
BTT- 702(1) : TISSUE CULTURE (ELECTIVE THEORY)

UNIT - I

Animal tissue culture – Introduction to culture medium – natural and artificial medium preparation and sterilization of medium, Isolation of explants, Disaggregation of explants and subculturing.

UNIT - II

Cell cultures, suspension cultures, maintenance of cell lines, organ culture – techniques, advantages, applications, limitations of hybridoma technology.

UNIT - III

Plant tissue culture, Introduction to culture room, Culture vessels, their working. Sterilization of nutrient medium, callus cultures, subculture.

UNIT - IV

Somatic embryogenesis, meristem culture, somatic hybridization, micro propagation, somatic hybrids & cybrids.

UNIT - V

In vitro pollination, parthenogenesis, applications of tissue culture both in agriculture and animal husbandry. Embryo culture technique.

Practical BTP : 702(1) TISSUE CULTURE

1. Preparation of plant tissue culture medium
2. Initiation of callus from any one selected plant species
3. Micro propagation of plants
4. Cell disaggregation and cell counting
5. Study of gene transfer techniques (Transformation)
6. Preparation of animal tissue culture medium.

III B. Sc. (SEMESTER - VI)

BTT- 702(2) : INDUSTRIAL BIOTECHNOLOGY (ELECTIVE THEORY)

UNIT - I

Introduction to industrial biotechnology. Primary and secondary metabolic products of microorganisms. Screening, isolation and preservation of industrially important microorganisms.

UNIT - II

Fermentation technology: principles of fermentation, fermentation medium, types of fermenters, fermentation conditions and sterilization methods. Factors involved in fermenter design. Fermenter configurations. Principle operating characteristics of fermenters.

UNIT - III

Factors effecting fermentation. Fermented products like – fermentation of molasses, production of alcoholic beverages like beer, wine. Commercial production of fuels and chemicals by microbial fermentations.

Unit - IV

Production of antibiotics – penicillin and streptomycin. Downstream process techniques. Production and application of recombinant proteins – Insulin, Growth hormone, Recombinant vaccines, Monoclonal Antibodies and interferons.

UNIT - V

Fermentative production of foods and dairy products. Production of vitamins – B12, B2 & C. Good manufacturing practices. Bio safety issues. Intellectual property rights and patenting issues.

Practical BTP : 702(2) : INDUSTRIAL BIOTECHNOLOGY

1. Isolation of Amylase producing organisms from soil.
2. Production of Amylase from bacteria / fungi
3. Assay of Amylase activity.
4. Production of alcohol (or) wine from grapes
5. Estimation of alcohol by colorimetric method
6. Production of citric acid from bacteria / fungi
7. Estimation of citric acid by titrimetric method.

III - B.Sc. (SEMESTER - VI)
BTT- 702(3) : ENVIRONMENTAL BIOTECHNOLOGY (ELECTIVE THEORY)

Unit - I : Environmental Concepts

Introduction to environmental biotechnology and ecology. Environmental Concepts – Atmosphere, Ozone layer, Hydrosphere, Lithosphere and Biosphere.

Unit - II : Ecosystem and Ecology

Ecosystem and community. Factors effecting Ecosystem. Ecological pyramids. Endangered and Extinct species. Renewable and non renewable energy resources.

Unit - III : Pollution

Air, Water, Soil, types of pollutants i.e pesticides, insecticides, heavy metals, toxins, radiation, hazardous waste and biodegradation with microbes. Biopesticides and biofertilizers.

Unit – IV : Protection and Restoration of Ecosystem

Major protection acts in India (Forest conservation act 1980, wild life protection act 1972), Bioremediation, Phytoremediation, waste water treatment, solid waste management. Microbial ore leaching.

Unit - V : Environmental Protection

Biodegradation, Bioremediation, Phyto remediation of pollutants. Bio gas production, Global warming, Green house effect, Rain water harvesting, Energy conservation, acid rains, ozone depletion, deforestation and its effects, reforestation.

Practical BTP: 702(3) ENVIRONMENTAL BIOTECHNOLOGY

1. Estimation of BOD of water
2. Estimation of COD of polluted water
3. Collection of endangered and extinct species data
4. Study production of hydrogen (or) biogas using Cow / cattle dung
5. Most Probable Number for water

III - B.Sc. (SEMESTER - VI)
BTT- 703(1) : CELL BIOLOGY (ELECTIVE THEORY)

UNIT - I

Cell basic unit of life. Discovery of cell. Cell theory. Ultra structure of eukaryotic (plant & animal) cell and prokaryotic cell.

UNIT - II

Structural organization and functions of plasma membrane and cell wall of eukaryotes – plant, animal and fungi.

UNIT - III

Structure and functions of cell organelles – endoplasmic reticulum, golgi complex, mitochondria, chloroplast, ribosomes, lysosomes, peroxisomes and nucleus. Cytosol and cytoskeletal system – microtubules, microfilaments and intermediate filaments.

UNIT - IV

Chromosomes – discovery, morphology and structural organization of centromere, secondary constriction, telomeres, chromonema, euchromatin, heterochromatin, karyotype. Types of chromosomes – salivary gland and lamp brush chromosome.

UNIT - V

Cell division – mitosis, meiosis, cell cycle. Regulation of cell division. Programmed cell death (apoptosis). Cell signaling and functions. Introduction to cancer biology.

Practical BTP : 703(1) : CELL BIOLOGY

1. Observation of mitotic stages in onion root tips
2. Observation of meiosis stages in onion floral buds
3. Karyotyping
4. Observation of cell organelles under microscope
5. Preparation of protoplast
6. Isolation of chloroplast from leaves.
7. Isolation of genomic DNA from plant cell.

III B. Sc. (SEMESTER - VI)
BTT- 703(2) : GENE BIOTECHNOLOGY(ELECTIVE THEORY)

UNIT - I

Mendel's laws of inheritance:-Mendel's experiments, laws of heredity, deviations- incomplete dominance & co-dominance, penetration & pleiotropism. Linkage and Crossing over. Epistasis. Concept of multiple alleles.

UNIT - II

Structure of gene, gene & environments, gene copies of prokaryotic & eukaryotic chromosome organization, histone proteins.

UNIT - III

Human genetics : Karyotype in man, inherited disorders: Autosomal & autosomal. Banding techniques. **Transposable elements:** Structure and Molecular basis of AC-DS transposition in maize, "P" element of Drosophila and hybrid dysgenesis, Yeast "T₇" elements, Retrotransposons

UNIT - IV

Mutation :- types, spontaneous, and induced, mutagens, physical and chemical, mutations of molecular levels, point mutations, frame shift, auxotrophic and suppressor mutations.

UNIT - V

Light induced repair, excision repair and mismatch repair, post replication repair, Rec gene and its role in DNA repair, SOS repair and SOS response.

Practical BTP : 703(2) : GENE BIOTECHNOLOGY

1. Study of different phases of mitosis in onion root tips.
2. Study of different phases of meiosis in Allium cepa floral buds
3. Mutation of DNA by UV
4. Problems and assignments in Mendelian genetics.
5. Chemical induced mutation in bacteria.
6. Induction of chromosomal aberrations by chemical mutagenesis in any plant.
7. Isolation of auxotrophic mutants (plants or insects).
8. Repair of DNA by Photo activation of Photolyase in bacteria.
9. Mutation of bacteria by UV.

III B.Sc. (SEMESTER - VI)
BTT- 703(3) : BIOSTATISTICS AND BIOINFORMATICS (ELECTIVE THEORY)

UNIT – I

Scope of computers in biological research, Introduction to Bioinformatics: Definition, nature and scope of bioinformatics. Bioinformatics versus computational biology. Branches of bioinformatics. Basic concepts in bioinformatics.

UNIT – II

Biostatistics: probability and distribution. Poisson and binomial distributions. Normal distribution. Measurement of central tendency (mean, mode and range) and dispersion (standard error and standard deviation).

UNIT – III

Computational phylogenetics – various applications. Phylip soft ware. Microarray, Bioinformatics – Experimental design & Over view of data analysis.

UNIT – IV

Basic concepts of system biology. Over view of computer aided drug design. Searching sequence database using BLAST. Concept of genomics and proteomics.

UNIT – V

Population and sampling test of significance. Test hypothesis. Student t-test for small samples. Chi² test for analysis, correlation and regression. Computer applications in Biotechnology.

Practical BTP : 703(3) : GENE BIOTECHNOLOGY

1. Isolation of plasmid DNA from *E.coli* cells
2. Quantitative and qualitative analysis of proteins / DNA by using spectrophotometer.
3. Demonstration of Southern hybridization
4. Demonstration of amplification DNA by PCR.
5. Use of software for sequence analysis of nucleotides and proteins.
6. Problem related to t – test and chi² test.

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**I, II, III, IV, V AND VI SEMESTER
CBCS B.A. / B.Sc. BIO-TECHNOLOGY**

MODEL QUESTION PAPER

Time : 3 hours

Max marks : 75

SECTION - A

5 X 5 = 25M

Answer any FIVE of the followings

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

SECTION - B

Answer the following questions. Each question carries equal marks.

5 X 10 = 50M

UNIT-I

9.

(OR)

10.

UNIT-II

11.

(OR)

12.

UNIT-III

13.

(OR)

14.

UNIT-IV

15.

(OR)

16.

UNIT-V

17.

(OR)

18.

SEMESTER-VI - Electives
ELECTIVE Paper – VII-(A) : ANALYTICAL METHODS
IN CHEMISTRY

45hrs (3h / w)

UNIT-I

Quantitative analysis:

10h

- a) Steps involved in chemical analysis. Principles of volumetric analysis : Theories of acid-base, redox, complexometric, iodometric and precipitation titrations - choice of indicators for these titrations.
- b) Principles of gravimetric analysis: precipitation, coagulation, peptization, coprecipitation, post precipitation, digestion, filtration and washing of precipitate, drying and ignition.

UNIT-II

Treatment of analytical data: 7h Types of errors, significant figures and its importance, accuracy - methods of expressing accuracy, precision - methods of expressing precision, standard deviation and confidence limit.

UNIT-III

SEPARATION TECHNIQUES IN CHEMICAL ANALYSIS:

8h

SOLVENT EXTRACTION : Introduction, principle, techniques, factors affecting solvent extraction, Batch extraction, continuous extraction and counter current extraction. Application - Determination of Iron (III)

Solvent extraction: Principle and process,

UNIT - IV

10h

Chromatography: Classification of chromatography methods, principles of differential migration adsorption phenomenon, Nature of adsorbents, solvent systems, R_f values, factors effecting R_f values.

Paper Chromatography: Principles, R_f values, experimental procedures, choice of paper and solvent systems, developments of chromatogram - ascending, descending and radial. Two dimensional chromatography, applications.

UNIT -V

10h

Thin layer Chromatography (TLC): Advantages. Principles. Experimental procedures. Adsorbents and solvents. Preparation of plates. Development of the chromatogram. Detection of the spots. Applications.

Column Chromatography: Principles, experimental procedures, Stationary and mobile Phases, Separation technique. Applications

1. Analytical Chemistry by Skoog and Miller
2. A textbook of qualitative inorganic analysis by A.I. Vogel
3. Nanochemistry by Geoffrey Ozin and Andre Arsenault
4. Stereochemistry by D. Nasipuri
5. Organic Chemistry by Clayden

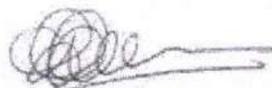
N. Hemant Kumar


LABORATORY COURSE – VI
Practical Paper – VII-(A) (at the end of semester VI) 30hrs (2 h / W)

50M

1. Identification of aminoacids by paper chromatography.
2. Determination of Zn using EDTA
3. Determination of Mg using EDTA

Dr. Honorable Jernoy

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SEMESTER-VI
ELECTIVE PAPER – VII-(B) : ENVIRONMENTAL CHEMISTRY
45 hrs (3 h / w)

UNIT-I

Introduction

9h

Concept of Environmental chemistry-Scope and importance of environment in now adays – Nomenclature of environmental chemistry – Segments of environment - Natural resources – Renewable Resources – Solar and biomass energy and Nonrenewable resources – Thermal power and atomic energy – Reactions of atmospheric oxygen and Hydological cycle.

UNIT-II

Air Pollution

9h

Definition – Sources of air pollution – Classification of air pollution – Acid rain – Photochemical smog – Green house effect – Formation and depletion of ozone – Bhopal gas disaster – Controlling methods of air pollution.

UNIT-III

Water pollution

9h

Unique physical and chemical properties of water – water quality and criteria for finding of water quality – Dissolved oxygen – BOD, COD, – Hardness of water – Methods to convert temporary hard water into soft water – Methods to convert permanent hard water into soft water – eutrophication and its effects – principal wastage treatment – Industrial waste water treatment.

UNIT-IV

Chemical Toxicology

9h

Toxic chemicals in the environment – effects of toxic chemicals – cyanide and its toxic effects – pesticides and its biochemical effects – toxicity of lead, mercury, arsenic and cadmium.

UNIT-V

Ecosystem and biodiversity

9h

Ecosystem

Concepts – structure – Functions and types of ecosystem – Abiotic and biotic components – Energy flow and Energy dynamics of ecosystem – Food chains – Food web – Tropic levels – Biogeochemical cycles (carbon and nitrogen)

N. Hanumanth Kumar


Biodiversity

Definition – level and types of biodiversity – concept - significance – magnitude and distribution of biodiversity – trends - biogeographical classification of india – biodiversity at national, global and regional level.

List of Reference books

1. Fundamentals of ecology by M.C.Dash
2. A Text book of Environmental chemistry by W. Moore and F.A. Moore
3. Environmental Chemistry by Samir k. Banerji

N H... ..



SEMESTER-VI
ELECTIVE PAPER – VII-(C) GREEN CHEMISTRY
45 hrs (3 h / w)

UNIT-I

10h

Green Chemistry: Introduction- Definition of green Chemistry, need of green chemistry, basic principles of green chemistry. Green synthesis- Evaluation of the type of the reaction i) Rearrangements (100% atom economic), ii) Addition reaction (100% atom economic). Organic reactions by Sonication method: apparatus required examples of sonochemical reactions (Heck, Hunsdiecker and Wittig reactions).

UNIT-II

10h

Selection of solvent:i) Aqueous phase reactions ii) Reactions in ionic liquids, Heck reaction, Suzuki reactions, epoxidation. iii) Solid supported synthesis
Super critical CO₂: Preparation, properties and applications, (decaffeination, dry cleaning)

UNIT-III

10h

Microwave and Ultrasound assisted green synthesis: Apparatus required, examples of MAOS (synthesis of fused anthro quinones, Leukart reductive amination of ketones) - Advantages and disadvantages of MAOS. Aldol condensation-Cannizzaro reaction-Diels-Alder reactions-Strecker's synthesis

UNIT-IV

5h

Green catalysis: Heterogeneous catalysis, use of zeolites, silica, alumina, supported catalysis- biocatalysis: Enzymes, microbes Phase transfer catalysis (micellar/surfactant)

UNIT V

10h

Examples of green synthesis / reactions and some real world cases: 1. Green synthesis of the following compounds: adipic acid, catechol, disodium imino di acetate (alternative Strecker's synthesis) 2. Microwave assisted reaction in water – Hoffmann elimination – methyl benzoate to benzoic acid – oxidation of toluene and alcohols – microwave assisted reactions in organic solvents, Diels-Alder reactions and decarboxylation reaction. 3. Ultrasound assisted reactions – sonochemical Simmons –Smith reaction (ultrasonic alternative to iodine)

Reference books:

1. Green Chemistry Theory and Practice. P.T. Anatas and J.C. Warner
2. Green Chemistry V.K. Ahluwalia Narosa, New Delhi.
3. Real world cases in Green Chemistry M.C. Cann and M.E. Connelly
4. Green Chemistry: Introductory Text M.Lancaster: Royal Society of Chemistry (London)
5. Green Chemistry: Introductory Text, M.Lancaster
6. Principles and practice of heterogeneous catalysis, Thomas J.M., Thomas M.J., John Wiley
7. Green Chemistry: Environmental friendly alternatives R S Sanghli and M.M Srivastava, Narosa Publications

N Hanumanth Kumar


LABORATORY COURSE - VII

Practical Paper - Elective VII C (at the end of semester VI) 30 hrs (2 h/W)

1. Determination of specific reaction rate of hydrolysis for methyl acetate catalysed by hydrogen ion at room temperature.
2. Determination of molecular status and partition coefficient of benzoic acid in Benzene and water.
3. Surface tension and viscosity of liquids.
4. Adsorption of acetic acid on animal charcoal, verification of Freundlich isotherm.

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CLUSTER ELECTIVES: Cluster Elective – I
Analytical and Physical
SEMESTER-VI
PAPER – VIII-A-1: POLYMER CHEMISTRY

45 hrs (3 h / w)

UNIT-I

12h

Introduction of polymers:

Basic definitions, degree of polymerization, classification of polymers- Natural and Synthetic polymers, Organic and Inorganic polymers, Thermoplastic and Thermosetting polymers, Plastics, Elastomers, Fibers and Resins, Linear, Branched and Cross Linked polymers, Addition polymers and Condensation Polymers, mechanism of polymerization. Free radical, ionic and Zeigler – Natta polymerization.

UNIT-II

10h

Techniques of Polymerization : Bulk polymerization, solution polymerization, suspension and Emulsion polymerization.

Molecular weights of polymers: Number average and weight average molecular weights
Determination of molecular weight of polymers by Viscometry, Osmometry and light scattering methods.

UNIT-III

6h

Kinetics of Free radical polymerization, Glass Transition temperature(T_g) and Determination of T_g:

Free volume theory, WLF equation, factors affecting glass transition temperature (T_g).

UNIT-IV

9h

Polymer additives:

Introduction to plastic additives – fillers, Plasticizers and Softeners, Lubricants and Flow Promoters, Anti aging additives, Flame Retardants, Colourants, Blowing agents, Cross linking agents, Photo stabilizers, Nucleating agents.

UNIT-V

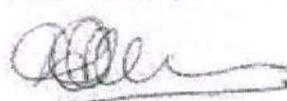
8h

Polymers and their applications:

Preparation and industrial applications of Polyethylene, Polyvinyl chloride, Teflon, Polyacrylonitrile, Terelene, Nylon6.6 silicones.

Reference Books:

1. Seymour, R.B. & Carraher, C.E. *Polymer Chemistry: An Introduction*, Marcel Dekker, Inc. New York, 1981.
2. Odian, G. *Principles of Polymerization*, 4th Ed. Wiley, 2004.
3. Billmeyer, F.W. *Textbook of Polymer Science*, 2nd Ed. Wiley Interscience, 1971.
4. Ghosh, P. *Polymer Science & Technology*, Tata McGraw-Hill Education, 1991.34
5. Lenz, R.W. *Organic Chemistry of Synthetic High Polymers*. Interscience Publishers, New York, 1967.

N. H. ...


SEMESTER-VI
PAPER – VIII-A-2: INSTRUMENTAL METHODS OF ANALYSIS
45 hrs (3 h / w)

UNIT – I

Introduction to spectroscopic methods of analysis: 4 h
Recap of the spectroscopic methods covered in detail in the core chemistry syllabus:
Treatment of analytical data, including error analysis. Classification of analytical methods and the types of instrumental methods. Consideration of electromagnetic radiation.

UNIT – II

Molecular spectroscopy: 8h
Infrared spectroscopy:
Interactions with molecules: absorption and scattering. Means of excitation (light sources), separation of spectrum (wavelength dispersion, time resolution), detection of the signal (heat, differential detection), interpretation of spectrum (qualitative, mixtures, resolution), advantages of Fourier Transform (FTIR). Samples and results expected. Applications: Issues of quality assurance and quality control, Special problems for portable instrumentation and rapid detection.

UNIT – III

10h
UV-Visible/ Near IR – emission, absorption, fluorescence and photoacoustic. Excitation sources (lasers, time resolution), wavelength dispersion (gratings, prisms, interference filters, laser, placement of sample relative to dispersion, resolution), Detection of signal (photocells, photomultipliers, diode arrays, sensitivity and S/N), Single and Double Beam instruments, Interpretation (quantification, mixtures, absorption vs. fluorescence and the use of time, photoacoustic, fluorescent tags).

UNIT – IV

Separation techniques

Chromatography: Gas chromatography, liquid chromatography, supercritical fluids, Importance of column technology (packing, capillaries), Separation based on increasing number of factors (volatility, solubility, interactions with stationary phase, size, electrical field), Detection: simple vs. specific (gas and liquid), Detection as a means of further analysis (use of tags and coupling to IR and MS), Electrophoresis (plates and capillary) and use with DNA analysis. 46 *Immunoassays and DNA techniques* 8h

Mass spectroscopy: Making the gaseous molecule into an ion (electron impact, chemical ionization), Making liquids and solids into ions (electrospray, electrical discharge, laser desorption, fast atom bombardment), Separation of ions on basis of mass to charge ratio, Magnetic, Time of flight, Electric quadrupole. Resolution, time and multiple separations. Detection and interpretation (how this is linked to excitation). 8h

N H o m a h a k a s i n g



UNIT - V

Elemental analysis:

10h

Mass spectrometry (electrical discharges).

Atomic spectroscopy: Atomic absorption, Atomic emission, and Atomic fluorescence.

Excitation and getting sample into gas phase (flames, electrical discharges, plasmas),

Wavelength separation and resolution (dependence on technique), Detection of radiation (simultaneous/scanning, signal noise), Interpretation (errors due to molecular and ionic species, matrix effects, other interferences).

NMR spectroscopy: Principle, Instrumentation, Factors affecting chemical shift, Spin coupling, Applications.

4h

Electroanalytical Methods: Potentiometry & Voltammetry

4h

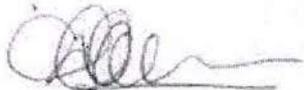
Radiochemical Methods

4h

X-ray analysis and electron spectroscopy (surface analysis)

Reference books:

1. Skoog, D.A. Holler F.J. & Nieman, T.A. *Principles of Instrumental Analysis*, Cengage Learning India Ed.
2. Willard, H.H., Merritt, L.L., Dean, J. & Settee, F.A. *Instrumental Methods of Analysis*, 7th Ed. Wadsworth Publishing Company Ltd., Belmont, California, USA, 1988.
3. P.W. Atkins: *Physical Chemistry*.
4. G.W. Castellan: *Physical Chemistry*.
5. C.N. Banwell: *Fundamentals of Molecular Spectroscopy*.
6. Brian Smith: *Infrared Spectral Interpretations: A Systematic Approach*.
7. W.J. Moore: *Physical Chemistry*

N H... .. 10m


SEMESTER-VI

PAPER - VIII-A-3 : ANALYSIS OF DRUGS, FOODS, DAIRY PRODUCTS & BIO-CHEMICAL ANALYSIS

45 hrs (3 h / w)

UNIT - I

Analysis of the following drugs and pharmaceuticals preparations:

(Knowledge of molecular formula, structure and analysis)

Analysis of analgesics and antipyretics like aspirin and paracetamol

Analysis of antimalarials like chloroquine .

Analysis of drugs in the treatment of infections and infestations :Amoxycillin, chloramphenicol, metronidazole, penicillin, tetracycline, cephalixin(cefalexin).

Anti tuberculous drug- isoniazid.

UNIT - II

Analysis of the following drugs and pharmaceuticals preparations:

(Knowledge of molecular formula, structure and analysis)

Analysis of antihistamine drugs and sedatives like: allegra, zyrtec(citirizine), alprazolam, trazodone, lorazepam, ambien(zolpidem), diazepam,

UNIT - III

Analysis of anti epileptic and anti convulsant drugs like phenobarbital and phenacemide.

Analysis of drugs used in case of cardiovascular drugs:atenolol, narvasc(amlodipine),

Analysis of lipitor(atorvastatin) a drug for the preventin of productin of cholesterol.

Analysis of diuretics like: furosemide (Lasix), triamterene

Analysis of prevacid(fansoprazole) a drug used for the prevention of production of acids in stomach.

UNIT - IV

Analysis of Milk and milk products: Acidity, total solids, fat, total nitrogen, protenines,lactose, phosphate activity, casein, choride. , Analysis of food materials-

Preservatives: Sodium carbonate, sodium benzoate sorbic acid Coloring matters, - Brilliant blue FCF, fast green FCF, tertrazine, erythrosine , sunset yellow FCF.

Flavoring agents - Vanilla , diacetyl, isoamyl acetate, limonene, ethylpropionate , allyl hexanoate and Adulterants in rice and wheat, wheat floo0r, sago,coocnut oil, coffee powder, tea powder, milk.

UNIT - V

Clinical analysis of blood:Composition of blood,clinical analysis,trace elements in the body.Estimation of blood chiolesterol,glucose,enzymes,RBC & WBC ,Blood gas analyser.

REFERENCE BOOKS :

- 1.F.J.Welcher-Standard methods of analysis,
- 2.A.I.Vogel-A text book of quantitative Inorganic analysis-ELBS,
- 3.F.D.Snell & F.M.Biffen-Commercial methods of analysis-D.B.Taraporavala & sons,
- 4.J.J.Elving and I.M.Kolthoff- Chemical analysis - A series of monographs on analytical chemistry and its applications -- Inter Science- Vol I to VII.

N. H. ... K. ...

5. Analytical Agricultural Chemistry by S.L. Chopra & J.S. Kanwar -- Kalyani Publishers

6. Quantitative analysis of drugs in pharmaceutical formulations by P.D. Sethi, CBS Publishers and Distributors, New Delhi
7. G. Ingram- Methods of organic elemental micro analysis- Chapman and Hall.,
8. H. Wincciam and Bobbles (Henry J)- Instrumental methods of analysis of food additives.,
9. H. Edward- The Chemical analysis of foods; practical treatise on the examination of food stuffs and the detection of adulterants,
10. The quantitative analysis of drugs- D.C. Garratt- Chapman & Hall.,
11. A text book of pharmaceutical analysis by K.A. Connors- Wiley- International.,
12. Comprehensive medicinal chemistry- Ed Corwin Hansch Vol 5, Pergamon Press.,

N Hanan H. Kanwar


I. LABORATORY COURSE – VIII

Practical Paper – VIII-A-1: (at the end of semester VI) 30 hrs (2 h / W)

1. Preparation of Aspirin
2. Preparation of Paracetamol
3. Preparation of Acetanilide
4. Preparation of Barbituric Acid
5. Preparation of Phenyl Azo β -naphthol

II. LABORATORY COURSE – VIII

Practical Paper – VIII-A-2 (at the end of semester VI)

30 hrs (2 h / W)

1. Green procedure for organic qualitative analysis: Detection of N, S and halogens
2. Acetylation of 1^o amine by green method: Preparation of acetanilide
3. Rearrangement reaction in green conditions: Benzil-Benzilic acid rearrangement
4. Electrophilic aromatic substitution reaction: Nitration of phenol
5. Radical coupling reaction: Preparation of 1,1-bis-2-naphthol
6. Green oxidation reaction: Synthesis of adipic acid
7. Green procedure for Diels Alder reaction between furan and maleic anhydride

List of Reference Books

1. Green Chemistry Theory and Practice, P.T. Anatas and J.C. Warner
2. Green Chemistry V.K. Ahluwalia Narosa, New Delhi.
3. Real world cases in Green Chemistry M.C. Cann and M.E. Connelly
4. Green Chemistry: Introductory Text M.Lancaster: Royal Society of Chemistry (London)
5. Green Chemistry: Introductory Text, M.Lancaster
6. Principles and practice of heterogeneous catalysis, Thomas J.M., Thomas M.J., John Wiley
7. Green Chemistry: Environmental friendly alternatives R S Saughli and M.M. Srivastava, Narosa Publications

VII-A-3 Practical:- Project Work

N. Hemant - Kary


Cluster Elective -II
Fuels and Industrial Inorganic materials
PAPER - VIII-B-1 : FUEL CHEMISTRY AND BATTERIES

45 hrs (3 h / w)

UNIT -I

12h

Review of energy sources (renewable and non-renewable) – classification of fuels and their calorific value. Coal: Uses of Coal (fuel and non fuel) in various industries, its composition, carbonization of coal - coal gas, producer gas and water gas – composition and uses – fractionation of coal tar – uses of coal tar based chemicals, requisites of a good metallurgical coke, coal gasification (Hydro gasification and catalytic gasification) coal liquefaction and solvent refining.

UNIT-II

6h

Petroleum and petrol chemical industry:

Composition of crude petroleum, refining and different types of petroleum products and their applications.

UNIT-III

10h

Fractional distillation (principle and process), cracking (Thermal and catalytic cracking). Reforming petroleum and non petroleum fuels (LPG, CNG, LNG, biogas), fuels derived from biomass, fuel from waste, synthetic fuels (gaseous and liquids), clear fuels, petro chemicals: vinyl acetate, propylene oxide, isoprene, butadiene, toluene and its derivative xylene.

UNIT-IV

10h

Lubricants:

Classification of lubricants, lubricating oils (conducting and non conducting), solid and semi solid lubricants, synthetic lubricants. Properties of lubricants (viscosity index, cloud point, pour point) and their determination.

UNIT-V

7h

Batteries:

Primary and secondary batteries, battery components and their role, Characteristics of Battery. Working of following batteries: Pb acid, Li-Battery, Solid state electrolyte battery. Fuel cells, Solar cell and polymer cell.

Reference books:

1. E.Stochi : Industrial chemistry, Vol-1, Ellis Horwood Ltd.UK
2. P.C.Jain, M.Jain: Engineering chemistry, Dhanpat Rai & sons, Delhi.
3. B.K.Sharma: Industrial Chemistry, Goel Publishing house, Meerut.

N Homan 14/10/2015



SEMESTER-VI

PAPER – VIII-B-2: INORGANIC MATERIALS OF INDUSTRIAL IMPORTANCE

45 hrs (3 h / w)

UNIT - I

Recapitulation of *s*- and *p*-Block Elements

8h

Periodicity in *s*- and *p*-block elements with respect to electronic configuration, atomic and ionic size, ionization enthalpy, electronegativity (Pauling, Mulliken, and Alfred - Rochow scales). Allotropy in C, S, and P. Oxidation states with reference to elements in unusual and rare oxidation states like carbides and nitrides), inert pair effect, diagonal relationship and anomalous behaviour of first member of each group.

UNIT - II

15h

Silicate Industries

Glass: Glassy state and its properties, classification (silicate and non-silicate glasses).

Manufacture and processing of glass. Composition and properties of the following types of glasses: Soda lime glass, lead glass, armoured glass, safety glass, borosilicate glass, fluorosilicate, coloured glass, photosensitive glass.

Ceramics: Important clays and feldspar, ceramic, their types and manufacture. High technology ceramics and their applications, superconducting and semiconducting oxides, fullerenes carbon nanotubes and carbon fibre.

Cements: Classification of cement, ingredients and their role, Manufacture of cement and the setting process, quick setting cements.

UNIT - III

8h

Fertilizers:

Different types of fertilizers. Manufacture of the following fertilizers: Urea, ammonium nitrate, calcium ammonium nitrate, ammonium phosphates; polyphosphate, superphosphate, compound and mixed fertilizers, potassium chloride, potassium sulphate.

UNIT - IV

8h

Surface Coatings:

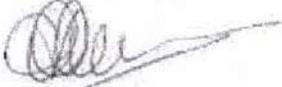
Objectives of coatings surfaces, preliminary treatment of surface, classification of surface coatings. Paints and pigments-formulation, composition and related properties. Oil paint, Vehicle, modified oils, Pigments, toners and lakes pigments, Fillers, Thinners, Enamels, emulsifying agents. Special paints (Heat retardant, Fire retardant, Eco-friendly paint, Plastic paint), Dyes, Wax polishing, Water and Oil paints, additives, Metallic coatings (electrolytic and electroless), metal spraying and anodizing.

UNIT - V

6h

Alloys:

Classification of alloys, ferrous and non-ferrous alloys, Specific properties of elements in alloys. Manufacture of Steel (removal of silicon decarbonization, demanganization, desulphurization dephosphorisation) and surface treatment (argon treatment, heat treatment, nitriding, carburizing). Composition and properties of different types of steels.

N H. - H. K. King


Chemical explosives:

Origin of explosive properties in organic compounds, preparation and explosive properties of lead azide, PETN, cyclonite (RDX). Introduction to rocket propellants.

Reference Books:

1. E. Stocchi: *Industrial Chemistry*, Vol-I, Ellis Horwood Ltd. UK.
2. R. M. Felder, R. W. Rousseau: *Elementary Principles of Chemical Processes*, Wiley Publishers, New Delhi.
3. W. D. Kingery, H. K. Bowen, D. R. Uhlmann: *Introduction to Ceramics*, Wiley Publishers, New Delhi.
4. J. A. Kent: *Riegel's Handbook of Industrial Chemistry*, CBS Publishers, New Delhi.
5. P. C. Jain & M. Jain: *Engineering Chemistry*, Dhanpat Rai & Sons, Delhi.
6. R. Gopalan, D. Venkappayya, S. Nagarajan: *Engineering Chemistry*, Vikas Publications, New Delhi.
7. B. K. Sharma: *Engineering Chemistry*, Goel Publishing House, Meerut.

N Hanumanth Kumar



SEMESTER-VI

PAPER – VIII-B-3 : ANALYSIS OF APPLIED INDUSTRIAL PRODUCTS

45 hrs (3 h / w)

UNIT-I

Analysis of soaps: moisture and volatile matter, combined alkali, total fatty matter, free alkali, total fatty acid, sodium silicate and chlorides.

Analysis of paints : Vehicle and pigments, Barium Sulphate, total lead, lead chromate, iron pigments, zinc chromate

UNIT- II

Analysis of oils: saponification value, iodine value, acid value, ester value, bromine value, acetyl value.

Analysis of industrial solvents like benzene, acetone, methanol and acetic acid.,
Determination of methoxyl and N-methyl groups.,

UNIT-III

Analysis of fertilizers: urea, NPK fertilizer, super phosphate,

Analysis of DDT, BHC, endrin, endosulfone, malathion, parathion.,

Analysis of starch, sugars, cellulose and paper.

UNIT -IV

Gas analysis: carbon dioxide, carbon monoxide, oxygen, hydrogen, saturated hydrocarbon, unsaturated hydrocarbons, nitrogen, octane number, cetane number

Analysis of Fuel gases like: water gas, producer gas, kerosene (oil) gas.

Ultimate analysis : carbon, hydrogen, nitrogen, oxygen, phosphorus and sulfur.,

UNIT - V

Analysis of Complex materials:

Analysis of cement- loss on ignition, insoluble residu, total silica, sesqui oxides, lime, magnesia, ferric oxide, sulphuric anhydrid.

Analysis of glasses - Determinaiton of silica, sulphaur, barium, arsenic, antimony, total R_2O_3 , calcium, magnesium, total alkalies, aluminium, chloride, fluoride

SUGGESTED BOOKS:

1. F.J. Welcher-Standard methods of analysis,

2. A.I. Vogel-A text book of quantitative Inorganic analysis-ELBS,

3. H.H. Willard and H. Deal- Advanced quantitative analysis- Van Nostrand Co,

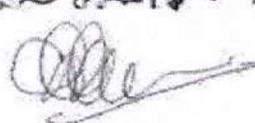
4. F.D. Snell & F.M. Biffen-Commercial methods of analysis-D.B. Taraporavala & sons,

5. J.J. Elving and I.M. Kolthoff- Chemical analysis - A series of monographs on analytical chemistry and its applications -- Inter Science- Vol I to VII.,

6. G.Z. Weig - Analytical methods for pesticides, plant growth regulators and food additives - Vols I to VII,

7. Analytical Agricultural Chemistry by S.L. Chopra & J.S. Kanwar -- Kalyani Publishers

8. Manual of soil, plant, water and fertilizer analysis, R.M. Upadhyay and N.L. Sharma, Kalyani Publishers

N Manoj Kumar


I. LABORATORY COURSE – VIII
Practical Paper – VIII-B-1: (at the end of semester VI) 30 hrs (2 h / W)

1. Preparation of Aspirin
2. Preparation of Paracetamol
3. Preparation of Acetanilide
4. Preparation of Barbituric Acid
5. Preparation of Phenyl Azo β -naphthol

II. LABORATORY COURSE – VIII
Practical Paper – VIII-B-2: (at the end of semester VI)

30 hrs (2 h / W)

1. Green procedure for organic qualitative analysis: Detection of N, S and halogens
2. Acetylation of 1^o amine by green method: Preparation of acetanilide
3. Rearrangement reaction in green conditions: Benzil-Benzilic acid rearrangement
4. Electrophilic aromatic substitution reaction: Nitration of phenol
5. Radical coupling reaction: Preparation of 1,1-bis -2-naphthol
6. Green oxidation reaction: Synthesis of adipic acid
7. Green procedure for Diels Alder reaction between furan and maleic anhydride

List of Reference Books

1. Green Chemistry Theory and Practice. P.T. Anatas and J.C. Warner
2. Green Chemistry V.K. Ahluwalia Narosa, New Delhi.
3. Real world cases in Green Chemistry M.C. Cann and M.E. Connelly
4. Green Chemistry: Introductory Text M.Lancaster: Royal Society of Chemistry (London)
5. Green Chemistry: Introductory Text. M.Lancaster
6. Principles and practice of heterogeneous catalysis, Thomas J.M., Thomas M.J., John Wiley
7. Green Chemistry: Environmental friendly alternatives R S Sanghli and M.M. Srivastava, Narosa Publications

VII-A-3 Practical:- Project Work / Intern Ship

Dr. Himanshu Kumar

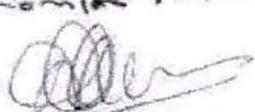

Cluster Elective –III
ORGANIC
PAPER – VIII-C-1 : ORGANIC SPECTROSCOPIC TECHNIQUES
45 hrs (3 h / w)

UNIT-I 10h
NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY
Nuclear spin, Principles of NMR-Classical and Quantum Mechanical methods, Magnetic moment and Spin angular momentum. Larmour Frequency. Instrumentation. Relaxation-spin-spin & spin lattice relaxation. Shielding constants, Chemical shifts, Shielding and Deshielding mechanism-Factors influencing Chemical shift. Spin-Spin interactions-AX, AX₂ and AB types. Vicinal, Geminal and Long range coupling- Factors influencing coupling constants.

UNIT – II 5h
Spin decoupling, Spin tickling, Deuterium exchange, Chemical shift reagents and Nuclear overhauser effect. Applications in Medical diagnostics, Reaction kinetics and Mechanically induced dynamic nuclear polarization. FT NMR and its Advantages.

UNIT-III 10h
UV & VISIBLE SPECTROSCOPY
Electronic spectra of diatomic molecules. The Born-oppenheimer approximation. Vibrational coarse structure: Bond association and Bond sequence. Intensity of Vibrational-electronic spectra: The Franck-Condon principle. Rotational fine structure of electronic vibration transitions. Electronic structure of diatomic molecules.
Types of transitions, Chromophores, Conjugated dienes, trienes and polyenes, unsaturated carbonyl compounds-Woodward – Fieser rules.

UNIT-IV 5h
Electronic spectra of polyatomic molecules. Chemical analysis by Electronic Spectroscopy – Beer-Lambert's Law. Deviation from Beer's law. Quantitative determination of metal ions (Mn⁺², Fe⁺², NO₂⁻, Pb⁺²). Simultaneous determination of Chromium and Manganese in a mixture.

N. Venkatesh Kumar


Electron Spin Resonance Spectroscopy

Basic Principles, Theory of ESR, Comparison of NMR & ESR. Instrumentation, Factors affecting the 'g' value, determination of 'g' value. Isotropic and Anisotropic constants. Splitting hyper fine splitting coupling constants. Line width, Zero field splitting and Kramer degeneracy. Crystal field splitting, Crystal field effects.

Applications:- Detection of free radicals; ESR spectra of (a) Methyl radical (CH_3), (b) Benzene anion (C_6H_6^-) (c) Isoquinine (d) $[\text{Cu}(\text{H}_2\text{O})_6]^{+2}$ (e) $[\text{Fe}(\text{CN})_5\text{NO}]^{3-}$ (f)

REFERENCE BOOKS:

1. Electron Spin Resonance Elementary Theory and Practical Applications- John E. Wertz and James R. Bolton, Chapman and Hall, 1986.
2. Spectroscopic Identification of organic compounds – Silverstein, Basseler and Merril.
3. Organic Spectroscopy- William Kemp.
4. Fundamentals of Molecular Spectroscopy- C.N.Banwell and E.A. Mc cash 4th Edition, Tata Mc Graw Hill Publishing Co., Ltd. 1994.
5. Physical Methods in Inorganic Chemistry – R.S.Drago, Saunders Publications.
6. Application of Mössbauer Spectroscopy – Green Mood.
7. NMR, NQR, EPR and Mössbauer Spectroscopy in inorganic chemistry – R.V Parish, Ellis, Harwood.
8. Instrumental Methods of Chemical Analysis- H.Kaur, Pragathi Prakashan, 2003.
9. Instrumental Methods of Analysis, 7th Edition – Willard, Merrit, Dean, Settle, CBS Publications, 1986.
10. Molecular Structure and Spectroscopy – G. Aruldhas, Prentice Hall of India Pvt.Ltd, New Delhi, 2001.
11. Mössbauer Spectroscopy – N.N. Green Wood and T.C. Gibb, Chapman, and Hall, London 1971.
12. Coordination Chemistry: Experimental Methods- K. Burger, London Butter Worths, 1973.
13. Analytical spectroscopy – Kamlesh Bansal, Campus books, 2008.
14. Structural Inorganic Chemistry Mössbauer Spectroscopy – Bhide.
15. Principle of Mössbauer Spectroscopy – T.C. Gibb, Chapman, and Hall, London 1976.

N. H. K. K. K.



Cluster Elective -III
ORGANIC
PAPER - VIII-C-2 : ADVANCED ORGANIC REACTIONS
45 hrs (3 h / w)

UNIT - I

ORGANIC PHOTOCHEMISTRY

Organic photochemistry : Molecular orbitals, carbonyl chromophore-triplet states, Jablonski diagram, inter-system crossing. Energy transfer. Energies properties and reaction of singlet and triplet states of and transitions.

Photochemical reactions : (a) Photoreduction, mechanism, influence of temperature, solvent, nature of hydrogen donors, structure of substrates on the course of photo reduction..

UNIT - II

ORGANIC PHOTOCHEMISTRY

Norrish cleavages, type I : Mechanism, acyclic cyclicdiones, influence of sensitizer, photo Fries rearrangement. Norrish type II cleavage : Mechanism and stereochemistry, type II reactions of esters : 1; 2 diketones, photo decarboxylation., Di - π methane rearrangement, Photochemistry - of conjugated dienes, Decomposition of nitrites - Barton reaction.

UNIT - III

PROTECTING GROUPS AND ORGANIC REACTIONS

Principles of (1) Protection of alcohols - ether formation including silyl ethers - ester formation, (2) Protection of diols - acetal, ketal and carbonate formation, (3) Protection of carboxylic acids - ester formation, benzyl and t-butyl esters, (4) Protection of amines - acetylation, benzoylation, benzyloxy carbonyl, triphenyl methyl groups and fmoc, (5) Protection of carbonyl groups - acetal, ketal, 1,2-glycols and 1,2-dithioglycols formation.

UNIT - IV

Synthetic reactions : Mannich reaction - Mannich bases - Robinson annulations. The Shapiro reaction, Stork-enamine reaction. Use of dithioacetals - Umpolung, phase transfereatalysis - mechanisms and use of benzyl trialkyl ammonium halides. Wittig reaction.

UNIT - V : NEW SYNTHETIC REACTIONS

Baylis-Hillman reaction, RCM olefm metathesis, Grubb catalyst, Mukayama aldol reaction, Mitsunobu reaction, McMurrey reaction, Julia-Lythgoe olefination, and Peterson's stereoselective olefination, Heck reaction, Suzuki coupling, Stille coupling and Sonogishira coupling, Buchwald-Hartwig coupling, Ugi reaction, Click reaction.

N. Hanumanth Kumar


Recommended Books

1. Molecular reactions and Photochemistry by Charles Dupey and O.L. Chapman.
2. Molecular Photochemistry by Turru.
3. Importance of antibonding orbitals by Jaffe and Orchin.
4. Text Book of Organic Chemistry by Cram, Hammand and Henrickson.
5. Some modern methods of organic synthesis by W. Carruthers.
6. Guide Book to Organic Synthesis by R.K. Meckie, D.M. Smith and R.A. Atken.
7. Organic Synthesis by O.House.
8. Organic synthesis by Michael B. Smith.
9. Organic Chemistry Claydon and others 2005.
10. Name Reactions by Jie Jack Li
11. Reagents in Organic synthesis by B.P. Mundy and others.
12. Tandem Organic Reactions by Tse-Lok Ho.

N. Honam the name
Allen

Cluster Elective -III
ORGANIC

PAPER - VIII-C-3 : PHARMACEUTICAL AND MEDICINAL CHEMISTRY

45 hrs (3 h / w)

UNIT-I

8h

Pharmaceutical chemistry Terminology: Pharmacy, Pharmacology, Pharmacophore, Pharmacodynamics, Pharmacokinetics (ADME, Receptors - brief treatment) Metabolites and Anti metabolites.

UNIT-II

Drugs:

8h

Nomenclature: Chemical name, Generic name and trade names with examples
Classification: Classification based on structures and therapeutic activity with one example each, Administration of drugs

UNIT-III

Synthesis and therapeutic activity of the compounds:

12h

a. Chemotherapeutic Drugs

1. Sulphadruugs(Sulphamethoxazole) 2. Antibiotics - β -Lactam Antibiotics, Macrolide Antibiotics, 3. Anti malarial Drugs(chloroquine)

b. Psycho therapeutic Drugs:

1. Anti pyretics(Paracetamol) 2. Hypnotics, 3. Tranquilizers(Diazepam) 4. Levodopa

UNIT-IV

Pharmacodynamic Drugs:

8h

1. Antiasthma Drugs (Solbutamol) 3. Antianginals (Glycerol Trinitrate)

4. Diuretics(Frusemide)

UNIT-V

HIV-AIDS:

9h

Immunity - CD-4cells, CD-8cells, Retro virus, Replication in human body, Investigation available, prevention of AIDS, Drugs available - examples with structures: PIS: Indinavir (crixivan), Nelfinavir(Viracept).

List of Reference Books:

1. Medicinal Chemistry by Dr. B.V. Ramana
2. Synthetic Drugs by O.D. Tyagi & M. Yadav
3. Medicinal Chemistry by Ashutoshkar
4. Medicinal Chemistry by P. Parimoo
5. Pharmacology & Pharmacotherapeutics R.S. Satoshkar & S.D. Bhandenkar
6. Medicinal Chemistry by Kadametal P-I & P-II
7. European Pharmacopoeia

N Hemant Kumar


III YEAR VI SEMESTER

Paper-VII: Elective-I(A)
Operating Systems

UNIT - I

Operating System Introduction: Operating Systems Objectives and functions, Computer System Architecture, OS Structure, Evolution of Operating Systems (Simple Batch, Multi programmed, Distributed Systems, Real-Time Systems), Operating System services.

UNIT - II

Process and CPU Scheduling - Process concepts - The Process, Process State, Process Control Block, Threads, Process Scheduling - Schedulers, Preemptive and non-preemptive Scheduling algorithms (FCFS, SJF, RR)

UNIT - III

File System Interface - The Concept of a File, Access methods, Directory Structure, File Sharing, Protection, File System Structure
Mass Storage Structure - Overview of Mass Storage Structure, Disk Structure, Disk Attachment

UNIT - IV

Deadlocks - System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection and Recovery from Deadlock.

UNIT - V

Memory Management and Virtual Memory - Logical & physical Address Space, Swapping, Contiguous Allocation, Paging, Structure of Page Table. Segmentation, Segmentation with paging

TEXT BOOK

1. Operating System Principles, Abraham Silberchatz, Peter B. Galvin, Greg Gagne 8th Edition, Wiley Student Edition.
2. Operating systems - Internals and Design Principles, W. Stallings, 6th Edition, Pearson.

REFERENCES BOOKS:

1. Principles of Operating Systems by Naresh Chauhan, OXFORD University Press
2. Modern Operating Systems, Andrew S Tanenbaum 3rd Edition PHI.
3. Operating Systems A concept - based Approach, 2nd Edition, D. M. Dhamdhare, TMH.
4. Principles of Operating Systems, B. L. Stuart, Cengage learning, India Edition.
5. Operating Systems, A. S. Godbole, 2nd Edition, TMH

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

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VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE
CBCS – BSc(CA) - III YEAR - SEMESTER-VI
Paper-VII: Elective-I(A)
OPERATING SYSTEM
MODEL QUESTION PAPER

Time: 3 Hours

Max. Marks : 75

Section-A

Answer any FIVE of the following Questions:

(5 x 5= 25 Marks)

1. Write about various services of an operating system
2. Explain in detail about distributed operating system
3. What is a process? Explain process states
4. Define thread. Explain the benefits of threads.
5. Explain logical memory address space
6. What is segmentation? Explain
7. Write about file sharing concepts.
8. Briefly explain various file access methods.
9. Write a short note on deadlock characterization
10. Write about deadlock prevention

Section - B

Answer any FIVE of the following Questions

(5 × 10 =50 Marks)

11. Explain in detail about objectives and functions of an operating system
12. Write in detail about computer system architecture with a neat sketch
13. Explain about process control block
14. Write about various scheduling algorithms with an example
15. What is paging? Explain structure of a page table.
16. Write in detail about segmentation with paging.
17. Explain various concepts of a file.
18. Explain about mass storage structure
19. What is deadlock? Explain various methods to handle deadlocks
20. Explain in detail about deadlock detection and recovery from a deadlock

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

III YEAR VI SEMESTER
Paper-VII: Elective-I(B)
SOFTWARE ENGINEERING

UNIT I

INTRODUCTION: The Evolving Role of Software – Software and its characteristics – Software Myths – Software Engineering – Components of Software Engineering – Software Engineering – A Layered Technology. Reactive Vs Proactive Risk Strategies – types of Software Risks – Risk Management process

UNIT II

SOFTWARE PROCESS MODELS: Prescriptive Models – The waterfall Model – Incremental Process Models: The Incremental Model, The RAD Model, Evolutionary Process Model: Prototyping Model, The spiral Model

UNIT III

REQUIREMENTS ENGINEERING: Requirements Engineering Tasks, Initiating the Requirement Engineering Process.

BUILDING THE ANALYSIS MODEL: Requirements Analysis, Analysis Modeling Approaches, Data Modeling Concepts, Flow – oriented Modeling: Creating a Data Flow Model.

UNIT IV

SOFTWARE DESIGN: Design Process & Design Quality – Design concepts – Architectural styles & Patterns. Quality Management: Quality Concepts – Software Quality Assurance

UNIT V

SOFTWARE QUALITY AND TESTING : Functional Testing – System Testing – User satisfaction Testing – Test Cases – Test plans.

SOFTWARE PROJECT MANAGEMENT (SPM): Introduction – SPM basics – Project Management –Project Integration Management – Project Life Cycle.

TEXT BOOKS:

1. Roger Pressman S., “Software Engineering: A Practitioner's Approach”, McGraw Hill, 2010.

REFERENCE BOOKS:

1. Software Engineering Principles and Practice by Deepak Jain Oxford University Press
2. Sommerville, “Software Engineering”, Eighth Edition, Pearson Education, 2007
3. Pfleeger, “Software Engineering: Theory & Practice”, 3rd Edition, Pearson Education, 2009
4. Carlo Ghazi, Mehdi Jazayari, Dino Mandrioli, “Fundamentals of Software Engineering”, Pearson Education, 2003

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

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(with effect from 2016-'17)

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE
CBCS – BSc(CA) - III YEAR - SEMESTER-VI
Paper-VII: Elective-I(B)
SOFTWARE ENGINEERING
MODEL QUESTION PAPER

Time: 3 Hours

Max. Marks : 75

Section-A

Answer any FIVE of the following Questions:

(5 x 5= 25 Marks)

1. Define software and explain its characteristics.
2. List and Explain software myths.
3. Write advantages & disadvantages of waterfall model.
4. Define Incremental model.
5. Write about initiating requirements engineering process.
6. Draw level 0 and level 1 DFD for ATM system.
7. Write quality concepts.
8. Define design process.
9. Discuss about Software Project Management basics.
10. Define test plans.

Section-B

Answer any FIVE of the following Questions:

(5 x 10= 50 Marks)

11. Explain components of software engineering.
12. What is a risk? Explain its types in detail.
13. Explain about RAD model.
14. What is spiral model? Explain in detail.
15. Discuss about requirements engineering tasks.
16. Explain Analysis models.
17. Define and explain Software Quality Assurance.
18. Write about Design concepts in software design.
19. What is software testing? Explain Functional testing.
20. Explain software Project life cycle.

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

III YEAR VI SEMESTER

Paper-VIII: Elective-I(C)
COMPUTER NETWORKS

UNIT I :

Definition, Advantages of Networks, Network topologies, Types of Networks, Network models

– Internet model, OSI model.

Physical Layer: Digital Transmission – Coding, Sampling, Analog Transmission - Modulation of digital and analog signals, Guided media

UNIT II :

Data Link Layer: Error detection and correction, Data link Protocols - Stop and wait, Go-back-n, Selective repeat.

Wired LANS – Traditional Ethernet, Fast Ethernet, Gigabit Ethernet, Wireless LAN"s

UNIT III:

Network Layer: Inter-networks, Addressing, Network layer Protocols – ARP, IPv4, IPv6,

UNIT IV:

Transport Layer: Process- to- Process delivery, Congestion and Control, Quality of service (QOS) and techniques to improve QOS.

Security: Introduction, Symmetric- key cryptography, Public key cryptography.

UNIT V:

Domain Name System-domain name space, distribution of name space, DNS in Internet Electronic mail, SMTP, File Transfer, FTP, HTTP, World Wide Web.

Text book:

1. Data communication and Computer Networks by Forozoun 3rd edition.

REFERENCE BOOKS:

1. Andrew S. Tanenbaum, "Computer Networks", Fourth Edition, 2003
2. Computer Networks by Bhushan Trivedi, Oxford University Press
3. James F. Kuross, Keith W. Ross, "Computer Networking, A Top-Down Approach Featuring the Internet", Third Edition, Addison Wesley, 2004.
4. Nader F. Mir, "Computer and Communication Networks", Pearson Education, 2007
5. Comer, "Computer Networks and Internets with Internet Applications", Fourth Edition, Pearson Education, 2003.
6. William Stallings, "Data and Computer Communication", Sixth Edition, Pearson VI, 2000

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

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CBCS – BSc(CA) - III YEAR - SEMESTER-VI
Paper-VII: Elective-I(C)
COMPUTER NETWORKS
MODEL QUESTION PAPER

Time: 3 Hours

Max. Marks : 75

Section-A

*Answer any **FIVE** of the following Questions:*

(5 x 5= 25 Marks)

1. What is Computer Network? What are its advantages?
2. Explain about LAN, MAN, WAN?
3. What is Error Detection and Error Correction? Explain
4. Explain about Fast Ethernet
5. What is Addressing? Explain
6. Explain about responsibilities of Network layer
7. What is Congestion? Explain about different congestion control techniques
8. Explain about process-to-process delivery of transport layer
9. Explain about FTP
10. Explain about SMTP

Section - B

Answer any FIVE of the following Questions

(5 × 10 =50 Marks)

11. Explain about different layers of OSI model
12. Explain about Different Guided media
13. Explain about GO-Back-N ARQ protocol
14. Explain about Bluetooth Technology
15. Explain about format of IPV4
16. What is ARP? Explain
17. Explain about different techniques to improve QOS?
18. What is Cryptography? What are different types of cryptography? Explain about public-key cryptography?
19. Explain about HTTP and WWW
20. What is DNS? Explain

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

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B.Sc.(Computer Applications) Syllabus Under CBCS
(with effect from 2016-'17)

III YEAR VI SEMESTER
(Cluster A) Paper-VIII : Elective-II-1
E-COMMERCE APPLICATIONS

Unit-I:

Electronic Commerce: Definition, types, advantages and disadvantages, E-Commerce transaction on World Wide Web. Electronic Market-Online shopping, Three models of Electronic Market - E-Business.

Unit-II:

Supply Chain Management: Definition, Benefits, goals, functions, characteristics, Strategies of SCM, Electronic Data Interchange (EDI): Definition, benefits of EDI, applications, advantages and limitations, EDI Model.

Unit-III:

Electronic Payment Systems: Types of EPS- traditional payment system and modern payment system, electronic cash, steps for electronic payment, payment security - E-Security- secure electronic transaction, secure-socket layer.

UNIT – IV:

Introduction to Scripting: JavaScript Introduction - Simple Program - Obtaining User Inputs with Prompt Dialogs – Operators: Arithmetic - Relational Operators - Logical Operators - Assignment Operators - Increment and Decrement Operators.

JavaScript – Control Statements I: Introduction - if Statement – if...else Statement - switch Statement

UNIT – V:

JavaScript – Control Statements II: Introduction - for Repetition Statement - while Repetition Statement - do...while Repetition Statement - break and continue Statements – break and continue Statements

Reference Books:

- 1) Kalakotia, Whinston, Frontiers of Electronic Commerce, Pearson Education
- 2) H. M. Deitel, P. J. Deitel, A. B. Goldberg, Internet & World Wide Web – How to Program, Pearson Education (Third Edition)
- 3) Bhaskar Bharat, Electronic Commerce - Technologies & Applications, TMH
- 4) Loshin Pete, Murphy P.A, Electronic Commerce, Jaico Publishing Housing.
- 5) Murthy, E-Commerce, Himalaya Publishing.
- 6) M.M. Oka, E-Commerce, EPH

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

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CBCS – BA(CA)/BCom(CA)/BSc(CA) - III YEAR - SEMESTER-VI
E-COMMERCE APPLICATIONS
MODEL QUESTION PAPER

Time: 3 Hours

Max. Marks : 75

Section-A

Answer any FIVE of the following Questions:

(5 x 5= 25 Marks)

1. Write about transaction in world wide web
2. Write about e-business
3. Explain applications of EDI
4. Explain about characteristics of supply chain management
5. Write about electronic cash
6. Explain secure socket layer
7. Briefly explain about increment operator used in Javascript
8. Explain about switch statement
9. Explain break statement with an example
10. Write about for statement with an example

Section - B

Answer any FIVE of the following Questions

(5 × 10 =50 Marks)

11. What is e-commerce? Explain advantages of e-commerce.
12. Write about e-commerce models.
13. Write in detail about SCM
14. Explain benefits of EDI
15. Write in detail about different types of electronic payment system
16. Explain about payment security
17. Explain about input statement in Javascript with an example
18. Write about decision making statements in Javascript
19. Explain about while statement with an example
20. Explain how Javascript is implemented in a HTML program

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

Vikrama Simhapuri University::Nellore
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(with effect from 2016-'17)

III YEAR VI SEMESTER
(Cluster A) Paper-VIII : Elective-II-2
DATABASE MANAGEMENT SYSTEM

Unit-I:

Overview of Database Management System: Introduction, Data and Information, Database, Database Management System, Objectives of DBMS, Evolution of Database Management Systems, Classification of Database Management System.

Unit-II:

File-Based System, Drawbacks of File-Based System, Advantages of DBMS, Services of DBMS, Components of Database System, CODD'S Rules
The Relational Database Model: Relational Set Operators, Relationships within the Relational Database

Unit-III:

Entity-Relationship Model: Introduction, The components of an Entity-Relationship model, entities, attributes, relationships, Classification of Entity Sets, Attribute Classification, Relationship Degree, Relationship Classification. Normalization, Normal forms (1NF,2NF,3NF)

Unit-IV:

Structured Query Language: Introduction, Types of Commands in SQL, Data types in SQL, SQL operators (Arithmetic, Relational, Logical), Data Definition Language (DDL), Data Manipulation Language, Table Modification, Table Truncation, Select command, Aggregate Functions

Unit-V:

PL/SQL: Introduction, Structure of PL/SQL program, PL/SQL Data Types, PL/SQL operators, Steps to Create a PL/SQL Program, Control Structures: conditional control statements, Iterative Control statements

Reference Books:

1. Paneerselvam: Database Management Systems, PHI.
2. David Kruglinski, Osborne, Data Management System McGraw Hill Publication.
3. Godeon C. EVEREST, Database Management – McGraw Hill Book Company.
4. Bipin C. Desai, "An Introduction to Database Systems", Galgotia Publications.
5. Korth, Database Management systems.
6. Navathe, Database Management systems.

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

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CBCS – BA(CA)/BCom(CA)/BSc(CA) - III YEAR - SEMESTER-VI
DATABASE MANAGEMENT SYSTEM
MODEL QUESTION PAPER

Time: 3 Hours

Max. Marks : 75

Section-A

Answer any FIVE of the following Questions:

(5 x 5= 25 Marks)

1. Write about data and information?
2. Explain objectives of DBMS
3. Write various demerits of file based system
4. Explain about components of database system
5. What is ER model? Explain about entities.
6. Write about Relationship degree
7. Briefly explain about SQL operators
8. Explain about table truncation with an example
9. Illustrate how to develop a PL/SQL program
10. Explain about if..else statement in PL/SQL

Section - B

Answer any FIVE of the following Questions

(5 × 10 =50 Marks)

11. Write about Evolution of DBMS
12. Explain about types of database managements systems
13. Write about Codd's rules
14. Explain various advantages of database systems
15. Write in detail about components of entity relationship model
16. Explain about 1NF and 2NF
17. Write about data definition commands in SQL
18. Explain INSERT and UPDATE commands in SQL
19. Explain the structure of PL/SQL program
20. Write about looping statements used in PL/SQL

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

Vikrama Simhapuri University::Nellore
B.Sc.(Computer Applications) Syllabus Under CBCS
(with effect from 2016-'17)

III YEAR VI SEMESTER
(Cluster B) Paper-VIII : Elective-II-1
VISUAL BASIC PROGRAMMING

UNIT – I

Object Oriented Programming : Introduction to OOPS – Basic Concepts – Objects and Classes – Concepts of Inheritance. Encapsulation and Polymorphism.
Fundamentals Of Visual Basic : Introduction – Features of VB – VB Editions – Controls – Properties – Events – Methods.

UNIT – II

Application Window
Project Explorer – The Properties Window – Tool Box: Text Box Control – Command Button – Check Box – The line and shape controls – Menu Bar – Tool bars – Tool box – Project explorer window – Properties window – Object browser – Form Designer – Code editor window – Form layout window

UNIT-III:

Forms and controls:
Setting form properties – Working with Properties Window – Name – Caption – Picture – The Controls box – Min button and Max button – Movable – Border style – Font – properties
Form methods: Move, Graphic methods, Show method
Form Events - Working with controls

UNIT – IV

Variables in VB: Declaring variables – Data types – Constants – Conversion – Arrays
Writing Code in VB: The code window – Subroutine – control Structures in VB – Performing Loops in VB.

UNIT V

Arrays: Definition, one dimensional and two dimensional arrays, declaring array, storing values in an array
Menus: Menu convention – creating menus in VB

TEXT BOOKS:

1. PROGRAMING WITH VISUAL BASIC – MOHAMMED AZAM – Vikas publishing house Pvt.Ltd. – New Delhi.
2. OBJECT ORIENTED PROGRAMING – E. BALAGURUSWAMY – Tata McGraw – Hill Publishing Company Limited – New Delhi.

REFERENCE BOOKS:

1. 'VISUAL BASIC 6.0 PROGRAMMING ' – Content Development Group – Tata McGraw – Hill Publishing Company Limited – 2002 – New Delhi
2. 'INTRODUCTION TO OOP AND VB' – V.K.JAIN – Vikas Publishing House – New Delhi
3. 'VISUAL BASIC 6' – PAUL SHERIEF –PRENTICE HALL OF INDIA Pvt. Ltd – New Delhi.
4. 'TEACH YOURSELF VISUAL BASIC 6' –SCOTT WARNER - Tata McGraw – Hill Publishing Company Limited – New Delhi.
5. "USING VISUAL BAISC 6" – Brain Siler and Jeff Spotts – Prentice Hall Of India Limited – New Delhi – Eleventh Edition (2002).

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE
CBCS – BSc(CA) - III YEAR - SEMESTER-V
(Cluster B) Paper-VIII : Elective-II-1
VISUAL BASIC PROGRAMMING
MODEL QUESTION PAPER

Time: 3 Hours

Max. Marks : 75

Section-A

Answer any FIVE of the following Questions:

(5 x 5= 25 Marks)

1. Write about classes and objects.
2. Briefly explain Visual Basic editions.
3. Define project explorer window
4. Explain Form Designer
5. Write about forms and controls.
6. What is a method? Explain any three form methods
7. What is a variable? Explain how to declare variables in VB
8. Explain constants in Visual Basic
9. Define an array. Write about declaring an array
10. What is menu? Explain

Section - B

Answer any FIVE of the following Questions

(5 × 10 =50 Marks)

11. Write about basic concepts of OOPS
12. Write in detail about features of VB
13. What is tool box? Explain various tools in tool box
14. Write about text box control in VB
15. Explain how you will work with properties window.
16. Write about various form events used in Visual Basic.
17. Explain various data types used in Visual Basic
18. Write about looping statements in VB
19. Briefly explain menu creation in Visual Basic
20. Explain in detail about creating a MDI form.

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

III YEAR VI SEMESTER
(Cluster B) Paper-VIII : Elective-II-2
PHP (PERSONAL HOME PAGE)

UNIT - I

The Building Blocks of PHP

What is PHP? - Variables - Data Types - Operators and Expressions - Constants
Flow Control Functions in PHP
Switching Flow - Loops - Code Blocks and Browser Output

UNIT - II

Working with Functions

What Is a Function - Calling Functions - Defining a Function - Returning Values from User-Defined Functions - Variable Scope - Saving State Between Function Calls with the static Statement - Arguments - Testing for the Existence of a Function

UNIT - III

Working with Arrays

What Are Arrays - Creating Arrays – Array Related Constructs and Functions

Working with Objects

Creating an Object - Object Inheritance

UNIT - IV

Working with Strings, Dates, and Time

Formatting Strings - Investigating Strings - Manipulating Strings

Using Date and Time Functions - Date, and Time Functions - Other String,

UNIT - V

Working with Forms

Creating a Simple Input Form - Accessing Form Input with User-Defined Arrays - Combining HTML and PHP Code on a Single Page - Using Hidden Fields to Save State - Redirecting the User - Sending Mail on Form Submission - Working with File Uploads

Text books:

1. Sams Teach Yourself PHP, MySQL, and Apache All in One, Fifth Edition - Meloni, Julie C. 2012 by Pearson Education

Reference Book

1. Visual QuickStart Guide - PHP for the Web, Fourth Edition - Larry Ullman
2. PHP Bible, Tim Converse Joyce Park, 2nd Edition, Wiley
3. Beginning PHP4, Wanky Choi, Allan Kent, Chris Lea, Ganesh Prasad, Chris Ullman
Wrox publications

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

VIKRAMA SIMHAPURI UNIVERSITY :: NELLORE
CBCS – BSc(CA) - III YEAR - SEMESTER-V
(Cluster B) Paper-VIII : Elective-II-2
PHP (PERSONAL HOME PAGE)
MODEL QUESTION PAPER

Time: 3 Hours

Max. Marks : 75

Section-A

Answer any FIVE of the following Questions:

(5 x 5= 25 Marks)

1. Write about variables used in PHP
2. Illustrate constants in PHP
3. Explain defining a function.
4. Write about returning values from a function
5. What are arrays? Explain
6. Explain how to create an object in PHP
7. Define String. Write about formatting strings
8. Write any five date functions with examples
9. What is a form? Explain form input
10. Explain how to send a mail on form submission.

Section - B

Answer any FIVE of the following Questions

(5 × 10 =50 Marks)

11. Explain various data types used in PHP
12. Write about various loop statements.
13. What is a function? Explain with an example
14. Write about scope of variables
15. Explain how you will create arrays in PHP
16. Write about working with object in PHP
17. Explain how to manipulate strings with an example
18. Write about time functions with an example
19. Briefly explain how to combine HTML and PHP code on a single page
20. Explain various form elements in PHP

Instruction to Paper Setter:

Two questions must be given from each unit in Section-A and Section-B

PROJECT & VIVA-VOCE

The objective of the project is to motivate them to work in emerging/latest technologies, help the students to develop ability, to apply theoretical and practical tools/techniques to solve real life problems related to industry, academic institutions and research laboratories.

The project is of 5 hours/week for one (semester VI) semester duration and a student is expected to do planning, analyzing, designing, coding, and implementing the project. The initiation of project should be with the project proposal. The synopsis approval will be given by the project guides.

The project proposal should include the following:

- Title
- Objectives
- Input and output
- Details of modules and process logic
- Limitations of the project
- Tools/platforms, Languages to be used
- Scope of future application

The Project work should be either an individual one or a group of not more than three members and submit a project report at the end of the semester. The students shall defend their dissertation in front of experts during viva-voce examinations.

EVALUATION OF PROJECT

Project Work – 3 Credits

Dissertation – 2 Credits

*Whole Board
B.Sc. Semester VI*