I YEAR II SEMESTER BSc MPCs SYLLABUS

SRI RAMAKRISHNA DEGREE COLLEGE (AUTONOMOUS)

NANDYAL

English Syllabus-Semester-II

English Praxis Course-II

A Course in Reading & Writing Skills

Learning Outcomes

By the end of the course the learner will be able to :

- Use reading skills effectively
- Comprehend different texts
- Interpret different types of texts
- Analyse what is being read
- Build up a repository of active vocabulary
- Use good writing strategies
- Write well for any purpose
- Improve writing skills independently for future needs

I. UNIT
Prose	: 1. How to Avoid Foolish Opinions	Bertrand Russell
Skills	: 2. Vocabulary: Conversion of Words	
	: 3. One Word Substitutes	
	: 4. Collocations	

II. UNIT
Prose	: 1. The Doll's House	Katherine Mansfield
Poetry	: 2. Ode to the West Wind	P B Shelley
Non-Detailed Text	: 3. Florence Nightingale	Abrar Mohsin
Skills	: 4. Skimming and Scanning	

III. UNIT
Prose	: 1. The Night Train at Deoli	Ruskin Bond
Poetry	: 2. Upagupta	Rabindranath Tagore
Skills	: 3. Reading Comprehension	
	: 4. Note Making/Taking	

IV. UNIT
Poetry	: 1. Coromandel Fishers	Sarojini Naidu
Skills	: 2. Expansion of Ideas	
	: 3. Notices, Agendas and Minutes	

V.UNIT
Non-Detailed Text	: 1. An Astrologer's Day	R K Narayan
Skills	: 2. Curriculum Vitae and Resume	
	: 3. Letters	
	: 4. E-Correspondence	

బి.ఏ., బి.కాం., బి.యస్.సి., తదితర ప్రోగ్రాములు

అంశం: జనరల్ తెలుగు   సెమిస్టర్-2

కోర్సు-2 : ఆధునిక తెలుగు సాహిత్యం

యూనిట్ల సంఖ్య:5   పీరియడ్ల సంఖ్య:60

✦ అభ్యసన ఫలితాలు:-

ఈ కోర్సు విజయవంతంగా ముగించాక, విద్యార్థులు క్రింది అభ్యసన ఫలితాలను పొందగలరు.

1. ఆంగ్లభాష ప్రభావం కారణంగా తెలుగులో వచ్చిన ఆధునిక సాహిత్యాన్ని, దాని విశిష్టతను గుర్తిస్తారు.

2. సమకాలీన ఆధునిక సాహిత్య ప్రక్రియలైన "వచన కవిత్వం, కథ, నవల, నాటకం, విమర్శ"లపై అవగాహన పొందుతారు.

3. భావకవిత, అభ్యుదయ కవితాలక్షణాలను గూర్చిన జ్ఞానాన్ని పొందుతారు.అస్తిత్వవాద ఉద్యమాలపుట్టుకను, ఆవశ్యకతను గుర్తిస్తారు.

4. కథాసాహిత్యం ద్వారా సామాజిక చైతన్యాన్ని పొందుతారు. సిద్ధాంతాల ద్వారా కాకుండా, వాస్తవ పరిస్థితులను తెలుసుకోవడం ద్వారా సిద్ధాంతాన్ని సమీక్షించగలరు.

5. ఆధునిక తెలుగు కల్పనాసాహిత్యం ద్వారా సామాజిక, సాంస్కృతిక,రాజకీయ చైతన్యాన్ని పొందుతారు.

పాఠ్య ప్రణాళిక

యూనిట్–I : ఆధునిక కవిత్వం

1. ఆధునిక కవిత్వం– పరిచయం

2. కొండవీడు   – దువ్వూరి రామిరెడ్డి

           ('కవికోకిల' గ్రంథావళి–ఖండకావ్యాలు–నక్షత్రమాల సంపుటి నుండి)

3. మాతృసంగీతం   – అనిసెట్టి సుబ్బారావు   ('అగ్నివీణ' కవితాసంపుటి నుండి)

4. 'తాతకో నూలుపోగు'   – బండారు ప్రసాదమూర్తి ('కలనేత' కవితాసంపుటి నుండి)

యూనిట్–II : కథానిక

5. తెలుగు కథానిక – పరిచయం

6. భయం (కథ)   – కాళీపట్నం రామారావు

7. స్వేదం ఖరీదు....? – (కథ)   – రెంటాల నాగేశ్వరరావు

యూనిట్–III : నవల

8. తెలుగు 'నవల'   – పరిచయం

9. రథచక్రాలు (నవల) – మహీధర రామ్మోహన రావు (సంక్షిప్త ఇతివృత్తం మాత్రం)

10. రథచక్రాలు (సమీక్షా వ్యాసం)   – డా॥ యల్లాప్రగడ మల్లికార్జునరావు

యూనిట్–IV: నాటకం

11. తెలుగు 'నాటకం' – పరిచయం

12. యక్షగానము (నాటిక)   – ఎం.వి.ఎస్. హరనాథరావు.

13. "అపురూప కళారూపాల విధ్వంసదృశ్యం 'యక్షగానము' (సమీక్షా వ్యాసం)"

    –డా॥కందిమళ్ళసాంబశివరావు

యూనిట్–V: విమర్శ

14. తెలుగు సాహిత్య విమర్శ – పరిచయం

15. విమర్శ–స్వరూప స్వభావాలు; ఉత్తమ విమర్శకుడు–లక్షణాలు

ఆధార గ్రంథాలు/వ్యాసాలు:

1. ఆధునిక కవిత్వం-పరిచయం   : చూ. 'దృక్పథాలు' పుట 1-22, ఆచార్య ఎస్వీ. సత్యనారాయణ
2. తెలుగు కథానిక-పరిచయం   : చూ. మన నవలలు-మన కథానికలు, పుట 118-130,
                             ఆచార్య రాచపాళెం చంద్రశేఖర రెడ్డి
3. తెలుగు నవల-పరిచయం   : చూ. నవలాశిల్పం, పుట 1-17, వల్లంపాటి వెంకటసుబ్బయ్య
4. తెలుగు నాటకం-పరిచయం   : చూ. తెలుగు నాటకరంగం, పుట 17-25 ఆచార్య ఎస్.గంగప్ప
5. తెలుగుసాహిత్య విమర్శ-పరిచయం: చూ.తెలుగుసాహిత్య విమర్శ-నాడు,నేడు పుట 213-217
   తెలుగువాణి, అయిదవ అఖిలభారత తెలుగు మహాసభల ప్రత్యేక సంచిక
                             ఆచార్య జి.వి.సుబ్రహ్మణ్యం
6. నూరేళ్ళ తెలుగు నాటక రంగం   – ఆచార్య మొదలి నాగభూషణశర్మ
7. నాటకశిల్పం   – ఆచార్య మొదలి నాగభూషణశర్మ
8. సాంఘిక నవల-కథన శిల్పం   – ఆచార్య సి.మృణాళిని.

✦ సూచించబడిన సహపాఠ్య కార్యక్రమాలు:

1. ఆధునిక కవిత్వానికి సంబంధించిన కొత్త కవితలను/అంశాలను ఇచ్చి, విద్యార్థులచేత
   వాటిమీద అసైన్మెంట్లు రాయించడం
2. పాఠ్యాంశాలకు సంబంధించిన విషయాలపై వ్యాసాలు రాయించడం (సెమినార్/అసైన్మెంట్)
3. తెలుగు సాహిత్యంలోని ప్రసిద్ధ కథలపై, కవితలపై సమీక్షలు రాయించడం.
4. ఆధునిక పద్యనిర్మాణ రచన చేయించడం.
5. విద్యార్థులను బృందాలుగా విభజించి, నాటకలపై/నవలలపై సమీక్షలు రాయించడం.
6. సాహిత్యవ్యాసాలు సేకరించడం, బృందచర్చ నిర్వహించడం, క్షేత్రపర్యటనలు.
7. ప్రసిద్ధుల విమర్శావ్యాసాలు చదివించి, వాటిని విద్యార్థుల సొంత మాటల్లో రాయించడం.
8. పాఠ్యాంశాలపై స్వీయ విమర్శావ్యాసాలు రాయించడం.

✦ప్రశ్నపత్ర నమూనా ✦
అ-విభాగము

సంక్షిప్త సమాధాన ప్రశ్నలు – ప్రతి యూనిట్ నుంచి తప్పనిసరిగా ఒక ప్రశ్న ఇస్తూ, మొత్తం ఎనిమిది ౹ పశ్నలు ఇచ్చి, ఐదింటికి సమాధానం రాయమనాలి.   5×5=25 మా.

ఆ-విభాగము

వ్యాసరూప సమాధాన ప్రశ్నలు-ప్రతి యూనిట్ నుంచి తప్పనిసరిగా రెండు ప్రశ్నలు ఇచ్చి ఒక ప్రశ్నకు సమాధానం రాయమనాలి. మొత్తం ప్రశ్నలు 5.   5×10=50 మా.

✦ మాదిరి ప్రశ్నాపత్రం ✦

అ-విభాగము

క్రింది వానిలో ఐదింటికి సంక్షిప్త సమాధానాలు రాయండి.

ప్రతి సమాధానానికి 5 మార్కులు.   5×5=25 మా.

1. కొండవీడు   5. కథానిక
2. తెలుగు నవల   6. విమర్శ
3. తెలుగు నాటకం   7. అనిసెట్టి సుబ్బారావు
4. ఆధునిక కవిత్వం   8. కాళీపట్నం రామారావు

ఆ-విభాగము

క్రింది వానిలో అన్ని ప్రశ్నలకు సమాధానాలు రాయండి.

ప్రతి సమాధానానికి 10 మార్కులు.   5×10=50 మా.

9. ఆధునిక కవిత్వ ఆవిర్భావ వికాసాలను వివరించండి.

  (లేదా)

  కొండవీడులో దువ్వూరి రామిరెడ్డి గారి సందేశాన్ని వివరించండి.

10. తెలుగు కథానికను పరిచయం చేయండి.

  (లేదా)

  భయం కథలోని రచయిత సందేశాన్ని రాయండి.

11. సాహిత్య ప్రక్రియగా నవల స్థానాన్ని విమర్శించండి.

  (లేదా)

  రథచక్రాలు నవలలోని ఇతివృత్తాన్ని విశ్లేషించండి.

12. తెలుగు నాటక పరిణామాన్ని గూర్చి రాయండి.

  (లేదా)

  యక్షగానం నాటికపై సమీక్షా వ్యాసం రాయండి.

13. తెలుగు సాహిత్య విమర్శను పరిచయం చేయండి

  (లేదా)

  విమర్శ స్వరూప స్వభావాలను వివరిస్తూ, ఉత్తమ విమర్శకుని లక్షణాలను రాయండి.

Sri Ramakrishna Degree College(A) :Nandyal
Dept. Of Sanskrit
First Year, Semester -II, Syllabus

प्रथमविभागः (Unit-I) प्राचीनपद्यकाव्यम्

1. इन्दुमती स्वयंवरम्

2.शिष्येभ्योदीश्राप्रदानम्

द्वितीयविभाग: (Unit II) आधुनिक पद्यकाव्यम्

3. गंगावतरणं

4.मोहापनोदः

5.वन्देकाश्मीरभारतं

तृतीया विभाग: (Unit III) गद्यकाव्यम्

6. अवन्तिसुन्दरीकथा

7. चारुदत्तचरितं

चतुर्थविभागः (Unit IV) व्याकरणं

8.अजन्तशब्दाः

(नद, तन, वधू,मातृ,वन,फल,वारि,मधु)

9.धातवः
(यध्,इष,लिख,कृ,क्रीञ्,कथ,रमु,वदी)

पञ्चमविभागः (Unit V) व्याकरणं

10.सन्धयःहल् सन्धिः,विसर्गसन्धिः)

11.समासाः (अव्ययीभावः, बहुव्रीहिः)

ZOOLOGY MODEL PAPER FOR II SEMESTER
ZOOLOGY - PAPER - II
ANIMAL DIVERSITY - CHORDATES

Time: 3 hrs   Max. Marks: 60

Section -I

Answer any Four of the following.

Write a note and Draw labeled diagrams wherever necessary

1. Salient features of Urochordata   4x5=20
2. Amphioxus
3. Compare the characters of Petromyzon and Myxine
4. Fish scales
5. Dipnoi fishes
6. Salient features of Apoda
7. Chelonia
8. Prototheria

Section-II

Answer any four of the following.

Write an essay and Draw labeled diagrams wherever necessary

9. Explain the life history of Herdmania   4x10=40

OR

  Write an essay on Migration in fishes

10. Describe the structure of heart of Scoliodon

OR

 Describe the brain of Rana hexadactyla

11. Write an essay on Migration in Birds

OR

  Explain the respiratory system of Columba livia.

12. Write an essay on flight adaptations in birds

OR

  Write an essay on Dentition in mammals.

ZOOLOGY SYLLABUS FOR II SEMESTER
PAPER – II: ANIMAL DIVERSITY – BIOLOGY OF CHORDATES

Unit - I

1.1 General characters and classification of Chordata upto classes

1.2 Protochordata- Salient features of Cephalochordata , Affinities of Cephalochordata.

1.3 Salient features of Urochordata

1.4 Structure and life history of Herdmania

1.5 Retrogressive metamorphosis –Process and Significance

Unit - II

2.1 Cyclostomata, General characters, Comparison ofPetromyzon and Myxine

2.2 Pisces : General characters of Fishes

2.3 Scoliodon: External features, Digestive system, Respiratory system, Structure and function of Heart

2.4 Migration in Fishes

2.5 Types of Scales

2.6 Dipnoi

Unit - III

3.1 General characters of Amphibia

3.2 Classification of Amphibiaup to orders with examples.

3.3 Ranahexadactyla: External features, Respiratory system, Structure and function of Heart, structure and functions of the Brain

3.4 Reptilia: General characters of Reptilia, Classification of Reptilia upto orders withexamples

3.5 Calotes:External features, Respiratory system, Structure and function of Heart, structure and function of Brain

Unit - IV

4.1 Aves General characters of Aves

4.2 Columba livia: External features, Digestive system, Respiratory system, structure and function of Brain

4.3 Migration in Birds

4.4 Flight adaptation in birds

Unit - V

5.1 General characters of Mammalia

5.2 Classification of Mammalia upto sub - classes with examples

5.3 Dentition in mammals

Semester /Chemistry – 2   Course II – (Organic & General Chemistry)

ORGANIC CHEMISTRY

UNIT-I

Recapitulation of Basics of Organic Chemistry Carbon-Carbon sigma bonds (Alkanes and Cycloalkanes) 12h

General methods of preparation of alkanes- Wurtz and WurtzFittig reaction, Corey House synthesis, physical and chemical properties of alkanes, Isomerism and its effect on properties, Free radical substitutions; Halogenation, concept of relative reactivity v/s selectivity. Conformational analysis of alkanes (Conformations, relative stability and energy diagrams of Ethane, Propane and butane).General molecular formulae of cycloalkanes and relative stability, Baeyer strain theory, Cyclohexane conformations with energy diagram, Conformations of monosubstituted cyclohexane.

UNIT-II

Carbon-CarbonpiBonds(AlkenesandAlkynes) 12h

Generalmethodsofpreparation,physicaland chemicalproperties.Mechanism of E1, E2, E1 cbreactions,SaytzeffandHoffmanneliminations,ElectrophilicAdditions,mechanism(Markownikoff/ Antimarkownikoff addition) with suitableexamples,,synandanti-addition;additionofH2,X2, HX. oxymeruration- 9 demercuration, hydroboration-oxidation,ozonolysis,hydroxylation, Diels Alderreaction,1,2- and1,4-addition reactions in conjugateddienes. Reactions of alkynes;acidity,electrophilic andnucleophilicadditions,hydrationt of ormcarbonyl compounds, Alkylationof terminalalkynes.

UNIT-III
Benzene and its reactivity   12h

Concept of aromaticity, Huckel's rule - application to Benzenoid (Benzene, Naphthalene) and Non - Benzenoid compounds (cyclopropenylcation, cyclopentadienyl anion and tropyliumcation)
Reactions - General mechanism of electrophilic aromatic substitution, mechanism of nitration, Friedel- Craft's alkylation and acylation. Orientation of aromatic substitution - ortho, para and meta directing groups. Ring activating and deactivating groups with examples (Electronic interpretation of various groups like NO2 and Phenolic). Orientation of (i) Amino, methoxy and methyl groups (ii) Carboxy, nitro, nitrile, carbonyl and sulphonic acid groups
(iii) Halogens

(Explanation by taking minimum of one example from each type)

GENERAL CHEMISTRY

UNIT-IV

1. Surface chemistry and chemical bonding Surface chemistry Colloids- Coagulation of colloids- Hardy-Schulze rule. Stability of colloids,Protection of Colloids, Gold number.

Adsorption-Physical and chemical adsorption, Langmuir adsorption isotherm, applications of adsorption.

2. Chemical Bonding 6h

Valence bond theory, hybridization, VB theory as applied toClF_3,$Ni(CO)_4$, 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). 10

3. HSAB 2h

Pearson's concept, HSAB principle & its importance, bonding in Hard-Hard and Soft-Soft combinations.

UNIT-V

Stereochemistry of carbon compounds   10h

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, R,S and E,Z- configuration with examples.

Definition of Racemic mixture – Resolution of racemic mixtures (any 3 techniques)

Co-curricular activities and Assessment Methods ContinuousEvaluation:Monitoringtheprogressof student'slearning ClassTests,WorksheetsandQuizzes Presentations,ProjectsandAssignmentsandGroupDiscussions:Enhancescriticalthinkingskillsan d personality

Semester-endExamination:criticalindicatorofstudent'slearningandteachingmethodsadoptedby teachersthroughoutthesemester.

Time: 3 hours   Maximum Marks: 70M

PART- A

Answer any FIVE of the following questions. 5 X 4 = 20 M

1. Write different conformations of n-butane. Explain their relative stability..
2. Explain 1,2- & 1,4- addition reactions of conjugated dienes.
3. Explain the orientation effect of halogens on mono substituted benzene.
4. Explain the mechanism of E1CB elimination reaction.
5. Explain the structure of ClF3 by Valency Bond theory.
6. What are Hard & soft acids & bases? Explain with examples.
7. Draw the Wedge, Fischer, Newmann& saw-Horse representations for Tartaric acid.
8. Define Enantiomers and Diastereomers and give two examples for each.

PART- B

Answer ALL the questions. Each carries TEN marks 5 X 10 = 50 Marks

9 (i) Write the preparation of alkanes by Wurtz and Corey-House reaction.
(ii) Explain Halogenation of alkanes. Explain the reactivity and selectivity in free radical substitutions.

(or)

10 (i) Explain Baeyer Strain Theory
   (ii) Draw the conformations of Cyclohexane and explain their stability by drawing energy
        profile diagram.

11. (i) Write any two methods of preparation of alkenes.
    (ii) Explain the mechanism of Markownikiff and Anti-Markownikoff addition of HBr to alkene.

(or)

12. (i) Explain the acidity of 1-alkynes
    (ii) How will you prepare acetaldehyde and acetone from alkynes?
    (iii) Write alkylation reaction of terminal alkne.

13. Define Huckel rule of aromatic compounds. What are benzenoid and non- benzenoid aromatic
    compounds? Give examples.

(or)

14. Explain the mechanisms of Nitration and Friedel-Craft's alkylation of Benzene.

15. (i) Define Hardy-Schulze rule & Gold number.
    (ii) Differentiate Physisorption& Chemisorption. Explain Langmuir adsorption isotherm.

(or)

16. Construct the Molecular Orbital diagram for O2 and NO and explain their bond order and
magnetic property.

17. Define racemic mixture. Explain any two techniques for resolution of racemic mixture.

(or)

18.(i) Define Optical activity and Specific rotation.
    (ii) Draw the R- & S- isomers of Alanine, Glyceraldehyde.
   (iii) Write the E- & Z- isomers of 2-butene.

DATA STRUCTURES USING C

Semester	Course Code	Course Title	Hours	Credits
II	**C2**	**DATA STRUCTURES USING C**	**60**	**3**

Course Objectives

To introduce the fundamental concept of data structures and to emphasize the importance of various data structures in developing and implementing efficient algorithms.

Course Learning Outcomes:

Upon successful completion of the course, a student will be able to:

1. Understand available Data Structures for data storage and processing.
2. ComprehendData Structure and their real-time applications - Stack, Queue, Linked List, Trees and Graph
3. Choose a suitable Data Structures for an application
4. Develop ability to implement different Sorting and Search methods
5. Have knowledge onData Structures basic operations like insert, delete, search,update and traversal
6. Design and develop programs using various data structures
7. Implement the applications of algorithms for sorting, pattern matching etc

UNIT – I:

Introduction to Data Structures: Introduction to the Theory of Data Structures, Data Representation, Abstract Data Types, Data Types, Primitive Data Types, Data Structure and Structured Type, Atomic Type, Difference between Abstract Data Types, Data Types, and Data Structures, Refinement Stages

Principles of Programming and Analysis of Algorithms: Software Engineering, Program Design, Algorithms, Different Approaches to Designing an Algorithm, Complexity, Big „O‟ Notation, Algorithm Analysis, Structured Approach to Programming, Recursion, Tips and Techniques for Writing Programs in „C‟

UNIT – II:

Arrays: Introduction to Linear and Non- Linear Data Structures, One- Dimensional Arrays, Array Operations, Two- Dimensional arrays, Multidimensional Arrays, Pointers and Arrays, an Overview of Pointers

Linked Lists: Introduction to Lists and Linked Lists, Dynamic Memory Allocation, Basic Linked List Operations, Doubly Linked List, Circular Linked List, Atomic Linked List, Linked List in Arrays, Linked List versus Arrays

UNIT – III:

Stacks: Introduction to Stacks, Stack as an Abstract Data Type, Representation of Stacks through Arrays, Representation of Stacks through Linked Lists, Applications of Stacks, Stacks and Recursion
Queues: Introduction, Queue as an Abstract data Type, Representation of Queues, Circular Queues, Double Ended Queues- Deques, Priority Queues, Application of Queues

UNIT – IV:

Binary Trees: Introduction to Non- Linear Data Structures, Introduction Binary Trees, Types of Trees, Basic Definition of Binary Trees, Properties of Binary Trees, Representation of Binary Trees, Operations on a Binary Search Tree, Binary Tree Traversal, Counting Number of Binary Trees, Applications of Binary Tree

UNIT – V:
Searching and sorting: Sorting – An Introduction, Bubble Sort, Insertion Sort, Merge Sort, Searching – An Introduction, Linear or Sequential Search, Binary Search, Indexed Sequential Search
Graphs: Introduction to Graphs, Terms Associated with Graphs, Sequential Representation of Graphs, Linked Representation of Graphs, Traversal of Graphs, Spanning Trees, Shortest Path, Application of Graphs.
BOOKS:
1. "Data Structures using C", ISRD group Second Edition, TMH

2. "Data Structures through C", Yashavant Kanetkar, BPB Publications

3. "Data Structures Using C" Balagurusamy E. TMH

RECOMMENDED CO-CURRICULAR ACTIVITIES:

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

A. Measurable

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams))
4. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity))

B. General

1. Group Discussion
2. Others

RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Programming exercises,
4. Practical assignments and laboratory reports,
5. Observation of practical skills,
6. Individual and group project reports.
7. Efficient delivery using seminar presentations,
8. Viva voce interviews.
9. Computerized adaptive testing, literature surveys and evaluations,
10. Peers and self-assessment, outputs form individual and collaborative work

Semester	Course Code	Course Title	Hours	Credits
II	**C2-P**	DATA STRUCTURES USING C LAB	**30**	**2**

1. Write a program to read „N" numbers of elements into an array and also perform the following operation on an array
    a. Add an element at the begging of an array
    b. Insert an element at given index of array
    c. Update a element using a values and index
    d. Delete an existing element

2. Write a program using stacks to convert a given
    a. postfix expression to prefix
    b. prefix expression to postfix
    c. infix expression to postfix

3. Write Programs to implement the Stack operations using an array

4. Write Programs to implement the Stack operations using Liked List.

5. Write Programs to implement the Queue operations using an array.

6. Write Programs to implement the Queue operations using Liked List.

7. Write a program for arithmetic expression evaluation.

8. Write a program for Binary Search Tree Traversals

9. Write a program to implement dequeue using a doubly linked list.

10. Write a program to search an item in a given list using the following Searching Algorithms
    a. Linear Search
    b. Binary Search.

11. Write a program for implementation of the following Sorting Algorithms
    a. Bubble Sort
    b. Insertion Sort
    c. Quick Sort

12. Write a program for polynomial addition using single linked list

13. Write a program to find out shortest path between given Source Node and Destination Node in a given graph using Dijkstrar"s algorithm.

14. Write a program to implement Depth First Search graph traversals algorithm

15. Write a program to implement Breadth First Search graph traversals algorith

INFORMATION & COMMUNICATION TECHNOLOGY

Semester	Course Code	Course Title	Hours	Credits
I	**Life skill Course**	**INFORMATION & COMMUNICATION TECHNOLOGY**	**30**	**2**

Objectives:

This course aims at acquainting the students with basic ICT tools which help them in their day to day and life as well as in office and research.

Course outcomes: After completion of the course, student will be able to;

1. Understand the literature of social networks and their properties.
2. Explain which network is suitable for whom.
3. Develop skills to use various social networking sites like twitter, flickr, etc.
4. Learn few GOI digital initiatives in higher education.
5. Apply skills to use online forums, docs, spreadsheets, etc for communication, collaboration and research.
6. Get acquainted with internet threats and security mechanisms.

SYLLABUS:

UNIT-I: (08 hrs)

Fundamentals of Internet: What is Internet?, Internet applications,Internet Addressing – Entering a Web Site Address, URL–Components of URL, Searching the Internet, Browser –Types of Browsers,Introduction to Social   Networking: Twitter, Tumblr, LinkedIn, Facebook, flickr, Skype, yahoo, YouTube, WhatsApp .

UNIT-II:(08 hrs)

E-mail: Definition of E-mail -Advantages and Disadvantages –User Ids, Passwords, Email Addresses, Domain Names, Mailers, Message Components, MessageComposition, Mail Management.

G-Suite: Google drive, Google documents, Google spread sheets, Google Slides and Google forms.

UNIT-III:(10 hrs)

Overview of Internet security, E-mail threats and secure E-mail, Viruses and antivirus software, Firewalls, Cryptography, Digital signatures, Copyright issues.

What are GOI digital initiatives in higher education? (SWAYAM, SwayamPrabha, National Academic Depository, National Digital Library of India, E-Sodh-Sindhu, Virtual labs, e-acharya, e-Yantra and NPTEL).

RECOMMENDED CO-CURRICULAR ACTIVITIES: (04 hrs)

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

1.   Assignments(in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2.   Student seminars (on topics of the syllabus and related aspects (individual activity))
1.   Quiz andGroup Discussion
3.   Slip Test
4.   Try to solve MCQ's available online.
5.   Suggested student hands on activities :
   a. Create your accounts for the above social networking sites and explore them, establish a video conference using Skype.
   b. Create an Email account for yourself- Send an email with two attachments to another friend. Group the email addresses use address folder.
   c. Register for one online course through any of the online learning platforms like NPTEL, SWAYAM, Alison, Codecademy, Coursera. Create a registration form for your college campus placement through Google forms.

Reference Books :

1. In-line/On-line : Fundamentals of the Internet and the World Wide Web, 2/e – byRaymond Greenlaw and Ellen Hepp, Publishers : TMH
2. Internet technology and Web design, ISRD group, TMH.
3. Information Technology – The breaking wave, Dennis P.Curtin, Kim Foley, Kunai Sen and Cathleen Morin, TMH.

Revised CBCS w.e.f. 2020-21
SKILL DEVELOPMENT COURSES

Science Stream

Syllabus of
SOLAR ENERGY

Total 30 hrs (02h/wk),   *02 Credits & Max Marks: 50*

Learning Outcomes:
After successful completion of the course, students will be able to:
1. *Acquire knowledge onsolarradiation principles with respect to solar energy estimation.*
2. *Get familiarized with various collecting techniques of solar energy and its storage*
3. *Learn the solar photovoltaic technology principles and different types of solar cells for energy conversion and different photovoltaic applications.*
4. *Understand the working principles of several solar appliances like Solar cookers, Solar hot water systems, Solar dryers, Solar Distillation, Solar greenhouses*

SYLLABUS:
UNIT-I – Solar Radiation: **(6 hrs)**
Sun as a source of energy, Solar radiation, Solar radiation at the Earth's surface, Measurement of Solar radiation-Pyroheliometer, Pyranometer, Sunshine recorder, Prediction of available solar radiation, Solar energy-Importance, Storage of solar energy, Solar pond

UNIT-II – Solar Thermal Systems: **(10 hrs)**
Principle of conversion of solar radiation into heat, Collectors used for solar thermal conversion: Flat plate collectors and Concentrating collectors, Solar Thermal Power Plant, Solar cookers, Solar hot water systems, Solar dryers, Solar Distillation, Solar greenhouses.

UNIT-III – Solar Photovoltaic Systems: **(10 hrs)**
Conversion of Solar energy into Electricity - Photovoltaic Effect, Solar photovoltaic cell and its working principle, Different types of Solar cells, Series and parallel connections, Photovoltaic applications: Battery chargers, domestic lighting, street lighting and water pumping

Co-curricular Activities (Hands on Exercises): (04 hrs)
[Any four of the following may be taken up]
1. *Plot sun chart and locate the sun at your location for a given time of the day.*
2. *Analyse shadow effect on incident solar radiation and find out contributors.*
3. *Connect solar panels in series & parallel and measure voltage and current.*
4. *Measure intensity of solar radiation using Pyranometer and radiometers.*
5. *Construct a solar lantern using Solar PV panel (15W)*
6. *Assemble solar cooker*
7. *Designing and constructing photovoltaic system for a domestic house requiring 5kVA power*
8. Assignments/Model Exam.