



**I YEAR I SEMESTER BSc MECs SYLLABUS**

**SRI RAMAKRISHNA DEGREE COLLEGE (AUTONOMOUS)**

**NANDYAL**

# **SRI RAMAKRISHNA AUTONOMOUS DEGREE COLLEGE, NANDYAL**

**I B.A/B.Com/B.Sc. Courses**

**Semester-I**

**English Praxis Course-1 (2020-21 Regulations)**

---

## **Unit-1: Listening skills**

- 1. Importance of Listening**
- 2. Types of Listening**
- 3. Barriers to Listening**
- 4. Effective Listening**

## **Unit-2: Speaking skills**

- 1. Sounds of English : Vowels and consonants**
- 2. Word Accent**
- 3. Intonation**

## **Unit-3: Grammar**

- 1. Concord**
- 2. Modals**
- 3. Tenses**
- 4. Articles**
- 5. Prepositions**
- 6. Question tags**
- 7. Sentence Transformation ( Voice, Reported speech& Degrees of comparison)**
- 8. Error correction**

## **Unit-4: Writing skills**

- 1. Punctuation**
- 2. Spelling**
- 3. Paragraph writing**

## **Unit-5: Soft skills**

- 1. SWOC**
- 2. Attitude**
- 3. Emotional Intelligence**
- 4. Telephone Etiquette**
- 5. Interpersonal skills**

B.A/B.Com/B.Sc (Three years) Degree Examinations  
Model Question Paper  
1st year 1st semester Examination

Title of the paper: English Praxis Course-1

Time: 3 Hours

Max. Marks: 70

Section-A

1. Read the following passage carefully and answer the questions that follow:

5x1=5M

News is as old as Man. When we meet someone, we generally ask, "What is the News?" People in villages meet at a centre-(Racchabanda) to exchange news about others. News is linked to Geography, to time, to the character of the people, their needs and ambitions etc. News is an acronym for North, East, West and South.

News is not something that is spontaneous. It is manufactured first by the influential men and women in the society, second by the media-organization and third by the reporters. News reporters often use the word "story". Story is any narrative or descriptive article in a Newspaper. This word is most bandied between a News editor and a reporter.

1. Where do people of villages meet to exchange News?
2. Is News linked with the character of a person?
3. What are various aspects linked with News?
4. What is the term used by News reporter?
5. How the news is generally manufactured?

II. Fill in the blanks with suitable articles:

5x1=5M

1. Would you like \_\_\_\_\_ cup of coffee?
2. \_\_\_\_\_ apple a day keeps the doctor away.
3. What is \_\_\_\_\_ capital city of Australia?
4. It has been \_\_\_\_\_ honour to work for you.
5. \_\_\_\_\_ price of gas keeps rising

III. Fill in the blanks with suitable prepositions:

5x1=5M

1. My best friend lives \_\_\_\_\_ Italy.
2. Tourists come \_\_\_\_\_ boat.
3. He was disappointed \_\_\_\_\_ his results.
4. I hope to find a solution \_\_\_\_\_ my problem.
5. Can you see the poster \_\_\_\_\_ the wall.

IV. Fill in the blanks with the correct form of the verb given in the brackets:

5x1=5M

1. I \_\_\_\_\_ the newspaper every day. (read)
2. We \_\_\_\_\_ foot ball for one hour. (play)
3. Geetha \_\_\_\_\_ a dance recital at Ravindra Bharathi yesterday. (give)
4. Earthquakes were occurred in Bihar after we \_\_\_\_\_ the place. (leave)
5. Dolphins \_\_\_\_\_ in water. (live)

V. Match the following sentences with the correct question tags:

5x1=5M

- |                                  |     |                |
|----------------------------------|-----|----------------|
| 1) You are beautiful             | ( ) | a) won't he?   |
| 2) I didn't like these books     | ( ) | b) hasn't she? |
| 3) My father will read magazines | ( ) | c) aren't you? |

4) I am singing a song

( )

d) do I?

5) She has visited her parents

( )

e) aren't I?

VI. Correct the following sentences wherever necessary:

5x1=5M

1) I am suffering from fever since Monday.

2) One of my friends have gone to the Andamans.

3) Each of the candidates were interviewed.

4) He is an young research scholar.

5) Economics are a difficult subject.

VII. Rewrite the following as directed:

5x1=5M

1) Reckless driving causes many accidents. (Change it into passive voice)

2) He said, "I have passed the examination." (Change it into indirect speech)

3) Open the window. (Change it into passive voice)

4) Mohan said, "I don't believe you." (Change it into indirect speech)

5) Tirupathi is one of the most popular pilgrim towns. (Change it into positive degree)

### Section-B

VIII. Punctuate the following:

5M

i don't know what it is to see into the heart of a friend through that window of the soul the eye

IX. Write a paragraph by using the following hints given below and suggest a suitable title: 5M

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.

X. Answer any Two of the following questions:

2x5=10M

1) Write a note on the types of listening.

2) What are the barriers to listening?

3) Explain the strategies for effective listening.

XI. Answer any Three of the following questions:

3x5=15M

1) Mark the stress of the following words:

a) Absent b) preparation c) Herself d) beauty e) careful

2) Write a note on English Consonant sounds with examples

3) How can one develop Positive Thinking?

4) What are the benefits of SWOC analysis?

5) Why is phone etiquette important?

\*\*\*\*\*

# TELUGU Lexicenter - I

## పాఠ్య ప్రణాళిక

యూనిట్-1

రాజనీతి

- సస్యము

మహాభారతం-సభాపర్వం-ప్రథమాశ్వాసం-(26-57 పద్యాలు)

యూనిట్-II

దక్షయజ్ఞం

- సన్నెచోడుడు

కుమారసంభవం-ద్వితీయాశ్వాసం-(49-86 పద్యాలు)

యూనిట్-III

ధౌమ్య ధర్మోపదేశము

- తిక్కన

మహాభారతం-విరాటపర్వం-ప్రథమాశ్వాసం-(116-146) పద్యాలు

యూనిట్-IV

పలనాటి బెబ్బులి

- శ్రీనాథుడు (పలనాటి వీరచరిత్ర-ద్విపద కావ్యం పుట 108-112

'బాలచంద్రుడు భీమంబగు సంగ్రామం బొసర్చుట. (108).

..... వెలిగంది కుంది' (112) సం. అర్కిరాజు ఉమాకాంతం

ముద్రణ.వి.కె.స్వామి, బెజవాడ 1911.

యూనిట్-V

సీతారావణ సంవాదం

- మొల్ల

రామాయణము-సుందరకాండము-(40-87 పద్యాలు)

### ◆వ్యాకరణం

సంధులు: ఉత్ప, త్రిక, ద్రుతప్రకృతిక, నుగాగమ, ద్విరుక్తటకారాదేశ, యణాదేశ, వృద్ధి, శ్చుత్వ, జశ్వ, అనునాసిక సంధులు.

సమాసాలు: అవ్యయిభావ, తత్పురుష, కర్మధారయ, ద్వంద్వ, ద్విగు, బహుప్రీహి.

అలంకారాలు:

అర్థాలంకారాలు : ఉపమ, ఉత్పేక్ష, రూపక, స్వభావోక్తి, అర్థాంతరవ్యాస, అతిశయోక్తి.

శబ్దాలంకారాలు : అనుప్రాస (వృత్త్యనుప్రాస, ఛేకామప్రాస లాటానుప్రాస, అంత్యానుప్రాస)

ఛందస్సు

వృత్తాలు: ఉత్పలమాల, చంపకమాల, శార్దూలము, మల్లేభము;

జాతులు : కందం, ద్విపద; ఉపజాతులు : ఆటవెలది, తేటగీతి, సీసం మరియు ముత్యాలసరాలు

Semester End Examinations, B.A./B.Com/B.Sc.  
1<sup>st</sup> Year 1<sup>st</sup> Semester Examination 8677

General History

Time 3 hours

Max. Marks - 70

I క్రింది వానిలలో ఏకదానికొక ఉదాహరణ-చర్యను ప్రతిపాదనకు ఉదాహరించు వ్రాయండి?

అ) కడు జనువాడునై పురుషకార్యు దక్షుడైన మంత్రి పం 8  
 పరగ రాజపుత్రుల మహాధనవంతుల జీవిత వారితో  
 నాడబడి పక్షమేర్పడగ నుండకుగా దిన మెట్టి వారితో  
 గడుతొని చియతుండున జగన్నాథ గరవిము దుర్విషాసమున్

ఇ) స్థూల సముద్రతాండవ చతుర్భుజపాలకాక్షమాలకా  
 పాలకతీరకాక్షుక్ ప్రాణాధుల ప్రమథాధి నాథుల  
 బిలపరాక్రమం నిఖిల భీకరమూర్తుల వచ్చు రోలి గం  
 కాల సమేతులై భువనకంపముగా గణనాథు పాలితున్

II ఈ క్రింది వానిలో రెండింటికీ సందర్భసూచక వానిని వ్రాయండి 2x3 = 6

1. బలసాక్షి దినయ్యన ప్రయతగలము
2. రాముడెరిగె లంకకు రాగలండు?
3. చచ్చిన ప్రాకృత సోభిని మచ్చటన
4. ఆవశనిము నగ్గొనరించు నెడకు శత్రుండునన్

III క్రింది వానిలో రెండింటికీ సంగ్రహ సమాధానాల వ్రాయండి 2x5 = 10

- 1) బాలచంద్రుడెని యాస నలగామరాజు స్తునితుల భయపడిన విధమెట్టిది?
- 2) ఆనను నిందించిన సితను రావణుడు బదిరించిన విధమెట్టిది?
- 3) డివినిసల పట్ల రాజు వనివహరించవలసిన తీరును తెలపండి?
- 4) దక్షుని కిసు వెదుతుతూ ప్రమథనాథుల జీవిత పనులెవ?

- IV ఈ క్రింది వానిని ప్రశ్నలకు మూడంటికి సమగ్రంగా సమాధానాలు వ్రాయండి?
- 1) నారదుడు ధర్మరాజునకు తెలిపిన రాజనితని సమగ్రంగా తెలపండి  $3 \times 10 = 30$
  - 2) దక్షయజ్ఞం పాఠనిబాధ కథను వ్రాయండి
  - 3) దౌమనిడు వెంకటవలకు చేసిన ధర్మపదేశమును వివరించండి
  - 4) పలనాటి యుద్ధములు బాలచంద్రుని యుద్ధ కౌశలాన్ని వివరించండి
  - 5) సింహరావణ సంవాదాన్ని సమగ్రంగా వివరించండి
  - 6) నన్నయ కవిశారీరులను పోల్చి రాజనిత పాఠములు అవి ఎంత వరకు ప్రతిబంబిస్తూన్నాయో తెలపండి

- V క్రింది వానిని నాల్గంటికి విడదీసి వానికరణ కారణములు తెలుపండి
- 1) 1) దనుజాశవుడు 2) జగన్నుడు 3) వాణ్ణి పసేవ
  - 4) ఆభంగింకరము 5) శక్తకవలక్లి 6) కాలాగిని
  - 7) వాసువోరి 8) ఆదవసరము  $4 \times 1 = 4$

- VI క్రింది వానిని నాల్గంటికి విగ్రహవాక్యము సుమాన నామములను తెలుపండి
- 1) వనజగట్టుడు 2) అనఘుడు 3) దివానుకరిక్షము 4) భీమునివిధము  $4 \times 1 = 4$
  - 5) సురవరుడు 6) శ్రీలోకములు 7) అవలలిధరుడు 8) శ్రీపానలము

VII క్రింది పదానిలకు ఒక పదనింట్లు గల అలంకారాన్ని సూక్తింబ లక్షణి లక్షణ సమన్వయం చేయండి.  $1 \times 4 = 4$

1) వేడుకాణుముట్టి వెనుకొనగా శేవిత్  
 సగముచరికి దారు నవలి వోరి  
 నభ్రగజముమీది కాసహసెత్తుండు  
 వలెతి పాళె ప్రమథరాజి యోరవి

2) లోకాలోకములగు  
 చిక్కల యెల్ల నొక్క పొడవు నీకొని యెనొనా  
 నొకాశముడర్చి వచ్చె మ  
 పాకాళ మివోభయంకరాకారముతోన్

VIII ఈ క్రింది పదనిపాదాలకు ఒకదానికి గణవిభజన చేసి యెని సూక్తింబ అతి ప్రాచీన లక్షణములు వ్రాయుము.  $1 \times 4 = 4$

1. రామున్ గిముని జేప్పగిప్ప నగరా రాకెండు బింబాననా
2. వేణ్ణిక తెలుసన నొరులకు  
 మాణాడక యునికి వెను మనుజేంద్ర కడన్

SRI RAMAKRISHNA DEGREE COLLEGE(A) NANDYAL  
BA/B.com/B.sc/B.B.A SANSKRIT FIRST SEMESTER  
SYLLABUS 2020-21

प्राचीनसाहित्यं

1)आर्यपादुकाभिषेकः

2)यक्षप्रश्नाः

आधुनिकसाहित्यं

1)मेवाडराज्यस्थापनम्

2)विवेकानन्दसूक्तयः।

गद्यसाहित्यं

1)अत्युत्कटैःपापपुण्यैःइहैवफलमश्नुते

2)शूद्रकवीरवरकथा।

व्याकरणं

1)शब्दाः(देव,कवि,भानु,धातृ,पितृ,गो,रमा,मति)

2)धातवः(भू,गम्,ष्ठा,द्रुशिर्,लभ्,मुद,अस्,भाष्)

3)सन्धयः(अच्- हल्सन्धयः)

4)समासाः(द्वन्द्व,तत्पुरुष,कर्मधारय,द्विगु)



Sri Ramakrishna autonomous degree college Nandyal

BA/B.com/B.sc/B.B.A.1st year -1st Semester

Subject :Sanskrit

Model question Paper (2020-21)

Time:3hrs.

Marks:70

प्रथमो भागः

I. द्वौ श्लोकौ पूरयित्वा भावं लिखत ।

2\*5=10

अ)सान्त्विता.....

..... राज्यमकण्ठकम्॥

आ) अद्वयार्थ.....

.....दिशोदश॥

इ) माता... ..

.....त्रुणात्॥

ई) सार्थः... ..

.....मरिष्यतः॥

II.चतुर्णां ससन्दर्भ भावः च लिखत।

4\*3=12

अ) न ही जीवितस्तस्य वनमागन्तुमर्हसि।

आ) बुद्धिमान् वृद्धसेवया।

इ) अकस्मादागन्तुना सह मैत्री नयुक्ता ।

ई) द्वौ बाहू त्रुतीयश्च खडगः ।

उ) सत्यमूलानि सर्वाणि सत्यान्नास्ति परं पदम्।

ऊ) अहिंसा परमो धर्मः।

ए) जीवनान्तेपि तव राज्यभंगो नास्ति।

ऐ) उदारचरितानां तू वसुधैव कुटुम्बकम्।

III। एकस्य सम्पूर्णतया समाधानं लिखत।

1\*8=8

अ) आर्य पादुकाभिषेकः पाठ्यभागस्य सारांशं लिखत।

आ) यक्षप्रश्नानां वैशिष्ट्यं लिखत।

IV.एकस्य सम्पूर्णतया समाधानं लिखत।

1\*8=8

अ) मेवाडराज्यस्थापनं वर्णयत।

आ) विवेकानन्द सूक्तयः इति पाठ्यभागस्य सारांशं लिखत।

V.एकस्य सम्पूर्णतया समाधानं लिखत।

1\*8=8

अ) शृगालः कथं लगुडेन मारितः। ।

आ) वीरवर कथा विशदयत।

VI।चतुर्णां लघुसमाधानानि लिखत।

4\*1=4

- अ) श्रीरामः भरतं वीक्ष्य किमकरोत् ?  
 आ) श्रीरामः पित्रु मरणवार्तीं निशम्य किं अकरोत् ?  
 इ) किंस्वित् गुरुतरा भूमेः? किंस्वित् उच्चतरं च खात्?  
 ई) किं नु हित्वाअर्थवान् भवति? किं नु हित्वाअर्थवान् सुखी भवेत्?  
 उ) चम्पकवती नाम अरण्यानी कुत्र अस्ति?  
 ऊ) मृगः केन वञ्चितः?  
 ए) वीरवरस्य पुत्रः कः?  
 ऐ) पुत्रस्य मरणानन्तरं वीरवरः आलोच्य किं अकरोत् ?

द्वितीयो भागः

VII) द्वयोः शब्दरूपानि सम्पूर्णतया लिखता। 2\*3=6

अ) देव आ) भानु इ) मति ई) रमा

VIII) चतुर्णां नामनिर्देशपूर्वकं सन्धत्ता। 4\*1=4

अ) कपि +ईशः । आ) पौ+अकः

इ) इति+अत्र ई) तत्+च

उ) महा+ईशः ऊ) तथा+एव

ए) तत्+टीका ऐ) षट् +मुखः

IX) द्वयोः धातुरूपाणि लिखता 2\*3=6

अ) भू- present tense आ) स्था- Imperative tense

इ) लभ् -past tense ई) मुद्- potential tense

X), चतुर्णां नामनिर्देशपूर्वकं विग्रहवाक्यानि लिखत । 4\*1=4

अ) ग्रामगतः आ) अज्ञानम्

इ) कृष्णसर्पः ई) पञ्चगवं

उ) रामकृष्णौ। ऊ) विन्ध्यपर्वतः

ए) गोपालबालः ऐ) पापभयं

**B.A./B.Sc. MATHEMATICS (w.e.f. 2020-21 Admitted Batch)**

**DIFFERENTIAL EQUATIONS**

**SYLLABUS (75 Hours)**

**Course Outcomes:**

1. After successful completion of this course, the student will be able to; Solve linear differential equations
2. Convert non-exact homogeneous equations to exact differential equations by using integrating factors.
3. Know the methods of finding solutions of differential equations of the first order but not of the first degree.
4. Solve higher-order linear differential equations, both homogeneous and non homogeneous, with constant coefficients.
5. Understand the concept and apply appropriate methods for solving differential equations.

**Course Syllabus:**

**UNIT – I (12 Hours)**

**Differential Equations of first order and first degree:**

Linear Differential Equations; Differential equations reducible to linear form; Exact differential equations; Integrating factors; Change of variables.

**UNIT – II (12 Hours)**

Orthogonal Trajectories

**Differential Equations of first order but not of the first degree:**

Equations solvable for  $p$ ; Equations solvable for  $y$ ; Equations solvable for  $x$ ; Equations that do not contain  $x$  (or  $y$ ); Equations homogeneous in  $x$  and  $y$ ; Equations of the first degree in  $x$  and  $y$  – Clairaut's Equation.

**UNIT – III (12 Hours)**

**Higher order linear differential equations-I:**

Solution of homogeneous linear differential equations of order  $n$  with constant coefficients; Solution of the non-homogeneous linear differential equations with constant coefficients by means of polynomial operators. General Solution of  $f(D)y=0$ .

General Solution of  $f(D)y=Q$  when  $Q$  is a function of  $x$ ,  $\frac{1}{f(D)}$  is expressed as partial fractions.

P.I. of  $f(D)y = Q$  when  $Q = be^{ax}$

P.I. of  $f(D)y = Q$  when  $Q$  is  $b\sin ax$  or  $b \cos ax$ .

#### UNIT – IV (12 Hours)

##### Higher order linear differential equations-II:

Solution of the non-homogeneous linear differential equations with constant coefficients.

P.I. of  $f(D)y = Q$  when  $Q = bx^k$

P.I. of  $f(D)y = Q$  when  $Q = e^{ax}V$ , where  $V$  is a function of  $x$ .

P.I. of  $f(D)y = Q$  when  $Q = xV$ , where  $V$  is a function of  $x$ .

of  $f(D)y = Q$  when  $Q = x^mV$ , where  $V$  is a function of  $x$ .

#### UNIT –V (12 Hours)

##### Higher order linear differential equations-III :

Method of variation of parameters; Linear differential Equations with non-constant coefficients; The Cauchy-Euler Equation, Legendre's linear equations, miscellaneous differential equations.

##### Co-Curricular Activities(15 Hours)

Seminar/ Quiz/ Assignments/ Applications of Differential Equations to Real life Problem /Problem Solving.

##### Text Book :

Differential Equations and Their Applications by Zafar Ahsan, published by Prentice-Hall of India Pvt. Ltd, New Delhi-Second edition.

##### Reference Books :

1. A text book of Mathematics for B.A/B.Sc, Vol 1, by N. Krishna Murthy & others, published by S.Chand & Company, New Delhi.
2. Ordinary and Partial Differential Equations by Dr. .D,Raisinghania,published by S. Chand & Company, New Delhi.
3. Differential Equations with applications and programs – S. Balachandra Rao & HR Anuradha- Universities Press.
4. Differential Equations -Srinivas Vangala & Madhu Rajesh, published by Spectrum University Press.

**SRI RAMAKRISHNA DEGREE (AUTONOMOUS ) COLLEGE::NANDYAL**  
**FIRST SEMESTER MATHEMATICS PAPER-2020-2021**  
**TITLE: DIFFERENTIAL EQUATIONS      Max.Marks:70M**

**SECTION-A**

**I. Answer Any FIVE of the following Questions 5X 4=20M**

1. Solve  $(1 + y^2)dx = (\tan^{-1}(y) - x)dy$
2. Solve  $x \frac{dy}{dx} + 2y = x^2 \log x$
3. Show that the family of confocal conics  $\frac{x^2}{a^2 + \lambda} + \frac{y^2}{b^2 + \lambda} = 1$  is self-Orthogonal where  $\lambda$  being parameter
4. Solve  $y^2 \log y = xyp + p^2$
5. Solve  $(D^3 - 5D^2 + 8D - 4)y = e^{2x}$
6. Solve  $(D^2 - 4D + 3)y = \sin 3x \cdot \cos 2x$
7. Solve  $(D^2 + 1)y = \sec x$  by the method of variation of parameters
8. Solve  $(x^2 D^2 + xD - 1)y = x^3$

**SECTION-B**

**II. Answer ALL of the following Questions 5X10=50M**

9. a) Solve  $\frac{dy}{dx} (x^3 y^3 + xy) = 1$

**OR**

b). Solve  $x \frac{dy}{dx} + y = y^2 \log x$

10.a) Find the Orthogonal Trajectories of the family of curves  $r^n \cos n\theta = a^n$  where  $a$  is the parameter

**OR**

b) Solve  $p^2 + 2py \cot x = y^2$

11.a) Solve  $(D^2 - 4)y = e^x + \sin 2x + \cos^2 x$

**OR**

b) Solve the differential Equation  $y'' - 2y' + y = 6xe^x$

12.a) Solve  $\frac{d^2 y}{dx^2} + 3 \frac{dy}{dx} + 2y = xe^x \sin x$

**OR**

b) Solve  $(D^2 + 2D + 1)y = x \cos x$

13. a) Solve  $(D^2 + a^2)y = \tan ax$  by the method of variation of parameters.

**OR**

b) Solve  $[(3x + 2)^2 D^2 + 3(3x + 2)D - 36]y = 3x^2 + 4x + 1$

**SRI RAMAKRISHNA (AUTONOMOUS) DEGREE COLLEGE**

**I B.Sc; ELECTRONICS (SEMESTER-I)**

**(2020-2021 Regulation)**

**PAPER-I: CIRCUIT THEORY AND ELECTRONIC DEVICES**

**UNIT- 1: (12Hrs)**

**SINUSOIDAL ALTERNATING WAVEFORMS:**

Definition of current and voltage. The sine wave- phase relations-average value, effective (R.M.S) values. Differences between A.C and D.C- Operator-J- **Basic elements and phasors:** AC circuits containing basic elements(R, L, and C).

**UNIT-II: (12hrs)**

**PASSIVE NETWORKS AND NETWORKS THEOREMS (D.C):**

Branch current method, Nodal Analysis, Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Maximum Power transfer theorem-application to simple networks.

**UNIT-III: (12hrs)**

**RC, RL Circuits:**

Frequency response of RC and RL circuits- low pass and high pass filters- Passive differentiating and integrating circuits- **Resonance:** Series and parallel resonance RLC circuits-Q – Factor- Comparison of series and parallel resonance.

**UNIT-IV: ( 12hr)**

**Electronic Devices-I**

Construction, Working, V-I characteristics, Equivalent circuit, Symbol and simple applications : PN junction Diode, Zener Diode, Tunnel Diode and Varicap Diode.

**BJT:** NPN/PNP Construction, working and characteristics of CB, CE, CC configurations-relation between  $\alpha$ ,  $\beta$ ,  $\sqrt{\phantom{x}}$ , - h-parameters.

**UNIT-V: (12hrs)**

**Electronic Devices-II**

**JFET:** N and P channel – Construction and working – drain and transfer characteristics-advantages of FET over transistor

**MOSFET:** enhancement and depletion- construction and working –drain and transfer characteristics- advantages of MOSFET over FET.

**TEXT BOOKS:**

1. Introductory circuit Analysis (UBS Publications) -----**Robert L. Boylestad.**
2. Electronic Devices and Circuit Theory-----**Robert L. Boylestad & Louisashelsky.**
3. Circuit Analysis by **P.Gnanasivam- Pearson Education**
4. Electronic Devices and Circuit Theory-- **Robert L. Boylestad & Louis Nashelsky.**

**SRI RAMAKRISHNA DEGREE COLLEGE (AUTONOMOUS)**  
**ELECTRONICS – SEMESTER-1(2020-2021 Regulation)**  
**PAPER-I: CIRCUIT THEORY AND ELECTRONIC DEVICES**

**TIME: 3Hrs**

**MARKS: 70M**

---

**SECTION-A**

**Answer any FIVE of the following:**

**5 X 4M = 20M**

1. What is J-operator. Write its significance in AC circuit.
2. Explain mesh current analysis to solve a two loop network with single source in a one branch.
3. State and prove maximum power transfer theorem.
4. Describe the working of RC differentiating circuit.
5. Compare the series and parallel resonant circuits.
6. Write a note on Varicap diode.
7. Give the relation between  $\alpha, \beta, \gamma$  in a transistor.
8. What are the advantages of FET over BJT.

**SECTION-B**

**Answer ALL the following:**

**5 X 10M = 50M**

9. a) Define Average and RMS Value of AC and derive an expression for them.  
(OR)  
b) What is meant by lag and lead of an AC.  
A sinusoidal wave form is given by  $i=10\sin(6284t+10^0)$  amp. Find its a) Peak value b) RMS value
- 10.a) State and prove thevinin's theorem  
(OR)  
b) State and prove Norton's theorem.
- 11.a) Explain the frequency response of RL circuit.  
(OR)  
b) Define resonance. Obtain an expression for the resonant frequency and Q-factor for LCR series resonant circuit.
12. a) Explain the construction, working and V-I characteristics of Tunnel diode.  
(OR)  
b) Explain input and output characteristics of a transistor in CE configuration.
13. a) What is FET? Discuss construction and working of N-channel FET with neat circuit diagram.  
(OR)  
b) Discuss the working of MOSFET in depletion and enhancement modes.

## PROBLEM SOLVING IN C

Semester	Course Code	Course Title	Hours	Credits
I	C1	PROBLEM SOLVING IN C	60	3

### Objectives:

This course aims to provide exposure to problem-solving through programming. It introduces the concepts of the C Programming language.

### Course Learning Outcomes:

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

1. Understand the evolution and functionality of a Digital Computer.
2. Apply logical skills to analyse a given problem
3. Develop an algorithm for solving a given problem.
4. Understand 'C' language constructs like Iterative statements, Array processing, Pointers, etc.
5. Apply 'C' language constructs to the algorithms to write a 'C' language program.

### UNIT I

**General Fundamentals:** Introduction to computers: Block diagram of a computer, characteristics and limitations of computers, applications of computers, types of computers, computer generations.

**Introduction to Algorithms and Programming Languages:** Algorithm – Key features of Algorithms, Flow Charts, Programming Languages – Generations of Programming Languages – Structured Programming Language- Design and Implementation of Correct, Efficient and Maintainable Programs.

### UNIT II

**Introduction to C:** Introduction – Structure of C Program – Writing the first C Program – File used in C Program – Compiling and Executing C Programs – Using Comments –



Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples.

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

### **UNIT III**

**Arrays:** Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array– Operations on Arrays – one dimensional, two dimensional and multi dimensional arrays, character handling and strings.

### **UNIT IV**

**Functions:** Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive functions.

**Structure, Union, and Enumerated Data Types:** Introduction – Nested Structures – Arrays of Structures – Structures and Functions– Union – Arrays of Unions Variables – Unions inside Structures – Enumerated Data Types.

### **UNIT V**

**Pointers:** Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – Pointer Expressions and Pointer Arithmetic – Null Pointers - Passing Arguments to Functions using Pointer – Pointer and Arrays – Memory Allocation in C Programs – Memory Usage – Dynamic Memory Allocation – Drawbacks of Pointers

**Files:** Introduction to Files – Using Files in C – Reading Data from Files – Writing Data to Files – Detecting the End-of-file – Error Handling during File Operations – Accepting Command Line Arguments.

## **BOOKS**

1. E Balagurusamy – Programming in ANSIC – Tata McGraw-Hill publications.
2. Brain W Kernighan and Dennis M Ritchie - The ‘C’ Programming language” - Pearson publications.
3. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publications.
4. YashavantKanetkar - Let Us ‘C’ – BPB Publications.

## **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. Try to solve MCQ’s available online.
3. 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. Problem-solving exercises,
4. Practical assignments and laboratory reports,

5. Observation of practical skills,
6. Individual and group project reports like “Creating Text Editor in C”.
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
I	C1-P	PROBLEM SOLVING IN C LAB	30	2

### Problem solving in C LAB

1. Write a program to check whether the given number is Armstrong or not.
2. Write a program to find the sum of individual digits of a positive integer.
3. Write a program to generate the first n terms of the Fibonacci sequence.
4. Write a program to find both the largest and smallest number in a list of integer values
5. Write a program to demonstrate refaction of parameters in swapping of two integer values using **Call by Value&Call by Address**
6. Write a program that uses functions to add two matrices.
7. Write a program to calculate factorial of given integer value using recursive functions
8. Write a program for multiplication of two N X N matrices.
9. Write a program to perform various string operations.
10. Write a program to search an element in a given list of values.
11. Write a program to sort a given list of integers in ascending order.
12. Write a program to calculate the salaries of all employees using *Employee (ID, Name, Designation, Basic Pay, DA, HRA, Gross Salary, Deduction, Net Salary)* structure.
  - a. DA is 30 % of Basic Pay
  - b. HRA is 15% of Basic Pay
  - c. Deduction is 10% of (Basic Pay + DA)
  - d. Gross Salary = Basic Pay + DA+ HRA
  - e. Net Salary = Gross Salary - Deduction
13. Write a program to illustrate pointer arithmetic.

14. Write a program to read the data character by character from a file.
15. Write a program to create **Book** (*ISBN, Title, Author, Price, Pages, Publisher*) structure and store book details in a file and perform the following operations
  - a. Add book details
  - b. Search a book details for a given ISBN and display book details, if available
  - c. Update a book details using ISBN
  - d. Delete book details for a given ISBN and display list of remaining Books