



Subject Code: R16CC1201

I B.Tech II Semester Supplementary Examinations, Dec-2017.

INTERACTIVE ENGLISH

(Common to CE, EEE, ME, ECE & CSE)

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**.

Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B

All questions carry equal marks of 12.

Part-A

- 1.(a) What did Kalam learn from his parents?
 - (b) What suggestions does Satya Nadella give to young people ?
 - (c) How did India attract Azim Premji?
 - (d) How did Sachin's guru coach him?
 - (e) What does 'inclusive society' mean?
 - (f) Mention the achievements of Indra Nooyi?
- (2+2+2+2+2+2)

PART-B

2. (a) How did Abdul Kalam face all the hurdles in his life?
 - (b) Write the process of communication and write two barriers to effective communication?
- (7+5)
- 3.(a) How does Satya Nadella motivate his Microsoft customers?
 - (b) What is the importance of listening and give some tips to improve listening skills ?
- (7+5)
4. (a) How did Azim Premji transform his company successful and what are his company's core beliefs?
 - (b) Draft a report on your visit to TCS. The report may include the following headings:
Introduction, history ,objectives, projects, administration, manpower and future prospects.
- (7+5)
5. (a) How can Sachin Tendulkar be a inspiration to Indian youth.
 - (b) Convert the following into indirect speech
 - i. He said, "I have got a toothache".
 - ii. "We were living in Paris", they told me.
 - iii. 'I love you,' he told me.
 - (c) Convert the following into passive voice
 - i. They are building a house.
 - ii. Somebody had stolen my purse.
- (7+3+2)
6. (a) Explain Sam Pitroda's concept of 'Knowledge Revolution'.
 - (b) Correct the following sentences where ever necessary.
 - i. The small child does whatever his father was done.
 - ii. He is too important for tolerating any delay.
 - iii. Interpersonal relationship is one of the most important aspect of life.
 - iv. The orator had been left the auditorium before the audience stood up.
 - v. They felt humiliated because they realized that they had cheated.

vi. The spectacles is on the table.

c) Fill in the blanks in the sentence pairs with words that either sound or spelt same

- i. The _____ (assent/ ascent) to this mountain is not an easy task.
- ii. Bihar is a state _____ (teaming /teeming) with coal mines.
- iii. You don't have _____ (right/raid) to say about this.
- iv. I _____ (meat/meet) the girl and spoke to her.

(7+3+2)

7.(a). Narrate the success journey of Indra Nooyi ?

(b). Write one word substitutes for the following words.

- i. a sound that cannot be heard
- ii. a lover of mankind
- iii. one, who speaks many languages.
- iv. one who is present everywhere
- v. which cannot be avoided
- vi. one who looks at the dark side of life.

c. Replace the underlined word in each sentence with a suitable synonym

i. Her presentation is outstanding.

- a. eminent b. humane c. queer d. typical

ii. They made a radical reform in the history

- a. obedient b. transliterate c.dethrone d.ultra

(7+3+2)

Subject Code: R16CC1202

I B.Tech II Semester Supplementary Examinations, Dec-2017.

INTEGRAL TRANSFORMS AND VECTOR CALCULUS

(Common to CE, EEE, ME, ECE & CSE)

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**.

Answering the question in **Part-A** is Compulsory & Four Questions should be answered from **Part-B**.
All questions carry equal marks of 12.

PART-A

1. (a) Find the Laplace Transform of $\cos^2 kt$
(b) Find the Z-transform of $\{a^n \sin nt\}$
(c) Find the Fourier Series of $f(x) = \sin x$ in $(-\pi, \pi)$.
(d) Write Fourier Sine and Cosine Transform of $f(x)$.
(e) Prove that $\text{div } \vec{r} = 3$.
(f) State Gauss Divergence Theorem.

[2+2+2+2+2+2]

PART-B

4 X 12 = 48

2. a) Find $L^{-1} \left[\frac{s}{(s^2 + a^2)(s^2 + b^2)} \right]$ using Convolution theorem.

b) Using Laplace transform Solve, $(D^2 + 9)y = \sin t$, $y(0) = 1$; $y'(0) = 0$.

3. a) Evaluate $Z(\cos \theta + i \sin \theta)^n$. Hence prove that $Z(\cos n\theta) = \frac{z(z - \cos \theta)}{z^2 - 2z \cos \theta + 1}$ and

$$Z(\sin n\theta) = \frac{z \sin \theta}{z^2 - 2z \cos \theta + 1}$$

b) If $Z(u_n) = U(z)$ then Prove that $\lim_{n \rightarrow \infty} u_n = \lim_{z \rightarrow 1} (z - 1)U(z)$

4. a) Find the Fourier Series of $f(x) = (\pi - x)/2$ in the interval $(0, 2\pi)$.

b) Find the half-range Fourier sin and cosine Series for $f(x) = e^x$ in $(0, 1)$.

5. a) Find the Fourier cosine transform of $f(x) = e^{-ax}$ for $x \geq 0$ and $a > 0$ and deduce the integral $\int_0^\infty \frac{\cos ax}{a^2 + x^2} dx$.

b) Find the finite Fourier sin and cosine transform of $f(x) = x(\pi - x)$ in $0 < x < \pi$.

6. a) Find the directional derivative of the function $f = x^2yz + 4xz^2$ at the point $P(1, -2, -1)$ in the direction $2\vec{i} - \vec{j} - 2\vec{k}$.

b) Evaluate $\text{div} \left(\frac{\vec{r}}{r^3} \right)$ where $\vec{r} = x\vec{i} + y\vec{j} + z\vec{k}$ and $r = |\vec{r}|$.

7. a) Compute the line integral $\int_C (y^2 dx - x^2 dy)$ round the triangle whose vertices are (1,0), (0,1) and (-1,0).

b) Using Green's Theorem evaluate $\int_C (2xy - x^2)dx + (x^2 + y^2)dy$, where "C" is the closed curve of the region bounded by $y = x^2$ and $y^2 = x$.



Subject Code: R16CC1203

I B.Tech II Semester Supplementary Examinations, Dec-2017.

ENGINEERING PHYSICS

(Common to CE, EEE & ME)

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**.

Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B

All questions carry equal marks of 12.

PART-A

1. (a) What are the conditions for sustainable interference pattern?
- (b) Define the terms acceptance angle and acceptance cone.
- (c) State Bragg's law of X-ray diffraction?
- (d) What are the factors affecting the acoustic quality of a building?
- (e) What is de-Broglie's hypothesis? Write the expression for wavelength of an electron.
- (f) Write the applications of Hall effect.

[2+2+2+2+2+2]

PART-B

4 X 12 = 48

2. (a) Explain the interference of light due to thin films.
- (b) Monochromatic light of wavelength $6.56 \times 10^{-7} \text{m}$ falls normally on a grating 2 cm wide. The first order spectrum is produced at an angle of $18^\circ 15'$ from the normal. Deduce the total no. of lines on the grating.
- (c) Distinguish between quarter wave plate and half wave plate. [6+2+4]
3. (a) Distinguish between spontaneous and stimulated emission.
- (b) Define numerical aperture of an optical fiber and derive the expression for it. [6+6]
4. (a) Explain the terms i) basis ii) space lattice and iii) unit cell
- (b) What are Miller indices? Draw (111) and (110) planes in a cubic lattice. [6+6]
5. (a) What are ultrasonics? Write its application.
- (b) Write the properties of ultrasonics.
- (c) Explain the terms Reverberation and Reverberation time [4+4+4]
6. (a) Explain the salient features of classical free electron theory.
- (b) Derive Schrodinger's time independent wave equation. [6+6]
7. (a) Distinguish between conductors, semiconductors and insulators.
- (b) Explain Fermi level concept in intrinsic and extrinsic semiconductor. [6+6]



Narasaraopeta Engineering College (Autonomous)

Kotappakonda Road, Yellamanda (P.O), Narasaraopet- 522601, Guntur District, AP.

Subject Code: R16CC1204

I B.Tech II Semester Supplementary Examinations, Dec-2017.

ENGINEERING CHEMISTRY

(Common to ECE, CSE)

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**.

Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B

All questions carry equal marks of 12.

PART-A

1. (a) Define scale and sludge.
(b) Write the preparation of polysulphite rubber.
(c) What are nematic liquid crystals?
(d) Define galvanizing and tinning.
(e) What is meant by knocking?
(f) Define fluorescence. Give examples.

[2+2+2+2+2+2]

PART-B

4 X 12 = 48

2. (a) Discuss deionization process method for softening of hard water.
(b) Calculate the temporary and permanent hardness of water containing the following salts:
 $\text{Ca}(\text{HCO}_3)_2 = 40 \text{ mg/L}$; $\text{CaSO}_4 = 30 \text{ mg/L}$; $\text{Mg}(\text{HCO}_3)_2 = 22 \text{ mg/L}$, $\text{MgSO}_4 = 30 \text{ mg/L}$;
 $\text{CaCl}_2 = 20 \text{ mg/L}$ [8+4]
3. (a) Write notes on p- and n- type conducting polymers.
(b) Explain free radical mechanism of addition polymerization. [8+4]
4. (a) Explain the setting and hardening of cement.
(b) Discuss the preparation of Ibuprofen by green synthesis. [8+4]
5. (a) Write notes on constituent of paints and their functions
(b) Discuss the reactions occurring at anode and cathode for (i) Ni-Cd battery (ii) $\text{H}_2\text{-O}_2$ fuel cell [6+6]
6. (a) What is cracking? Explain any one catalytic cracking method with a neat sketch.
(b) Explain Junker's gas colorimeter. [6+6]
7. (a) Discuss (i) Grothus Draper law (ii) Lambert's Beer Law
(b) Write the applications of photochemistry. [6+6]

Subject Code: R16CC1206

I B.Tech II Semester Supplementary Examinations, Dec-2017.

ENGINEERING MECHANICS

(Common to CE & ME)

Time: 3 hours

Max Marks: 60

Question Paper Consists of Part-A and Part-B.

Answering the question in Part-A is Compulsory & Four Questions should be answered from Part-B

All questions carry equal marks of 12.

PART-A

1. (a) State lami's theorem
- (b) What is angle of repose and angle of friction
- (c) State the two theorems of Pappus
- (d) Write about polar moment of inertia
- (e) What is the Mass Moment of Inertia
- (f) State D'Alembert's Principle.

[2+2+2+2+2+2]

PART-B

4 X 12 = 48

2. (a) A ball of weight $Q=53.4$ N rests in a right angled trough, as shown in figure.1. Determine the forces exerted on the sides of the trough at D and E if all surfaces are Perfectly smooth.

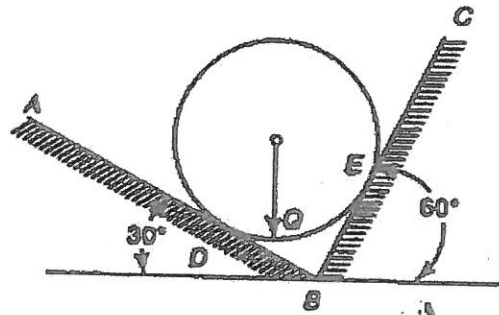
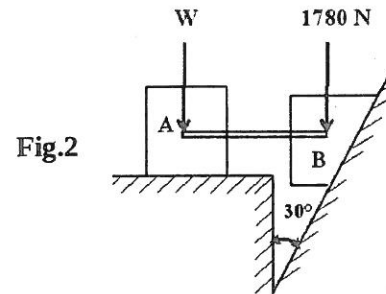


Fig.1

- (b) State and Prove Parallelogram Law

3. Two blocks connected by a horizontal link AB are supported on two rough planes as shown in figure2. The coefficient of friction for block A on the horizontal plane is $\mu=0.4$. The angle of friction for block B on the inclined plane is $\phi=15^\circ$. What is the smallest weight W of block A for which equilibrium of the system can exist?



4. With respect to coordinate axes x and y , locate the centroid C of the shaded area as shown in the figure.

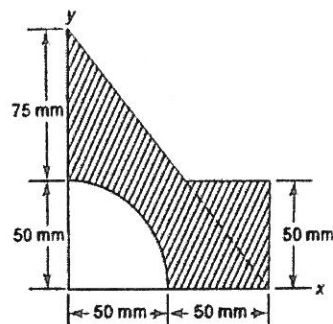


Fig.3

5. (a) state and prove the parallel axis theorem
 (b) Reference to Fig.4 Calculate the moment of inertia of the shaded area with respect to a centroidal axis parallel to the x -axis.

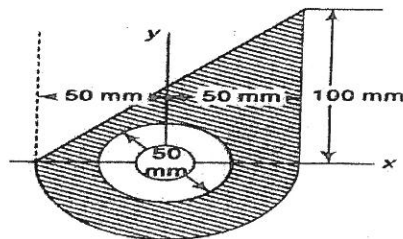


Fig.4

6. (a) Determine the mass moment of inertia of rectangular plate from basic principles
 (b) Determine the mass moment of inertia of a uniform rod of length L about its centroidal axis normal to rod
7. (a) State and prove work-Energy Principle
 (b) A car of mass 1000 kg descends a hill of $\sin^{-1}(1/6)$. The frictional resistance to motion is 200 N. Calculate, using work energy method, the average braking effort to bring the car to rest from 48 km/h in 30 m.



Subject Code: R16CC1207

I B.Tech II Semester Supplementary Examinations, Dec-2017.

ENGINEERING DRAWING

(Common to CE & ME)

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**.

Answering the question in **Part-A** is Compulsory & Four Questions should be answered from **Part-B**

All questions carry equal marks of 12.

PART-A

1. (a) A block of Ice- berg 1000m^3 volumes is represented by a block of 27 cm^3 volume. Find the scale factor.
- (b) A point P is 40 mm above the H.P. and 20 mm behind the V.P. Draw its projections
- (c) Draw the projection of a 70 mm long line parallel to both the H.P. and the V.P. and 25 mm from each .
- (d) A Pentagonal lamina of side length 30mm its surface is perpendicular to H.P and parallel to V.P draw its projections.
- (e) Draw the projections of a cone of base diameter 40mm and axis 60mm when its axis perpendicular to horizontal plane.
- (f) A cylinder of base 50mm diameter and axis 70 mm long is laying on HP. Draw its isometric projections when axis is horizontal.

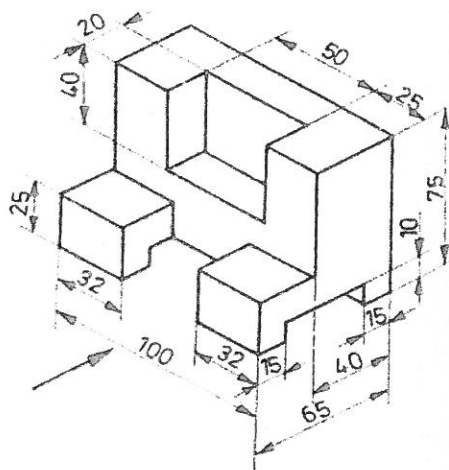
[2+2+2+2+2+2]

PART-B

4 X 12 = 48

2. (a) The foci of an ellipse are 90 mm apart and the minor axis is 65 mm long. Determine the length of the major axis and draw the ellipse by arcs of circles method
- (b) On a map the distance between two points is 14 cm. The real distance between them is 20Km. Draw a diagonal scale for this map to read kilometres and hectometres and to measure up to 25km. shows a distance of 17.6km on this scale.
3. (a) Two points A and B are in the H.P. the point A is 30mm in front of the V.P. while B is behind the V.P. the distance between their projectors is 75mm and the line joining their top views makes an angle of 45° with xy. Find the distance of the point B from the V.P.
- (b) The front view of a 70 mm long line measures 50 mm. the line is parallel to the H.P. and one of its ends is in the V.P. Draw the projections of the line and determine its inclination with the V.P.
4. A line AB, inclined at 40° to the V.P. has its ends 50 mm and 20 mm above the H.P. the length of its front view is 65 mm and its V.T. is 10 mm above the H.P. determine the true length of AB, its inclination with the H.P. and its H.T.

5. Draw the projections of a circle of 60 mm diameter resting in the H.P. on a point A on the circumference, its plane inclined at 45° to the H.P. and
 - (a) the top view of the diameter AB making 30° with the V.P.
 - (b) the diameter AB making 30° with the V.P.
6. A hexagonal pyramid, base 25 mm side axis 50 mm long, has an edge of its base on the ground. Its axis is inclined at 30° to the ground and parallel to the VP. Draw its projections.
7. Draw the (a) Front view (b) Top view and (c) Side view for the following figure



Subject Code: R16EE1209

I B.Tech II Semester Supplementary Examinations, Dec-2017.

ELECTRIC CIRCUIT ANALYSIS - I

(EEE)

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**.

Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B
All questions carry equal marks of 12.

PART-A

1. (a) Explain about Source Transformation Technique
- (b) Define Real power Reactive power and Apparent power
- (c) Define Quality factor and Bandwidth
- (d) Define tree and co tree
- (e) What are the limitations of Superposition theorem
- (f) Define MMF and Reluctance

[2+2+2+2+2+2]

PART-B

4 X 12 = 48

2. (a) State and explain Kirchoff's laws with suitable example [6]
- (b) Find the equivalent resistance R_{ab} in each of the circuits of Fig.1 Each resistor is 100Ω [6]

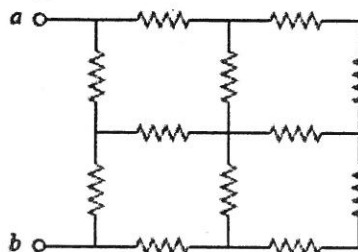


Fig.1

3. (a) The waveform shown in Fig.2 is a half-wave rectified sine wave. Find the rms value and the amount of average power dissipated in a 10Ω resistor. [6]

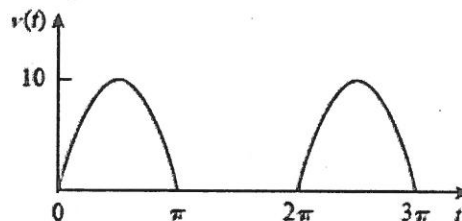


Fig.2

- (b) Calculate the power factor of the entire circuit of Fig.3 as seen by the source. What is the average power supplied by the source? [6]

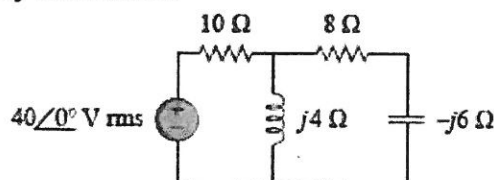


Fig.3

4. (a) Define basic cut-set and tie-set? Write down the fundamental cut-set schedule and tie-set schedule for the network shown in Fig.4 by taking 5Ω resistor branches as tree branches. [8]

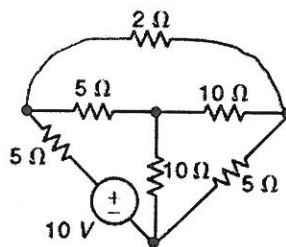


Fig.4

- (b) Obtain the dual of the circuit in Fig.5 [4]

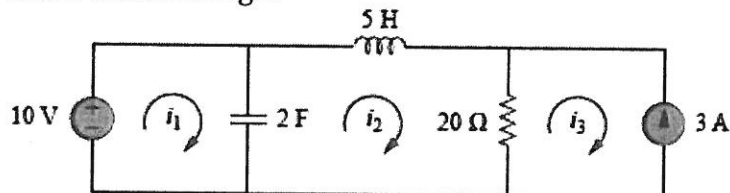


Fig.5

5. (a) Explain about Resonance in Series RLC circuits [6]
 (b) A parallel resonant circuit with quality factor 120 has a resonant frequency of 6×10^6 rad/s. Calculate the bandwidth and half-power frequencies. [6]
6. (a) State and explain Tellegen's and Compensation Theorems [6]
 (b) Find the Norton equivalent at terminals $a-b$ of the circuit in Fig. 6 [6]

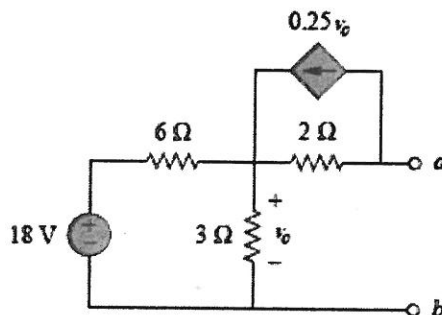


Fig.6

7. (a) Explain about Dot convention method [6]
 (b) Two coils are mutually coupled with $L_1 = 25\text{mH}$, $L_2 = 60\text{mH}$ and $K = 0.5$. Calculate the maximum possible equivalent inductance if [6]
 (i) the two coils are connected in series
 (ii) the two coils are connected in parallel



Subject Code: R16EC1210

I B.Tech II Semester Supplementary Examinations, Dec-2017.

PROGRAMMING WITH C

(ECE)

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**.

Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B

All questions carry equal marks of 12.

PART-A

1.

- (a) What are the different data types in C language
- (b) Give syntax of simple if statement
- (c) Specify any four header files in C
- (d) Define pointer
- (e) What are enumerated data types?
- (f) What is file?

[2+2+2+2+2+2]

PART-B

4 X 12 = 48

- 2. (a) What is C operators? Discuss about types Operators?
(b) Write a C program to find the maximum of three numbers using conditional operators
- 3. (a) Explain the different kinds of loops available in C with examples
(b) Write a program to find the maximum of an array
- 4. (a) What is call by value? How it is different from call by reference? Write and explain 'C' language program to implement the concept of call by value and call by reference.
(b) What is a storage class? Discuss in detail the difference between all storage classes with suitable examples.
- 5. (a) Why pointer is used in 'C' programming?
(b) Write a program to explain the use of pointer
- 6. (a) What is structure? How it is different from union?
(b) Write a C language program to define structure for class containing class, name, no. of students and block no. Read 5 records and display it.
- 7. (a) Explain various function used for opening closing and processing a file in 'C' language
(b) Write a C language program to create file "odd" to store all odd numbers between 1 and n.

Subject Code: R16EC1211

I B.Tech II Semester Supplementary Examinations, Dec-2017.

NETWORK ANALYSIS

(ECE)

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**.

Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B
All questions carry equal marks of 12.

PART-A

1. (a) Explain the difference between practical sources and ideal sources.
 - (b) Explain the terms frequency, cycle and period of time in connection with a.c circuits
 - (c) Define Quality factor and selectivity
 - (d) State Milliman's Theorem
 - (e) Define self inductance and mutual inductance
 - (f) A dc voltage of 20V is applied in a RL circuit where $R = 5$ and $L = 10H$. find time constant
- [2+2+2+2+2+2]**

PART-B

4 X 12 = 48

2. (a) Explain about independent and dependent sources [4]
- (b) Using nodal analysis, find current i_o in the circuit of Fig.1 [8]

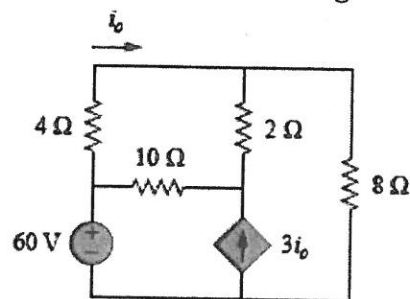


Fig.1

3. (a) Find the rms value of the periodic signal in Fig.2 [6]

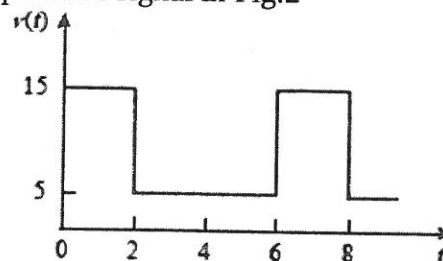


Fig.2

- (b) Draw graph of the circuit shown in Fig.3 and select tree to write the tie-set matrix. [6]

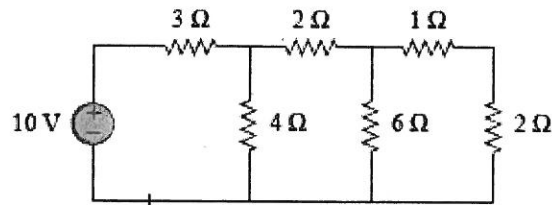


Fig.3

4. (a) Derive the expression for power in a single phase a.c circuits. [6]
 (b) Show that in a series R-L-C circuit, the resonant frequency is the geometric mean of half power frequencies. [6]
5. (a) State and explain maximum power transfer theorem [6]
 (b) Obtain the Thevenin equivalent circuits at the terminals $a-b$ for the circuit in Fig.5 [6]

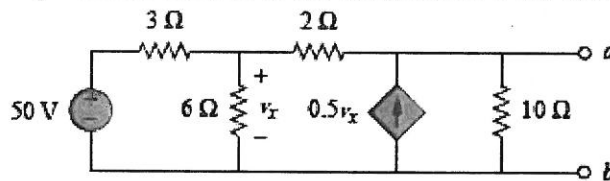


Fig.5

6. (a) Determine the hybrid parameters for the network in Fig.6 [6]

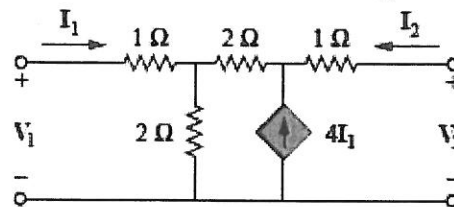


Fig.6

- (b) Determine the inductance of the three series connected inductors of Fig. 7 [6]

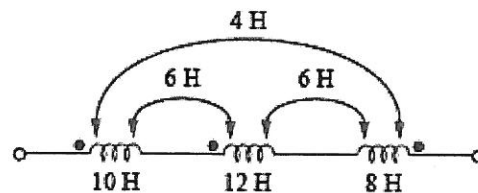


Fig.7

7. Obtain the expression for $i(t)$ when the switch 's' is closed at $t=0$. Discuss the three cases of over damped, under damped and critically damped conditions. Sketch the current variation in each case.(Fig.8) [12]

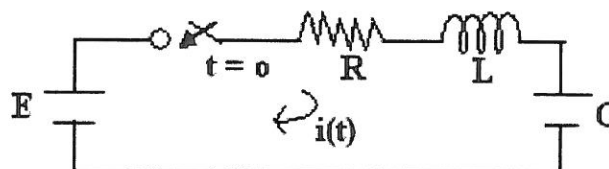


Fig.8

Subject Code: R16CS1213

I B.Tech II Semester Supplementary Examinations, Dec-2017.
MATHEMATICAL METHODS
(CSE)

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**.

Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B
All questions carry equal marks of 12.

PART-A

1. (a) Find the rank of the matrix $\begin{bmatrix} 1 & 2 & 3 \\ 0 & 2 & -1 \\ 0 & 2 & -1 \end{bmatrix}$
- (b) Is the quadratic form $x^2 - 4xy + 5y^2$ of a matrix, positive definite? Justify your answer.
- (c) Transform the integral $\int_0^{\infty} \int_0^y dx dy$ to polar coordinates.
- (d) Find approximate value of $\sqrt{5}$ by Newton's iteration method.
- (e) Prove that $\nabla \Delta = \Delta - \nabla = \delta^2$.
- (f) State Trapezoidal rule.

[2+2+2+2+2+2]

PART-B

4 × 12 = 48

2. (a) Find non-singular matrices P and Q such that PAQ is in the normal form, where

$$A = \begin{bmatrix} 1 & -1 & -1 \\ 1 & 1 & 1 \\ 3 & 1 & 1 \end{bmatrix}. \text{ Also find the rank of the matrix } A.$$

- (b) Solve the following linear system of equations using the iterative method which makes use of most recent values in the current iteration

$$2x - 3y + 10z = 3; \quad -x + 4y + 2z = 20; \quad 5x + 2y + z = -12.$$

Terminate at the third iteration, and hence predict the values of x, y, z .

3. (a) Find the Eigen values and Eigen vectors of the matrix $\begin{bmatrix} 8 & -6 & 2 \\ -6 & 7 & -4 \\ 2 & -4 & 3 \end{bmatrix}$
- (b) Verify Cayley-Hamilton theorem for $A = \begin{bmatrix} 1 & 2 \\ 2 & -1 \end{bmatrix}$, and hence find A^8 .

4. (a) Change the order of integration $\int_0^1 \int_{x^2}^{2-x} (xy) dy dx$ and hence evaluate the same.

- (b) Find the volume bounded by the cylinder $x^2 + y^2 = 4$ and the planes $y + z = 4$ and $z = 0$.
5. (a) Using bisection method, find a root of the equation $x^3 - 3x - 5 = 0$.
- (b) Find the positive root of $x^4 - x - 10 = 0$ correct to three decimal places, using Newton-Raphson method.
6. (a) Given the first order forward difference is $6x$ of the polynomial function $f(x)$ with $f(0) = 4$ and interval of differencing being 1, find $f(x)$.
- (b) Express the function $\frac{x^2 + x - 3}{x^3 - 2x^2 - x + 2}$, using Lagrange's formula as sum of partial fractions.
7. (a) Given $\frac{dy}{dx} = -xy^2$, $y(0) = 2$, using Euler's modified method find $y(0.2)$ in two steps of 0.1 each.

(b) Given the data

x	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2
y	0	0.11	0.24	0.39	0.56	0.75	0.96	1.19	1.44	1.71	2.00	2.31	2.64

Apply appropriate Simpson's rule (with $h = 0.1$) to compute $\int_{0.2}^{1.0} (x \cdot y) dx$, where y is a function of x .

Subject Code: R16CS1214**I B.Tech II Semester Supplementary Examinations, Dec-2017.****C PROGRAMMING****(CSE)****Time: 3 hours****Max Marks: 60**Question Paper Consists of **Part-A** and **Part-B**.Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B

All questions carry equal marks of 12.

PART-A

1.

- (a) State the four basic data types in C language
- (b) What is the syntax of nested if statement
- (c) Define a recursive function. Give an example
- (d) Differentiate between array of pointer to an array
- (e) What are enumerated data types? Give an example.
- (f) List any three file mode in C?

[2+2+2+2+2+2]**PART-B****4 X 12 = 48**

- 2. (a) What is C operators? Discuss about types of Operators?
(b) Write a program that prints the prime numbers between 1 to 100
- 3. (a) Compare in terms of their functions, the following pairs of statements
i) While and Do while ii) Break and continue
(b) Write a program to compute the sum of the digits of a given integer number
- 4. (a) What does a storage class mean? Explain different storage classes available in C
(b) Write a C language program to swap two numbers using pointers and functions
- 5. (a) Define pointer. Write a program to explain the usage of pointer. List the troubles in using pointers
(b) Write a program using pointers to read an array of integers and print its elements in reverse order.
- 6. (a) Differentiate between a structure and a union. Explain in detail using suitable example program for each
(b) Write a C language program to define structure for class containing class, name, no. of students and block no. Read 5 records and displays it.
- 7. (a) What is file? Explain various functions used for opening, closing and processing a file in 'C' language.
(b) Write a C language program to copy the contents of one file to another file.

Subject Code: R16CS1215**I B.Tech II Semester Supplementary Examinations, Dec-2017.****ELECTRONIC DEVICES AND LOGIC DESIGN****(CSE)****Time: 3 hours****Max. Marks: 60****Question Paper Consists of Part-A and Part-B.**Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B

All questions carry equal marks of 12.

PART-A

1. (a) Define drift current?
(b) What are the limitations of FET over BJT?
(c) What are the types of Oscillator?
(d) Write the truth tables of NAND and NOR gates?
(e) Draw the circuit diagram of full adder?
(f) Define ripple counter?

[2+2+2+2+2+2]**PART-B****4 X 12 = 48**

2. (a) Explain Zener and Avalanche break-down in Zener diode. [6]
(b) Explain the construction and operation of LED. [6]
3. (a) Explain the construction and working of PNP Bipolar junction transistor. [8]
(b) Compare JFET and MOSFET. [4]
4. (a) Explain how a transistor can be used as an amplifier. [6]
(b) What is an oscillator? Explain Hartley oscillator. [6]
5. (a) What are universal gates. Explain their truth table. [4]
(b) Minimize the following function using K-Map.
 $F(A,B,C,D,E) = \sum m(0,2,3,10,11,12,13,16,17,18,19,20,21,26,27)$ [8]
6. (a) Design Full adder using gates. [6]
(b) Draw the logic diagram of RS Flip-Flop and explain its operation. [6]
7. (a) With neat diagrams explain the working of universal shift register. [6]
(b) With neat diagrams explain the working of Synchronous counter. [6]
