

**MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)**

(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)

Gundlapochampally (H). Maisammaguda (V). Medchal (M). Medchal-Malkajgiri (Dist), Hyderabad

**I B.TECH I SEMESTER REGULAR & SUPPLEMENTARY EXAMINATIONS,****DECEMBER-2019**Subject: ENGINEERING MATHEMATICS-I

Branch: Common to ALL

Time: 3 hours

Max. Marks: 70

Answer ALL questions of the following

5x14 M= 70M

1. a) Reduce the matrix  $\begin{bmatrix} 1 & -1 & -2 & -3 \\ 4 & 1 & 0 & 2 \\ 0 & 3 & 1 & 4 \\ 0 & 1 & 0 & 2 \end{bmatrix}$  to the normal form and hence find its rank.

b) For what values of  $k$ , the equations

$$x + y + z = 1, \quad 2x + y + 4z = k, \quad 4x + y + 10z = k^2$$

have a solution and solve them completely in each case.

OR

2. a) Solve the following system

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

b) Reduce the following matrix into Echelon form and hence find its rank

$$\begin{bmatrix} 3 & 2 & -1 & 5 \\ 5 & 1 & 4 & -2 \\ 1 & -4 & 11 & -19 \end{bmatrix}$$

3. a) If  $\lambda$  is an eigen value of a non-Singular matrix  $A$ , then show that  $\frac{1}{\lambda}$  is an eigen value of  $A^{-1}$ .

[4M]

b) Reduce the quadratic form  $3x^2 + 3y^2 + 3z^2 + 2xy + 2xz - 2yz$  to a canonical form by orthogonal transformation.

[10M]

OR

4. Show that the matrix  $A = \begin{bmatrix} -9 & 4 & 4 \\ -8 & 3 & 4 \\ -16 & 8 & 7 \end{bmatrix}$  is diagonalizable. Also find the diagonal form and a diagonalizable matrix  $P$ .

5. a) Test the convergence of the series  $\sum_{n=1}^{\infty} \frac{(n!)^2}{(2n)!} x^{2n}$ .

b) For what values of  $x$ , the series  $x - \frac{x^2}{2^2} + \frac{x^3}{3^2} - \frac{x^4}{4^2} + \dots$  converges.

OR

6. a) Show by Cauchy integral test that the series  $\sum_{n=2}^{\infty} \frac{1}{n(\log n)^p}$  converges if  $p > 1$  and diverges if  $0 < p < 1$ .

b) Test for convergence of the series  $\frac{1}{6} - \frac{2}{11} + \frac{3}{16} - \frac{4}{21} + \frac{5}{26} - \dots$

7. a) Find the Fourier series of the function  $f(x) = x \cos x$ ,  $-\pi < x < \pi$ .

b) Find the half range cosine series of the function  $f(x) = (x-1)^2$ ,  $0 < x < 1$ .

Hence evaluate  $\frac{1}{1^2} + \frac{1}{3^2} + \frac{1}{5^2} + \dots$

OR

8. Find the Fourier series for  $f(x) = \begin{cases} 1 + \frac{2x}{\pi}, & \text{for } -\pi < x < 0 \\ 1 - \frac{2x}{\pi}, & \text{for } 0 < x < \pi \end{cases}$  and hence deduce the sum of the

series  $\frac{1}{1^2} + \frac{1}{3^2} + \frac{1}{5^2} + \dots = \frac{\pi^2}{8}$

9. a) Prove that  $\frac{\pi}{6} + \frac{1}{5\sqrt{3}} < \sin^{-1}\left(\frac{3}{5}\right) < \frac{\pi}{6} + \frac{1}{8}$

b) Verify Taylor's theorem for  $f(x) = (1-x)^{5/2}$  with Lagrange's form of remainder up to 2 terms in the interval  $[0, 1]$ .

OR

10. a) Verify Lagrange's mean value theorem for  $f(x) = \begin{cases} x \sin \frac{1}{x} & (x \neq 0) \\ 0 & (x = 0) \end{cases}$  in  $[-1, 1]$ .

b) Evaluate  $\int_0^{\infty} \frac{x}{1+x^6} dx$  using  $\beta$ - $\Gamma$  functions.

Code No.: 80B03

MR18

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Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

**I B.TECH I SEMESTER REGULAR & SUPPLEMENTARY EXAMINATIONS,  
DECEMBER-2019**

Subject: ENGINEERING CHEMISTRY

Branch: Common to CE, ME & MINING

Time: 3 hours

Max. Marks: 70

Answer ALL questions of the following

5x14 M= 70M

1. a) What is reverse osmosis? How is sea water purified by this technique? [7M]  
b) Calculate the temporary hardness and permanent hardness of a water sample containing:  $\text{Mg}(\text{HCO}_3)_2=7.3 \text{ mg/l}$  ;  $\text{Ca}(\text{HCO}_3)_2=16.2 \text{ mg/l}$  ;  $\text{MgCl}_2=9.5 \text{ mg/l}$  ;  $\text{CaSO}_4=13.6 \text{ mg/l}$ . [7M]

OR

2. a) Describe the method of softening of water by ion exchange process in detail. [10M]  
b) Explain the regeneration of anionic and cationic resins with chemical equations. [4M]
3. a) What do you mean by LCAO principle? With the help of this, explain how molecular orbitals are formed involving s&p - orbitals. [10M]  
b) Write the magnetic properties of following complexes? [4M]  
(i)  $[\text{Co}(\text{CN})_6]^{-3}$  (ii)  $[\text{Co F}_6]^{-3}$  (iii)  $[\text{Ni}(\text{CO})_4]$  (iv)  $[\text{NiCl}_4]^{-2}$

OR

4. a) Write down MO diagram and configuration of  $\text{O}_2$  and its properties. [7M]  
b) Explain the crystal field splitting of d-orbital in tetra hydral complexes. [7M]
5. a) Explain construction and working of glass electrode. [7M]  
b) Write a note on sacrificial anodic protection. [7M]

OR

6. a) Write a note on Ni-Cd battery. [7M]  
b) What is impressed current cathodic protection method? Explain. [7M]
7. a) Write a short note on Spin-Spin coupling. [6M]  
b) Discuss the Optical isomerism of tartaric acid and lactic acid? [8M]

OR

8. a) Explain conformational Isomerism with n-Butane as example. [7M]  
b) Write a short note on coupling constant. [7M]
9. a) Write synthesis and mechanism of Paracetamol. [7M]  
b) Write the pharmaceutical applications of Paracetamol. [7M]

OR

10. a) Explain the mechanism of  $\text{SN}^2$  reaction with suitable example. [7M]  
b) What are free radicals? How are they formed? Explain their stability. [7M]



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**I B.TECH I SEMESTER REGULAR END EXAMINATIONS, DECEMBER-2019**Subject: ENGLISHBranch: Common to **EEE, ECE, CSE&IT****Time: 3 hours****Max. Marks: 70****Answer ALL questions of the following****5x14 M= 70M**

1. a) Write short notes on the following
  - i). Characteristics of effective writing [7M]
  - ii). Types of reading [7M]

**OR**

2. a) What is Minimalism? How does it help to live a meaningful life? Discuss. [10M]
- b) Add prefix to form antonymous meaning for the words given below. [2M]
  - (i) Conduct
  - (ii) Honour
  - (iii) Polite
  - (iv) Characteristic
- c) Use proper suffix to change the part of speech of the words given below. [2M]
  - (i) Agitate (change to noun)
  - (ii) Serious (change to Adjective)
  - (iii) Repeat (change to Noun)
  - (iv) Narration (change to Adjective)
3. a) What made the poet say 'Life is a lovely stalactite of dreams, or carnival of careless joys that leap'- Interpret. [5M]
- b) Write a paragraph on the topic 'Life without internet' [5M]
- c) Write a brief note on 'intensive reading' [4M]

**OR**

4. a) "Describe how changes in the society through technology can lead to wealth generation in a poor country like India. [10M]
- b) Convert the following. [4M]
  - (i) Being tired, he fell asleep. (Convert into compound sentence)
  - (ii) I finished my dinner. I went for a walk.(Convert into a simple sentence)
  - (iii) They are playing games. (Change into passive voice)
  - (iv) Let the bird be caught. (Change into active voice)
5. a) Write an essay on 'Women empowerment in fighting domestic violence' [7M]
- b) According to Kipling, what should be one's attitude to unexpected loss? as explained in the poem "IF" [7M]

**OR**

6. a) "Young fellows after ten should be horse whipped if they are not to become brigands." Explain in detail in the lesson 'Half a Rupee Worth'? [10M]
- b) Correct the following sentences if necessary. [4M]
  - (i) He will meet her if she will come to Hyderabad.
  - (ii) The Director issued order for his promotion.
  - (iii) Neither of the brothers were at home.
  - (iv) The goods are in short supply.

7. a) Write about the early life and family of Jesse Owens [10M]  
 b) i) A Sword is not as strong as pen (Change it into comparative)  
 ii) Very few countries in the world are as rich as America (Change it into superlative)  
 iii) The new boss is well known for his rigid approach to all problems  
 a) Swift b) Logical c) Sympathetic d) Flexible  
 iv) Provide one word substitutes to the following sentence.  
 a. A person who hates women-----  
 b. Rule by a king-----

OR

8. a) You are President of the Youth Club of your town. Write a letter to the Collector of your district requesting him to attend the anniversary of the Club, as Chief Guest. [8M]  
 b) Supply question tag for the following. [3M]  
 (i) She is ugly, ----- ?  
 (ii) The boy ran out, -----?  
 (iii) Little attention was paid to that matter, -----?  
 c) Write one word substitution for the following. [3M]  
 (i) One who loves mankind  
 (ii) A grass eating animal  
 (iii) That which cannot be avoided
9. a) The Human Family Poem by Dr. Maya Angelou speaks about the similarities and differences between people. It describes how we are all so different, and how we are so much alike. Explain [6M]  
 b) Summarize the following passage: [5M]

Professional ethics encompass the personal, organizational, and corporate standards of behavior expected of professionals. The term professionalism originally applied to vows of a religious order. By at least the year 1675, the term had seen secular application and was applied to the three learned professions: Divinity, Law, and Medical. The term professionalism was also used for the military profession around the same time. Professionals and those working in acknowledged professions exercise specialist knowledge and skill. How should the use of this knowledge be governed when providing a service to the public can be considered a moral issue and is termed professional ethics. Professionals are capable of making judgments, applying their skills, and reaching informed decisions in situations that the general public cannot because they have not attained the necessary knowledge and skills. Disciplinary codes allow the profession to define a standard of conduct and ensure that individual practitioners meet this standard, by disciplining them from the professional body if they do not practice accordingly. In cases where professional bodies regulate their own ethics, there are possibilities for such bodies to become self-serving and fail to follow their own ethical code when dealing with renegade members. This is particularly true of professions in which they have almost a complete monopoly on a particular area of knowledge. For example, until recently, the English courts deferred to the professional consensus on matters relating to their practice that lay outside case law and legislation. Professional means a person who has knowledge of some specific fields.

- c) Change the speech of the following sentences [3M]  
 i. They said that they were going to cinema. (Change into direct speech)  
 ii. He said that burglars had broken into his house the previous night. (Change into direct speech)  
 iii. She said, 'I don't want to come with you.' (Change into Indirect speech)

OR

10. a) What are Barnum's Suggestions for practicing economy? [7M]  
 b) Sum up Barnum's 'warnings' to men and women regarding social pressures. [7M]

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**I B.TECH I SEMESTER REGULAR & SUPPLEMENTARY EXAMINATIONS,****DECEMBER-2019**Subject: **BASIC ELECTRICAL & ELECTRONICS ENGINEERING**

Branch: Common to CE, ME &amp; MINING

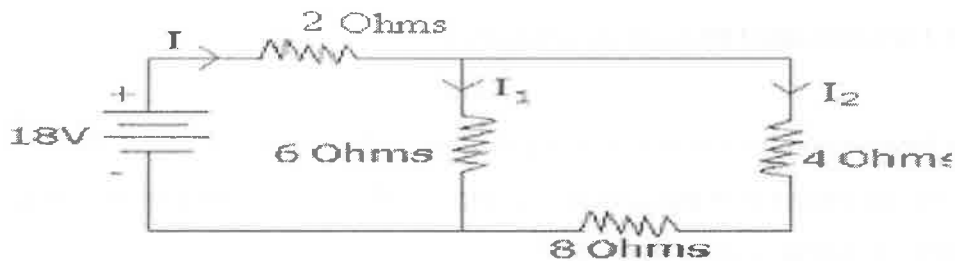
Time: 3 hours

Max. Marks: 70

Answer ALL questions of the following

5x14 M= 70M

1. a) For the circuit shown in fig., calculate the current in the various branches

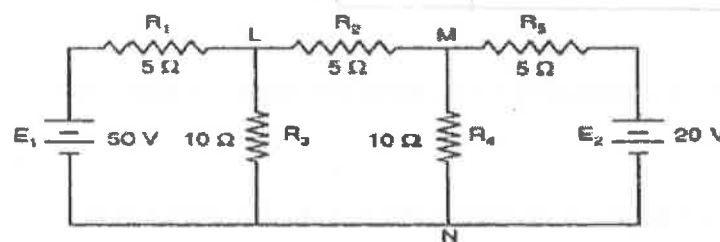


- b) Explain Resistance in series and parallel.

OR

2. a) Calculate the current flowing in R5 resistor

[8M]



- b) Explain Capacitance in series and parallel.

[6M]

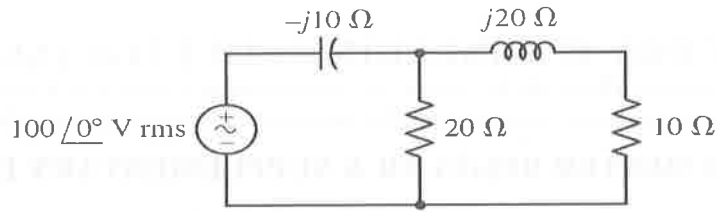
3. a) Find average value, rms value, Form factor and peak factor for sinusoidal current. [10M]

- b) A series circuit consumes 2000W at 0.5 leading power factor when connected to 230V, 50Hz AC supply. Calculate i) Current ii) KVA iii) KVAR [4M]

OR

4. a) Comparison between AC series and parallel circuits.

- b) Determine current in 10Ω resistor for the network shown in below figure



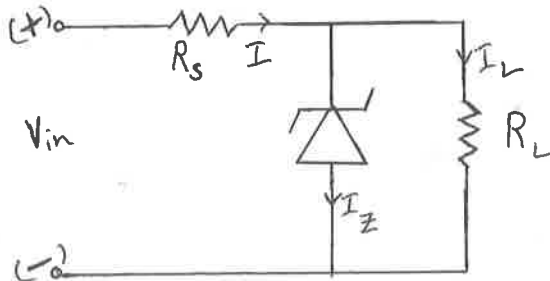
5. a) Explain working principle of Transformer.  
 b) Derive an e.m.f equation of a Single Phase Transformer.

OR

6. a) Explain the working principle of DC generator.  
 b) With the help of neat diagram, illustrate how Brake test is done on DC shunt Motor?  
 7. a) Explain energy band diagram of p-n diode [5M]  
 b) Explain Transition and Diffusion capacitances. [9M]

OR

8. a) Explain forward and reverse bias of P-N junction Diode with VI characteristics. [9M]  
 b) Determine the current flowing through the zener diode, if  $R_L=4000\Omega$ , Input voltage is 50 volts,  $R_S=1800\Omega$  & output voltage is 32 volts. [5M]



9. Explain Briefly about CE connection. Draw input and output characteristics and explain how they are obtained.

OR

10. Explain construction, principle of operation and V-I characteristics of JFET



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**I B.TECH I SEMESTER REGULAR & SUPPLEMENTARY EXAMINATIONS,  
DECEMBER-2019**

Subject: APPLIED PHYSICS

Branch: Common to **EEE, ECE, CSE&IT**

**Time: 3 hours**

**Max. Marks: 70**

**Answer ALL questions of the following**

**5x14 M= 70M**

1. a) Derive Schrodinger's time-independent wave equation for a free particle. [10M]  
b) Find the lowest energy of an electron confined in a box of side  $1 \text{ \AA}$  each. ( $h = 6.625 \times 10^{-34} \text{ J-s}$ ;  
rest mass of electron =  $9.1 \times 10^{-31} \text{ kg}$ ; charge of electron =  $6.632 \times 10^{-19} \text{ C}$ ). [4M]  
OR
2. a) Discuss wave – particle duality based on plank's black body radiation. [5M]  
b) Write any four properties of wave function ( $\Psi$ ). [5M]  
c) Calculate the kinetic energy of electron of wave length  $3.72 \times 10^{-10} \text{ m}$  ( $h = 6.625 \times 10^{-34} \text{ J-s}$ ;  
 $m = 9.1 \times 10^{-31} \text{ kg}$ ). [4M]
3. a) Explain the classical free electron theory of metals and mention its demerits. [6M]  
b) Derive the expression for density of states for free electron gas. [8M]  
OR
4. a) Distinction between Metals, Semiconductors and Insulators based on band theory of solids. [8M]  
b) Explain the concept of effective mass of electron with a neat diagram. [6M]
5. a) With neat diagram and suitable examples explain the difference between the direct and indirect  
band gap semiconductors. [8M]  
b) Write the basic working principles of light emitting diode and solar cell. [6M]  
OR
6. a) Explain the construction and V-I Characteristics of solar cell. [10M]  
b) Explain the formation of P-N junction diode. [4M]
7. a) Define Acceptance angle, Numerical aperture. Derive an expression for Numerical aperture and  
angle of acceptance of fiber. [8M]  
b) Calculate the angle of acceptance of a given optical fiber, if the refractive indices of the core and  
the cladding are 1.55 and 1.50, respectively. [6M]  
OR
8. a) Mention some applications of laser in four different fields. [6M]  
b) Distinguish between step-index and graded index fibres. [8M]
9. a) Discuss the Amperes law and its Maxwell's correction. [10M]  
b) Write the four Maxwell's equations both in integral forms. [4M]  
OR
10. a) State and explain Gauss' law of electrostatics and magnetostatics [8M]  
b) Derive the Maxwell's wave equations in free space. [6M]



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**I B.TECH I SEMESTER REGULAR & SUPPLEMENTARY EXAMINATIONS, DECEMBER-****2019**Subject: **ENGINEERING MECHANICS**Branch: Common to **CE, ME & MINING**

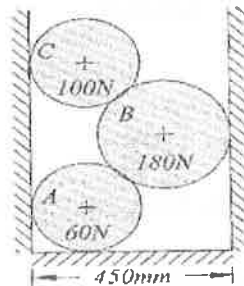
Time: 3 hours

Max. Marks: 70

Answer ALL questions of the following

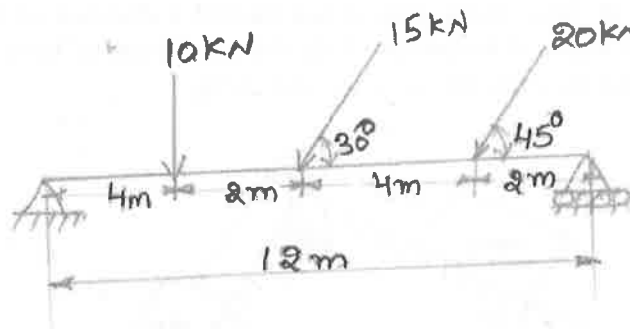
5x14 M= 70M

1. a) State and prove Varignon's principle. [4M]  
 b) Three cylinders are piled up in a ditch. The surfaces of the ditch are smooth. Find reaction between cylinders A and the vertical wall. The weights of cylinders A, B, C are 60 N, 180N, and 100N respectively and radius of A, B and C are 100 mm, 150 mm and 120 mm respectively. [10M]

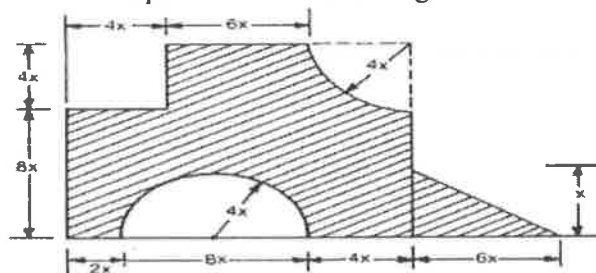


OR

2. The beam AB of span 12m as shown in fig. is hinged at A and is on roller at B. Determine the reactions at A and B for the loading shown in fig. [14M]



3. a) State theorem of Pappus. [4M]  
 b) Determine the centroid of the complex area shown in Fig. [10M]



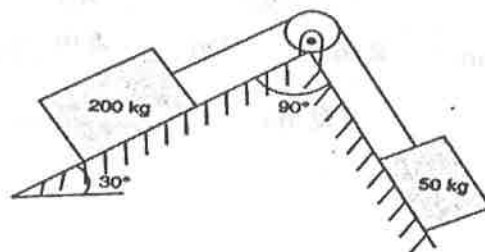
OR

4. An effort of 200 N is required just to move a certain body up an inclined plane of angle  $15^\circ$  the force acting parallel to the plane. If the angle of inclination of the plane is made  $20^\circ$  the effort required, again applied parallel to the plane, is found to be 230 N. Find the weight of the body and the coefficient of friction. [14M]
5. Derive the mass moment of inertia of a solid cylinder of radius R and height h about the centroidal axes. [14M]
- OR
6. Explain and prove the theorem of parallel axis theorem applied to moment of inertia. [14M]
7. Two weights 800N and 200N are connected by a thread and they move along a rough horizontal plane under the action of a force of 400N applied to the 800N weight as shown in fig. The coefficient of friction between the sliding surface of the weight and the plane is 0.3. Using D'Alembert's principle determine the acceleration of the weight and tension in the thread. [14M]



OR

8. A small steel ball is shot vertically up wards from the top of a building 25m above the ground up with an initial velocity of 18m/s. [14M]
- i) In what time it will reach the maximum height.
  - ii) How height above the building will the ball rise.
  - iii) Compute the velocity with which it will strike the ground and the total time it is in motion.
9. a) Derive work energy equation for translation? [4M]
- b) A block and pulley system is shown in the Fig.4. The pulley is friction less. Find the tension in the cable and the velocity of 50kg block after it has moved a distance of 1.5m when the system starts from rest. Neglect the mass of the pulley. Take the coefficient of kinetic friction between the blocks and plane as 0.25. Use the principle of work and energy. [10M]



OR

10. Explain and prove the expression for work done by a spring. [14M]

Code No.: 80501

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**I B.TECH I SEMESTER REGULAR & SUPPLEMENTARY EXAMINATIONS,  
DECEMBER-2019**

Subject: PROGRAMMING FOR PROBLEM SOLVING

Branch: Common to EEE, ECE, CSE&IT

**Time: 3 hours**

**Max. Marks: 70**

**Answer ALL questions of the following**

**5x14 M= 70M**

1. a) What are the programming development steps? Explain. [5M]
- b) What is a preprocessor directive? Explain with an example. [5M]
- c) What are formatted input and output statements in C? Give suitable examples. [4M]

OR

2. a) Describe the structure of a C program. [5M]
- b) Draw the flow chart to find average of "n" numbers. [5M]
- c) What is operating system? Draw the block diagram of computer system. [4M]

3. a) Explain about nested if. [5M]
- b) Write a C program to find GCD of any given two numbers. [5M]
- c) Distinguish between if and switch statements. [4M]

OR

4. a) Write a C program to find greatest and smallest number among the list of integers. [6M]
- b) Explain about decision making and branching with examples. [4M]
- c) How to declare and initialize multi-dimensional arrays. Give suitable example. [4M]

5. a) Explain about the pointer arithmetic with examples. [7M]
- b) Write a C program to find whether the given string is palindrome or not. [7M]

OR

6. a) How to create array of strings? Explain with suitable example. [6M]
  - b) Write a C program to find sum of array elements using pointers. [8M]
7. a) Differentiate between structure and union. [5M]
  - b) How to pass pointer variables as function arguments? Explain with examples. [5M]
  - c) Explain the concept of nested structures with suitable examples. [4M]

OR

8. a) What are the limitations of recursion? Write a C program to find factorial of a given number using recursion. [6M]
- b) Write a C program to calculate total and average marks in a class of "n" students using structure. [8M]
9. a) Write a C program to perform file operations. [4M]
- b) Sort the following 10 elements using bubble sort technique. Write the algorithm for the same. [10M]
- 85 53 96 35 27 87 37 12 90 23.

OR

10. a) Write a procedure for selection sort for a given list of integers 5 10 4 3 0 1 12 20 2 7. [8M]
- b) What are the various modes in which a file can be opened? [6M]

Code No.: 80301

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**I B.TECH I SEMESTER REGULAR END EXAMINATIONS, DECEMBER-2019**

Subject: ENGINEERING GRAPHICS

Branch: Common to CE& MINING

Time: 3 hours

Max. Marks: 70

Answer ALL questions of the following

5x14 M= 70M

1. Construct an ellipse when the distance of the focus from the directrix is equal to 80 mm and eccentricity is  $\frac{3}{5}$ . [14M]

OR

2. a) Draw the projections of points in the following positions: [6M]
- (i) Point A is 25 mm above HP and 25mm in front VP.
  - (ii) Point B is 40 mm behind VP and 15 mm below HP.
  - (iii) Point C is on the HP and 30mm behind VP.

b) Draw the path that would be traced by an end of the string, when it is unwound from the circumference of the disc, which is in the form of a square having a 30 mm side. [8M]

3. Draw the projections of a 75 mm long straight line in the following positions: (i) Parallel to the both HP & VP and 25 mm from each (ii) Perpendicular to the HP and 20 mm in front of the VP and its one end 15 mm above the HP (iii) Inclined at  $45^\circ$  to the VP, in the HP and its one end in the VP. [14M]

OR

4. A line PQ 80 mm long is inclined at  $30^\circ$  to HP and  $45^\circ$  to VP. It's one end P is in the HP and 35 mm in front of VP. Draw its projections. [14M]

5. Draw the projection of a pentagonal prism, base of 25 mm side and 100 mm long, resting on one of its rectangular faces on the ground, with the axis inclined at  $45^\circ$  to the VP. [14M]

OR

6. A triangular prism, base 30 mm side & axis 50 mm long is lying on the ground on one of its rectangular faces with the axis inclined at  $30^\circ$  to the VP. It is cut by a horizontal plane at a distance of 15 mm above the ground. Draw its front view & sectional top view. [14M]

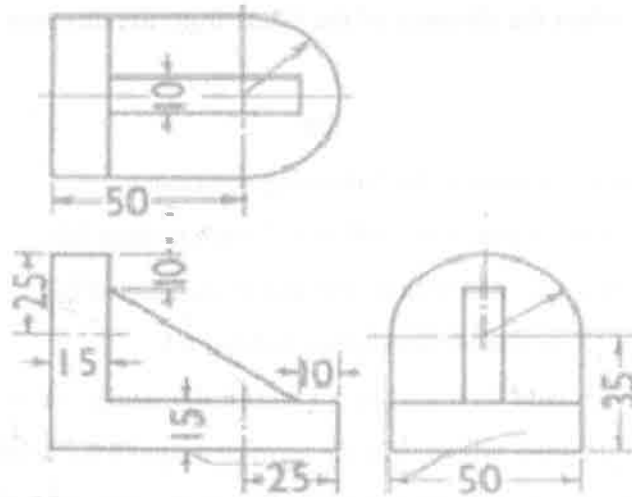
7. a) Draw the development of lateral surface of cylinder of base 40 mm diameter and 70mm longaxis. [07M]

b) Draw the development of a cone of base 30 mm radius and 80 mm long axis. [07M]

OR

8. A solid is in the form of a cylinder of base diameter 50 mm up to a height of 60 mm and Draw the isometric projection of the solid. [14M]

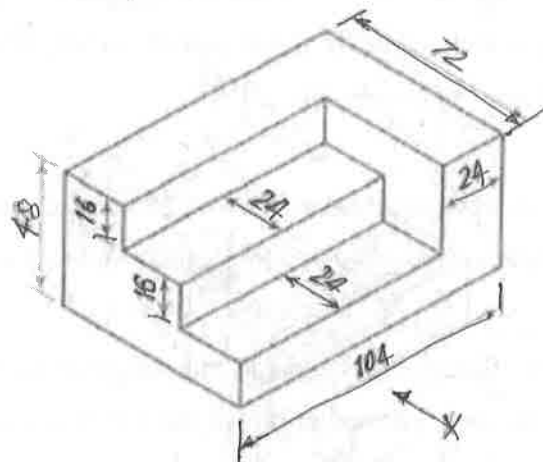
9. Draw the isometric projection of the given orthographic views of a casting. [14M]



(All dimensions are in mm)

OR

10. Draw the elevation, top view and side view of the objects shown in figures. [14M]



(All dimensions are in mm)



Code No.: 80301

MR18

**MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)**

(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)  
Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajiri (Dist), Hyderabad

**I B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, DECEMBER-2019**

Subject: ENGINEERING GRAPHICS

Branch: Common to CE, ME & MINING

Time: 3 hours

Max. Marks: 70

Answer ALL questions of the following

5x14 M= 70M

1. Construct an ellipse when the distance of the focus from the directrix is equal to 80 mm and eccentricity is  $3/5$ . [14M]

OR

2. a) Draw the projections of points in the following positions: [6M]
- (i) Point A is 25 mm above HP and 25mm in front VP.
  - (ii) Point B is 40 mm behind VP and 15 mm below HP.
  - (iii) Point C is on the HP and 30mm behind VP.
- b) Draw the path that would be traced by an end of the string, when it is unwound from the circumference of the disc, which is in the form of a square having a 30 mm side . [8M]
3. Draw the projections of a 75 mm long straight line in the following positions: (i) Parallel to the both HP & VP and 25 mm from each (ii) Perpendicular to the HP and 20 mm in front of the VP and its one end 15 mm above the HP (iii) Inclined at  $45^\circ$  to the VP, in the HP and its one end in the VP. [14M]

OR

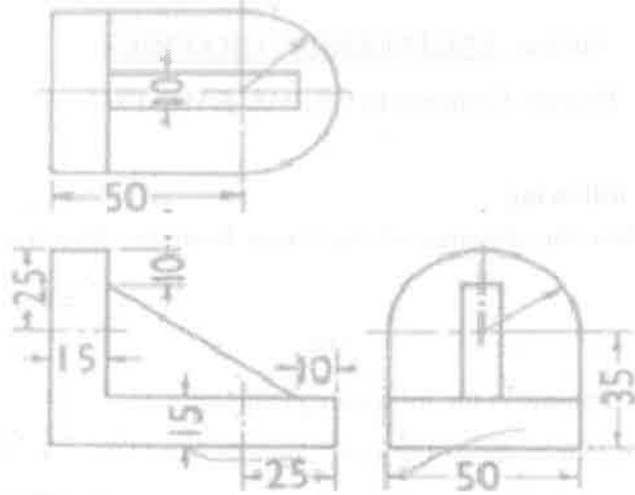
4. A line PQ 80 mm long is inclined at  $30^\circ$  to HP and  $45^\circ$  to VP. It's one end P is in the HP and 35 mm in front of VP. Draw its projections. [14M]
5. Draw the projection of a pentagonal prism, base of 25 mm side and 100 mm long, resting on one of its rectangular faces on the ground, with the axis inclined at  $45^\circ$  to the VP. [14M]

OR

6. A triangular prism, base 30 mm side & axis 50 mm long is lying on the ground on one of its rectangular faces with the axis inclined at  $30^\circ$  to the VP. It is cut by a horizontal plane at a distance of 15 mm above the ground. Draw its front view & sectional top view. [14M]
7. a) Draw the development of lateral surface of cylinder of base 40 mm diameter and 70mm long axis. [07M]
- b) Draw the development of a cone of base 30 mm radius and 80 mm long axis. [07M]

OR

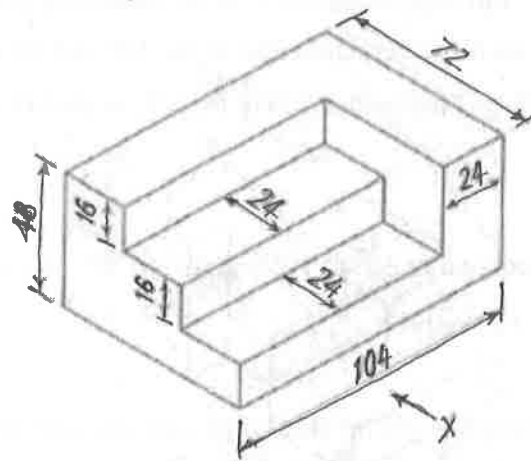
8. A solid is in the form of a cylinder of base diameter 50 mm up to a height of 60 mm and Draw the isometric projection of the solid. [14M]
9. Draw the isometric projection of the given orthographic views of a casting. [14M]



(All dimensions are in mm)

OR

10. Draw the elevation, top view and side view of the objects shown in figures. [14M]



(All dimensions are in mm)

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MR18

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Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

**I B.TECH I SEMESTER REGULAR END EXAMINATIONS, DECEMBER-2019**

Subject: ENGINEERING GRAPHICS

Branch: ME

Time: 3 hours

Max. Marks: 70

Answer ALL questions of the following

5x14 M= 70M

1. Construct an Ellipse when the distance of the focus from the directrix is equal to 70 mm and eccentricity is  $\frac{3}{4}$ . Draw a normal and tangent to the curve from a point on it at a distance of 40 mm from the focus. [14M]

OR

2. a) Construct a regular octagon with 75 mm side. [7M]  
b) Draw a regular hexagon about a given circle of 60 mm diameter. [7M]
3. A regular pentagon of 25 mm side has one side on the ground. Its plane is inclined at  $45^\circ$  to the HP. Draw the projections. [14M]

OR

4. A line PQ 75 mm long is inclined  $40^\circ$  HP and  $30^\circ$  VP. It's one end P 20 mm above HP and 25 mm in front of VP. Draw the projections. [14M]
5. Draw the projections of a hexagonal pyramid, base 30 mm side and axis 60 mm long, has an edge of its base on the ground, its axis is inclined at  $30^\circ$  to the HP and parallel to VP. [14M]

OR

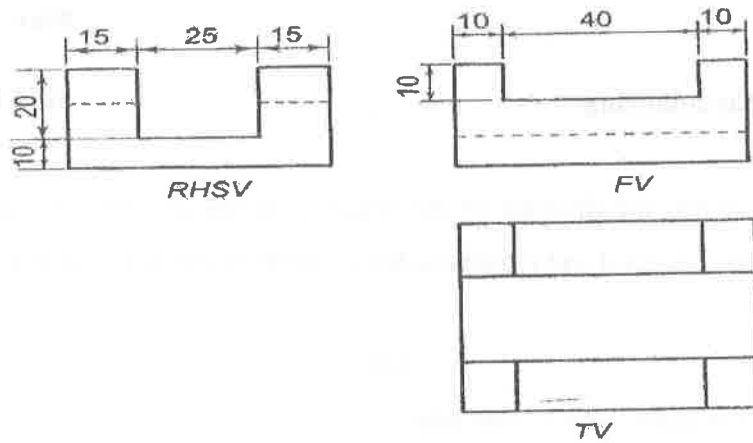
6. A cylinder of base 40 mm diameter & 60 mm height, having its axis vertical is cut by a plane perpendicular to VP and inclined at  $45^\circ$  to the HP, intersecting the axis 30 mm above the base. Draw the sectional top view and obtain the true shape of the section. [14M]

7. Draw the isometric projection of a pentagonal pyramid of side 30 mm and axis 70 mm height. [14M]

OR

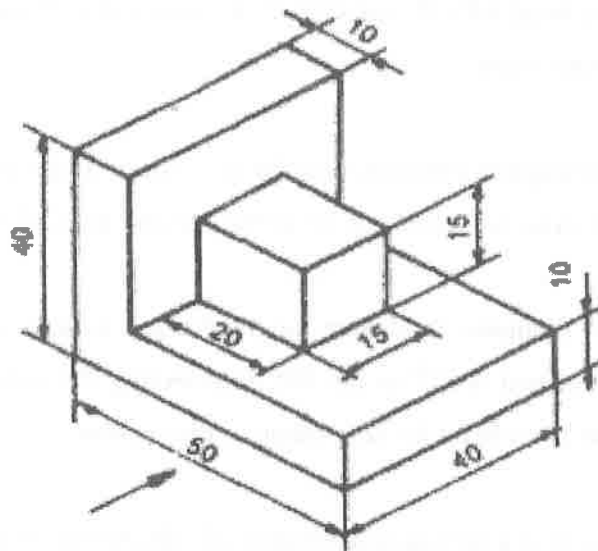
8. A cylinder of base 40 mm diameter & 60 mm height is resting on its base on HP. Draw the development of the cylinder. [14M]

9. Draw the isometric projection of the given orthographic views of a casting. [14M]  
 (All dimensions are in mm)



OR

10. Draw the Orthographic projection for the given isometric view. [14M]  
 (All dimensions are in mm)



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Branch: ME

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OR

4. A line PQ 75 mm long is inclined  $40^\circ$  HP and  $30^\circ$  VP. It's one end P 20 mm above HP and 25 mm in front of VP. Draw the projections. [14M]
5. Draw the projections of a hexagonal pyramid, base 30 mm side and axis 60 mm long, has an edge of its base on the ground, its axis is inclined at  $30^\circ$  to the HP and parallel to VP. [14M]

OR

6. A cylinder of base 40 mm diameter & 60 mm height, having its axis vertical is cut by a plane perpendicular to VP and inclined at  $45^\circ$  to the HP, intersecting the axis 30 mm above the base. Draw the sectional top view and obtain the true shape of the section. [14M]

7. Draw the isometric projection of a pentagonal pyramid of side 30 mm and axis 70 mm height.

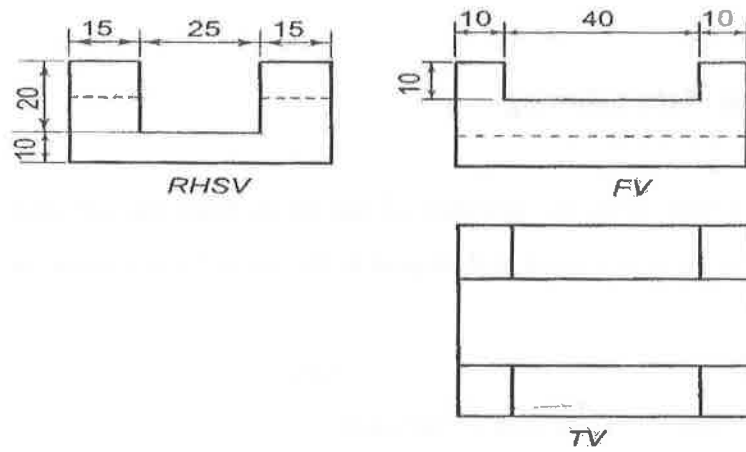
[14M]

OR

8. A cylinder of base 40 mm diameter & 60 mm height is resting on its base on HP. Draw the development of the cylinder. [14M]

9. Draw the isometric projection of the given orthographic views of a casting. [14M]

(All dimensions are in mm)



OR

10. Draw the Orthographic projection for the given isometric view. [14M]

(All dimensions are in mm)

