R17

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)
I B.Tech I Semester Supplementary Examinations, June-2022
Computer Programming with C
(ME, ECE, CSE, IT)

Roll No										

Time: 3 hours   **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.
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1	Describe the process of program development.	**[14M]**
2	What are the three differences between the conversion codes for input formatting and output formatting? Explain them with examples.	**[14M]**
3	Discuss various storage classes of C.	**[14M]**
4	Discuss the different ways of passing arrays as a parameter to a function.	**[14M]**
5	Discuss dynamic memory management in C.	**[14M]**
6	Define an array ? Explain different types of an array with example.	**[14M]**
7	Explain in detail applications of pointers with examples.	**[14M]**
8	Define a structure of arrays. Write code to read values in to this structure.	**[14M]**

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MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)
I B.Tech I Semester Supplementary Examinations, June-2022
Engineering Chemistry
(EEE, ECE & IT)

Roll No										

Time: 3 hours   **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.
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1 Write the construction and working function of Calomel electrode. Explain the **[14M]** determination of pH using Calomel electrode.

2 Discuss the construction, working function and applications of H_2-O_2 fuel cells. **[14M]**

3 Explain the chemical reactions involved in electrochemical corrosion **[14M]** (Wet corrosion).

4 Discuss various factors effecting on rate of corrosion. **[14M]**

5 Explain properties of lubricants: a) Flash &fire part **[5M]**

b) Cloud & pour point **[5M]**

c) Viscosity and viscosity index. **[4M]**

6 What are biodegradable polymers? Describe the preparation, properties & **[14M]** applications of Polylactic acid.

7 What is Desalination of water? Explain reverse Osmosis method. **[14M]**

8 Explain refining of petroleum with a neat diagram. **[14M]**

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MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
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I B.Tech I Semester Supplementary Examinations, June-2022
Engineering Drawing
(ECE, CSE, IT)

Roll No										

Time: 3 hours   **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.
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1	Draw epicycloid of a rolling circle 40mm diameter which rolls outside of the circle of 150 mm diameter for one complete revolution clockwise. Draw the tangent and normal at any point on the curve.	**[14M]**
2	Construct a diagonal scale showing hectometer, decameter and meter in which 1 cm long line represent 50m and long enough to measure up to 1km. Find the R.F and mark a distance of 5 Hectometer, 3 decameter, 7m on it.	**[14M]**
3	A point A is 30 mm above the HP and in the first quadrant. Its shortest distance from the intersection of both the reference planes is 50 mm. Draw the projections of the point and determine its distance from the VP.	**[14M]**
4	Draw the projections of straight line AB 60 mm long parallel to H.P and inclined at an angle of 40° to V.P. The end A is 30 mm above HP and 20mm in front of VP.	**[14M]**
5	A pentagonal plane of sides 25mm is having a side both on HP and VP. The surface of the lamina is inclined at an angle of 60° with HP. Draw the top and front views of the plane.	**[14M]**
6	A pentagonal pyramid, base 25mm side and axis 50 mm long has one of its triangular faces in the VP and the edge of the base contained by that face makes an angle of 30° with the HP. Draw its projections.	**[14M]**
7	Draw isometric view of a hexagonal prism having a base with 30 mm side and a 70mm long axis resting on its base on the HP. With an edge of the base parallel to the VP when (a) using Box Methods (b) using Off-set Method?	**[14M]**

8   Draw the front view, Top view and Side view of the given figure?   **[14M]**
         All Dimensions are in MM.
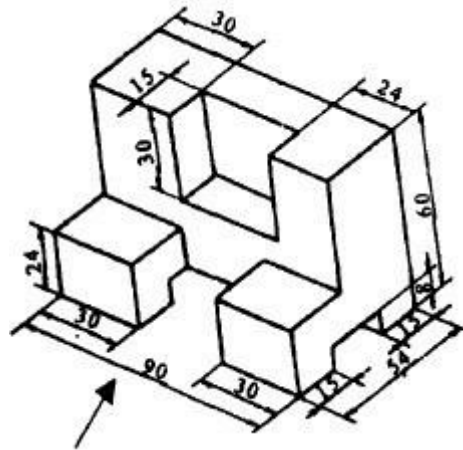
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MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
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I B.Tech I Semester Supplementary Examinations, June-2022
Engineering Mechanics
(ME)

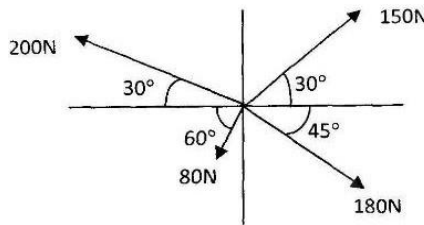| Roll No										

Time: 3 hours   **Max. Marks: 70**
Answer Any **Five** Questions
All Questions carries equal marks.
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1   a) Explain the terms: i) Moment of force   ii) Resultant of force systems.   **[4M]**
   b) Determine the resultant of concurrent forces shown in the figure below.

[10M]

2   a) What do you understand by the term "parallel forces"? Discuss their classification?   **[4M]**
   b)A cord supported at A and B carries a load of 10 kN at D and a load of W at C as shown   **[10M]**
   in figure. Find the value of W so that CD remains horizontal.
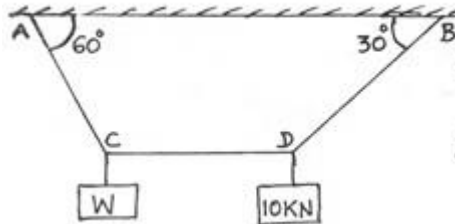
3   a)Define free body diagram, Transmissibility of a force and resultant of a force.   **[4M]**
   b) Find the tension in each cable for the given Figure

[10M]
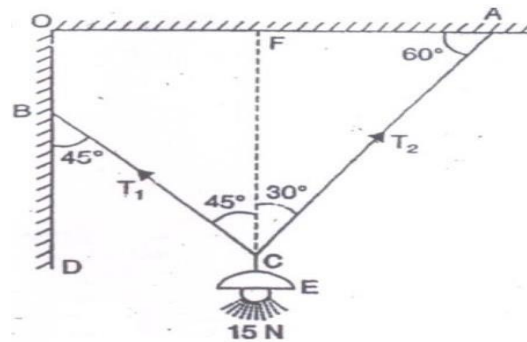
4 a). State the laws of friction   **[4M]**
b) The 500N block shown in fig is in contact with the incline. The coefficient of static **[10M]**
friction is 0.25. Compute the horizontal force P necessary to
(a) just start the block up the incline or
(b) just prevent motion down the incline.
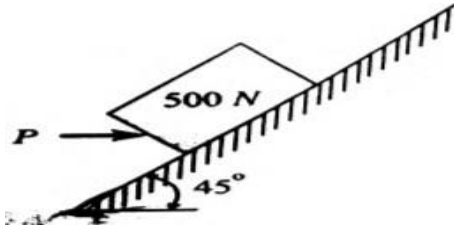
5 a) Find the centroid of the plane lamina of L-shape having base length 35mm and height **[6M]**
45mm?.   **[8M]**
b)Locate the centroid of shaded area as shown in Figure
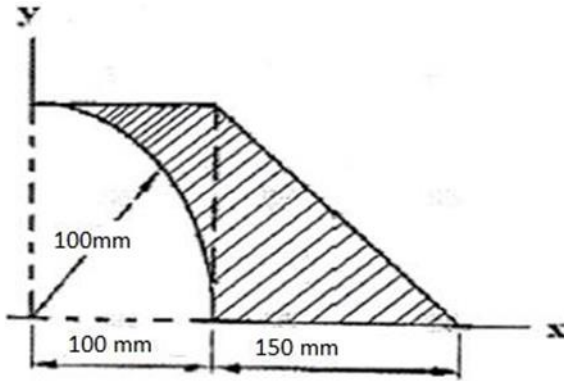
6 a) Explain the significance of the Pappus theorms.   **[4M]**
b)Determine the centroid of the area shown in figure   **[10M]**
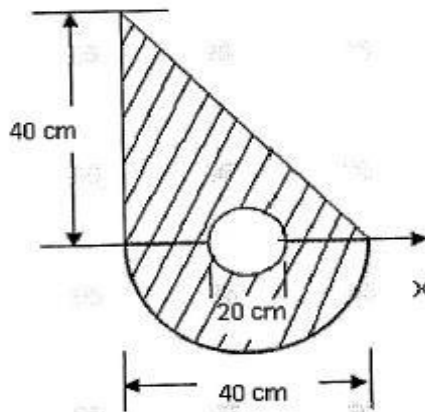
7 a) Define 'Mass moment of inertia' and 'Radius of gyration'.   **[4M]**
b)Determine the moment of inertia of a rectangular plate of size a * b and thickness' t'   **[10M]**
about its centroidal axes

8 A bullet weighs 0.5 N and moving with a velocity of 400 m/sec hits centrally a 30 N   **[14M]**
block of wood moving away at 15m/sec and gets embedded in it. Find the velocity of
bullet after the impact and amount of kinetic energy lost.

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MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
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I B.Tech I Semester Supplementary Examinations, June-2022
Engineering Physics-I
(ME, CSE & IT)

Roll No										

Time: 3 hours   **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.
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1	A. Define the Interference and describe the theory of interference fringes	**[6M]**
	B. Obtain the conditions for the interference of light reflected by a thin parallel film.	**[8M]**
2	A. What is meant by diffraction of light	**[4M]**
	B. Explain the resolving power of the plane diffraction grating. Obtain an expression for the resolving power of grating	**[10M]**
3	**A.** What are the characteristics of lasers	**[4M]**
	B. Explain the construction and working of He-Ne laser with relevant diagrams?	**[10M]**
4	A. Draw the block diagram of an optical fiber communication system and explain the function of each block	**[8M]**
	B. What is attenuation? Explain about optical fiber losses?	**[6M]**
5	A. What is the physical significance of wave function ψ.	**[6M]**
	B. Derive time independent Schrodinger wave equation.	**[8M]**
6	A. Define matter waves. Write the properties of matter waves.	**[4M]**
	B. Explain construction and working of G.P experiment to prove that the moving matter is associated with a wave.	**[10M]**
7	Discuss the Kronig-Penny Model in detail with energy spectrum of electron .	**[14M]**
8	A. What is donors and acceptors give two examples for each	**[4M]**
	B. Derive an expression for the carrier concentration of an n-type semiconductor. and how Fermi level varies with temperature and doping concentration	**[10M]**

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