AR13 $\boxed{\text{Set-01}}$

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

PART-A

Answer all questions 					**[10x1= 10M]**

1. (a) What is degree of polymerization?
   (b) Why gypsum is added during manufacturing of cement?
   (c) Distinguish between soft water and hard water.
   (d) What is effect of pH on corrosion?
   (e) What is galvanic series?
   (f) Define cetane number.
   (g) What is aniline point?
   (h) What is Phase Transfer Catalyst?
   (i) Write one application of nanomaterials in bio-medical field.
   (j) How solar energy is harnessed by reflection?

PART-B

Answer one question from each unit 			**[5x12=60M]**

Unit-I

2. (a) Explain addition polymerization and condensation polymerizations with suitable [4M]
   examples.
   (b) Write a short note on extrusion moulding. 				[4M]
   (c) Distinguish between dry and wet processes of manufacturing of cement. 		[4M]

(OR)

3. (a) Explain the functions of different compounding materials added to plastic resins with
   suitable examples.
   (b) Describe setting and hardening of Portland cement. 			[7M+5M]

Unit-II

4. (a) Mention various units use for expression of hardness of water and show their relation.
   (b) What is Zeolite? How hard water is softened by Zeolite method, mention its
   advantages and disadvantages and explain the regeneration of exhausted zeolite.
   						(OR) 				[3M+9M]
5. (a) Explain how micro organisms from water are removed by chlorination and
   ozonisation.
   (b) Calculate the temporary and total hardness of a water sample containing $Mg(HCO_3)_2$
   = 73 mg/L, $Ca(HCO_3)_2$ = 162 mg/L, $MgCl_2$ = 95 mg/L, $CaSO_4$ = 136 mg/L. [6M+6M]

AR13 Set-01

Unit-III

6. (a) Explain evolution of hydrogen type and absorption of oxygen type corrosions in metals.
   (b) Describe impressed current cathodic protection. [8M+4M]

(OR)

7. (a) Distinguish between dry corrosion and wet corrosion.
   (b) What happens and why it happens in the following cases?
     i) Iron sheets riveted with copper bolts
     ii) Zinc plate placed below the ship
     iii) Comparison of rusting of iron in saline water and in ordinary water. [6M+6M]

Unit-IV

8. (a) Describe the Bergius process for the synthesis of petrol.
   (b) Write a short note on classification of lubricants. [6M+6M]

(OR)

9. (a) What is reforming of petrol? Give any two reforming reactions? How does reforming increases octane number.
   (b) Explain mechanism of thin film lubrication. [7M+5M]

Unit-V

10. (a) What is solar panel? Discus the working of solar panel with suitable illustrations.
    (b) Discus any four principles of green chemistry?
    (c) Give a brief account on properties of nanomaterilas. [4M+4M+4M]

(OR)

11. (a) What is the reason behind global warming? What are your suggestions to reduce it?
    (b) Discus any four applications of green chemistry.
    (c) Discus the production of carbon nano tubes by chemical vapour deposition method. [4M+4M+4M]

13ME1001

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I B. Tech II Semester Supplementary Examinations, August- 2015
ENGINEERING DRAWING
(Common to EEE & ECE)

Time: 3 hours   **Max Marks: 70**
PART- A
Answer all questions   **[10 X 1=10M]**

1. (a) What are the two systems of placing dimensions on a drawing?
   (b) What is the application of a diagonal scale?
   (c) When measurements are desired in three units, _____ scale is used.
   (d) When a line is perpendicular to one of the planes, it is _____ to the other plane.
   (e) What do you mean by eccentricity?
   (f) What is an oblique plane?
   (g) Define the term pyramid
   (h) What are the solids of revolution?
   (i) A circle in isometric projection appeared as _____.
   (j) State the applications of isometric projections

Answer one question from each unit   **[5 X 12 =60M]**
UNIT - I

2. Construct a forward vernier scale of RF=1/2500 and long enough to measure 300 meters. Show on this scale a distance of 157 meters.

(OR)

3. The foci of an ellipse are 100 mm apart and the minor axis is 70 mm long. Determine the length of major axis and draw the ellipse by concentric circle method.

UNIT –II

4. Two points *A* and *B* are in the H.P. The point *A* is 30 mm in front of the V.P., while *B* is behind the V.P. The distance between their projectors is 75 mm and the line joining their top views makes an angle of 45^0 with *xy*. Find the distance of the point *B* from the V.P.

(OR)

5. Two pegs on a wall are 4.5 meters apart. The distance between the pegs measured parallel to the floor is 3.6 meters. If one peg is 1.5 meters above the floor, find the height of the second peg and inclination of the line joining the two pegs, with the floor.

UNIT –III

6. Draw the projections of a circle of 50 mm diameter, having its plane vertical and inclined at 30^0 to the VP. Its centre is 30 mm above HP and 20 mm in front of the VP.

(OR)

7. A square ABCD of 50 mm side has its corner A in the HP , its diagonal AC inclined at 30^0 to the HP and the diagonal BD inclined at 45^0 to the VP and parallel to the HP. Draw its projections.

UNIT –IV

8. Draw the projections of a pentagonal prism, base 25 mm side and axis 50 mm long, resting on one of its rectangular faces on the HP, with the axis inclined at 45^0 to the VP.

(OR)

9. Draw the projections of a cone, base 75 mm diameter and axis 100 mm long on the H.P. on one of its generators with the axis parallel to the V.P.
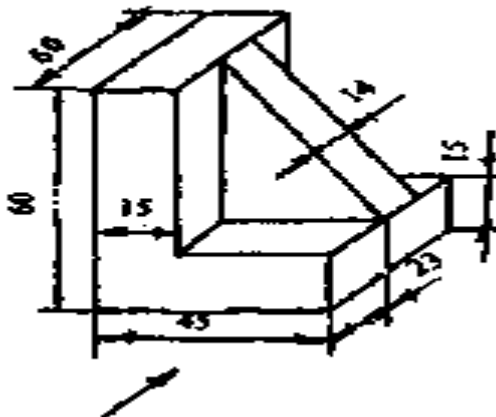
UNIT -V

10. Draw the isometric view of machine part shown in three views in figure.
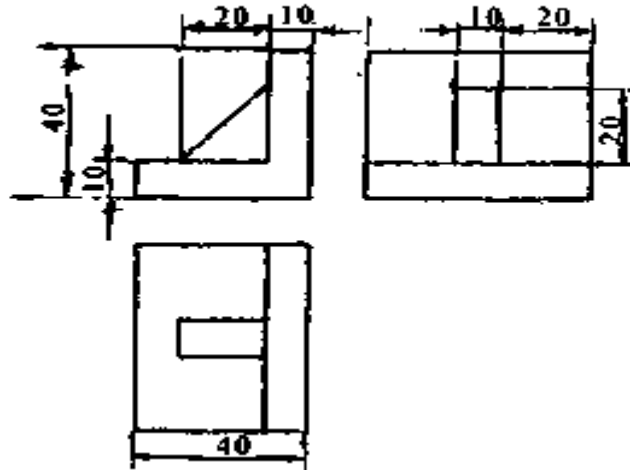
(OR)

11. An isometric view of a block is shown in figure. Draw the front view and top view according to first angle projection method.

2 – 2

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