AR13   Set-01

Code: 13BS1005

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I B.Tech II Semester Regular Examinations, August, 2014
ENGINEERING CHEMISTRY
(Common to ME, CE, CSE & IT)

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

PART-A

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

 Answer all questions
1.   (a) What is functionality of monomer?
      (b) What is sedimentation?
      (c) What is desalination?
      (d) "A copper equipment should not possess a small steel bolt" explain.
      (e) What are corrosion inhibitors?
      (f) "Gasoline containing tetra ethyl lead is used in internal combustion engines". Give
          reason.
      (g) What is neutralization number?
      (h) Mention raw materials used in manufacturing of cement.
      (i) What is meant by `top down 'in the preparation of nano materials?
      (j) Write any two principles of green chemistry.

PART-B

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

UNIT-I
2. a. Differentiate thermosetting and thermoplastic resins.   6M
   b. Write the preparation, properties and uses of i) Teflon and ii) polyester.   2x3=6M
                                      (**OR**)
3. a. What is meant by compounding of plastics? Explain the function of each constituent with
      suitable examples.   6M
   b. Explain the reactions of setting and hardening of cement.   6M

UNIT-II
4. a. Explain lime soda process giving emphasis to chemical equations.   6M
   b. Define temporary and permanent hardness of water.   3M
   c. Explain break point of chlorination.   3M
                                     (**OR**)

5. a. Calculate the quantity of lime and soda required for softening 50,000 lt of water containing the following salts per litre. $Ca(HCO_3)_2$ =8.1 mg ; $Mg(HCO_3)_2$ =7.5 mg ; $CaSO_4$ =13.6 mg ; $MgSO_4$ =12.0 mg ; $MgCl_2$ =2.0 mg; and NaCl= 4.7mg. atomic weights of C=12, H=1, Mg=24, S=32,O=16,Na=23, Cl=35.5   5M
   b. How to determine the hardness of water using EDTA?   7M

UNIT-III

6. a. Discuss the importance of design and material selection for corrosion prevention.   5M
   b. Explain theory of dry corrosion.   7M
(OR)
7. a. Explain Cathodic protection with neat diagrams.   6M
   b. Write brief notes on i) Galvanic corrosion and ii) Concentration cell corrosion   2x3=6 M

UNIT-IV

8. a. What is meant by cracking of petroleum? Describe, with a neat diagram, the fixed- bed catalytic cracking process.   8M
   b. Define state the significance of i) aniline point and ii) Flash point   2x2=4 M
(OR)
9. a. State functions of lubricants and discuss mechanism of extreme pressure lubrication.   6M
   b. What is reforming of petrol? Give any four reforming reactions.   6M

UNIT-V

10. a. Write preparation, properties and uses fullerenes.   6M
    b. Discuss any four applications of green chemistry.   6M
(**OR**)
11. a. Discuss production of nanotubes by Arc Discharge method and their applications.   8M
    b. What is green house effect? What are the advantages and disadvantages of the effect? 4M

2 – 2

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Code: 13ME1001

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

I B. Tech II Semester Regular Examinations, August 2014

ENGINEERING DRAWING

(Electronics and Communication Engineering)

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

PART-A

Answer all Questions   **[10 X 1 = 10M]**

1. a) What is a Representative Fraction?
   b) Define Eccentricity
   c) Discuss the areas where engineering drawing can be applied.
   d) Write any four dimension rules
   e) List out any one difference between First and Third angle Projections
   f) Sketch Various types of lines used in drawing
   g) State the name of the conic if eccentricity (e) =1.
   h) What is a frustum
   i) What is the differences between Isometric view and Isometric Projection.
   j) Invisible features are represented with _____ lines.

PART – B

Answer one Question from Each Unit   **[5 X 12 = 60M]**

Unit-I

2. Construct a diagonal scale 1/50, showing metres, decimetres and centimetres, to measure upto 5 metres. Mark a length 4. 75 m on it.

(OR)

3. Draw a Conic Section with eccentricity 2/3 and the Distance between Fixed Line to Fixed Point is 40mm. Draw Tangent and Normal at a point 35 mm from focus

Unit-II

4. Draw the Projections of the Following Points
   (a) Point Q is 25 mm. above H.P and 35 mm. behind VP
   (b) Point R is 32 mm. below H.P and 45 mm behind VP
   (c) Point Sis 35 mm. below H.P and 42 mm in front of VP
   (d) Point T is in H.P and 30 mm. is behind VP

(OR)

5. a) A 100mm long line is parallel to and 25mm above HP. Its two ends are 25mm and 40mm in front of VP respectively. Draw its projections and find its inclination with VP.   6M

   b) Two monkeys fixed on a wall are 6m apart. The distance between the monkeys measured parallel to the floor is 4m. If one monkey is 1.5m above the floor, find the height of the second monkey and inclination of the line joining the two monkeys with the floor.   6M

Unit-III

6. A rhombus has its diagonals 100 and 60 long. Draw the projections of the rhombus when it is so placed that its top view appears to be a square of diagonals 60 long, and the vertical plane through the longer diagonal makes 30 degrees with the VP.

(OR)

7. Draw the projections of a circle of 70mm diameter having the end A of diameter AB in the HP, the end B in the VP and surface inclined at 30 degrees to the HP and 60 degrees to VP.

Unit-IV

8. A square prism with side of base 30mm and axis 50mm long has its axis inclined at 60^0 to HP and resting on one of its base edge.

(OR)

9. A cone of base of diameter of 50 and height 70 has one of its generators in HP and axis is parallel to VP. Draw the projections.

Unit-V

10. Draw the isometric view of the solids whose orthographic views are as given in Fig 1.

(OR)

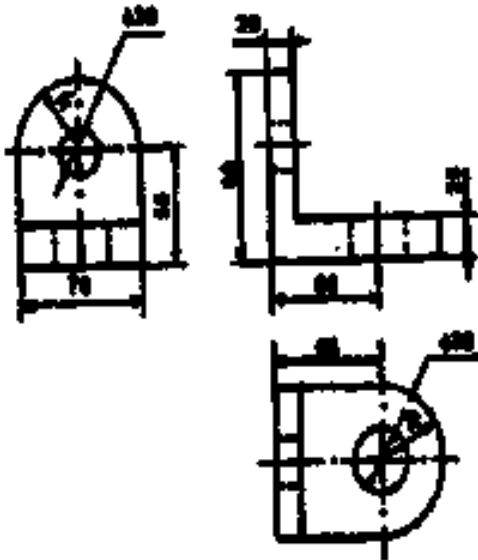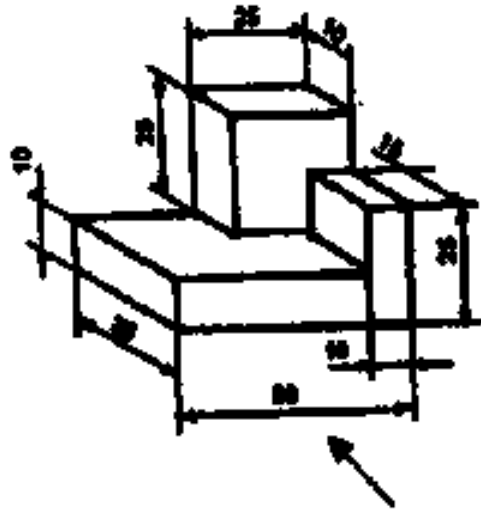11. Draw the Front view, Top view and Side view for the object given in Fig 2.

Fig 1.   Fig 2.