PVP 14

Code: CE1T3, CS1T3, EC1T4, IT1T3

I B. Tech - I Semester – Regular/Supplementary Examinations
November 2017

ENGINEERING CHEMISTRY
(Common for CE, CSE, ECE & IT)

Duration: 3 hours Max. Marks: 70

PART – A

Answer ***all*** the questions. All questions carry equal marks

11 x 2 = 22 M

1.

a) Define hardness of water? What are the causes of hardness?
b) Which one is most widely used chlorination process?
c) How the plastics are classified?
d) Write the name and structure of bullet proof plastic.
e) Give the applications of nonmaterial in food industries.
f) Write few characteristics of fullerenes.
g) What are the main functions of the paint?
h) Steel screw in a brass marine hardware corrodes. Explain.
i) Give the importance of pilling bed worth rule.
j) What are liquid crystals?
k) What are high TC super conductors?

PART – B

Answer any ***THREE*** questions. All questions carry equal marks.
3 x 16 = 48 M

2.a) One liter of water from an underground reservoir in Tirupathi Town in Andhra Pradesh showed the following analysis for its contents: $Mg(HCO_3)_2$ = 42 mg; $Ca(HCO_3)_2$ = 146mg; $CaCl_2$= 71mg; NaOH = 40mg; $MgSO_4$ = 48 mg; organic impurities = 100 mg; Calculate temporary, permanent and total hardness of this sample of 10,000 liters of water. 8 M

b) How is the exhausted resin regenerated in an ion exchanger? What are the merits and demerits of ion exchange method? 8 **M**

3.a) Mention the compounding materials used in plastics indicating their function and give one example for each**?** 8 **M**

b) Discuss the preparation, properties and applications of Bakelite. 8 **M**

4.a) What is green Chemistry? What are the twelve principles of green chemistry? 8 **M**

b**)** Green Chemistry is sustainable chemistry- Explain the statement**.** **4 M**

c) What do you mean by nano materials? Explain different categories of nano materials with suitable examples. **4 M**

5.a) Define pitting corrosion. State the conditions necessary for pitting corrosion to occur. State the hazards and controls associated with pitting corrosion. 8 **M**

b) What do you mean by sacrificial anodic protection? Explain with suitable examples. 8 **M**

6.a)What are liquid crystals? What are the advantages of liquid crystal display? **5 M**

b) Discuss the effect of temperature on semi conductors. 3 M

c) What do you understand by a semi conductor? Discuss some properties of semi conductors**.** 8 **M**