Reg. N ......

Name : ......

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Combined First and Second Semester B.Tech. Degree Examination, May 2007
(2003 Scheme)
ENGINEERING CHEMISTRY (CMNPHETARUFB)

Time: 3 Hours

Max. Marks: 100

PART – A

Answer **all** questions. **Each** question carries **4** marks.

1. Describe the experimental method of determination of single electrode potential.

2. What are concentration cells ? Calculate the emf of the following cell

   $Cu(s), Cu^{2+}(0.2M) \parallel Cu^{2+}(2.0 M), Cu.$

3. Define corrosion. Explain the mechanism of wet corrosion.

4. With examples explain the functions of extenders, antiskinning agents and plasticizers in paints.

5. What is Rf value ? What is its use in chromatography ?

6. What is caustic embrittlement ? Give the contributing factors.

7. Differentiate IR and uv spectroscopy.

8. Define H.C.V. and L.C.V. How are they related ?

9. Write short note on setting and hardening of cement.

10. Explain briefly the classification of explosives.

    (10×4=40 Marks)

PART – B

Answer **any two** questions from **each** module. **Each** question carries **10** marks.

MODULE – I

11. What are storage cells ? Explain the construction, working and uses of Lead Storage Battery.

12. Discuss the important methods used for corrosion control.

13. What is paint ? Describe the different ingredients and their functions of a paint.

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MODULE – II

14. Calculate the amount of lime and soda required to soften 10,000 litres of water containing the following. $MgSO_4$ = 50 mg/L, $Ca(HCO_3)_2$ = 55 mg/L and $MgCl_2$ = 15 mg/L.

15. What are the different sources of atmospheric pollution and describe the methods of control ?

16. Briefly explain differential thermal analysis.

MODULE – III

17. Explain the determination of calorific value of gaseous fuels by Boy's gas calorimeter.

18. Write notes on:
    a) Solid Lubricants
    b) Semisolid Lubricants
    c) Flash and Fire point

19. a) Explain compounding of rubber.

    b) Write short note on vulcanisation of rubber. **(6×10=60 Marks)**

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