Date: 15-11-2016

Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

Part-A

Answer ALL questions. (10 × 2= 20)

1. What is universal antidote?
2. Mention the adsorbents used in TLC.
3. What are the factors influencing the formation of ionic bond?
4. What is meant by dipole-dipole interaction? Give an example.
5. Calculate the pH of 0.001 N NaOH solution.
6. Identify the following as primary or secondary standards a) Oxalic acid b) Sodium hydroxide
   c) Potassium permanganate d) Hydrochloric acid   .
7. Distinguish between order and molecularity of a chemical reaction.
8. What are homogeneous catalysts? Give an example.
9. What are provitamins? Give an example.
10. Draw the structure of adrenaline.

Part-B

Answer any EIGHT questions. (8 × 5= 40)

11. What are the first aid procedures to be followed in the laboratory?
12. What are absolute and relative errors? Give the method of minimizing errors.
13. Describe the principle of TLC.
14. Explain the crystal structure of NaCl.
15. What are the postulates of Werner's theory? Explain.
16. Describe the types of hydrogen bonding with examples.
17. Enlist the requirements of a primary standard. Cite an example.
18. Define the following terms i) Normality ii) Ionic product of water.
19. Derive the expression for first order rate constant.
20. Briefly explain the role of enzymes in biological system.
21. Give the structure of vitamin C and mention its functions.
22. What are hormones? Write the biological functions of thyroxin and adrenaline.

Part-C

Answer any FOUR questions. (4 × 10= 40)

23. Explain in detail how the components of a mixture can be separated using column chromatography.
24a. How are toxic and poisonous chemicals stored in the laboratory? **(5)**
   b. Discuss the hybridization and geometry of the following molecules i) CH_4 ii) H_2O. **(5)**
25 a. Discuss the geometrical isomerism present in octahedral complexes. **(5)**
   b. Draw the structure of hemoglobin and explain its functions. **(5)**
26 a. Derive Henderson equation for an acidic buffer. Mention its applications. **(7)**
   b. What is molarity? Calculate the molarity of 4 g of sodium hydroxide in 1000 mL of water. **(3)**
27. Derive an expression for the rate constant of a second order reaction of the type 2A $\rightarrow$ Product.
28 a. What are vitamins? How are they classified? **(5)**
   b. Define saponification. Explain it with an example. **(5)**

****