36322

Third Semester B.Sc. Degree Examination, Nov./Dec. 2017
CHEMISTRY – III (CBCS)
Paper – III (New Syllabus)

Time : 3 Hours Max. Marks : 70

Instructions : *1) Section – **A** contains questions from Inorganic, Organic and Physical Chemistry.*
*2) Section – **B** contains questions from Inorganic; Section – **C** contains questions from Organic and Section – **D** contains questions from Physical Chemistry.*
*3) Answer **all** the **four** Sections **A, B, C** and **D**.*

SECTION – A

Answer **any ten** of the following questions : **(10×1=10)**

1. Give an electronic configuration of Cu.
2. Define base according to Lewis concept.
3. What are actinides ?
4. Why transition metals are less reactive than alkali metals ?
5. What are alkenyl halides ?
6. Write Ullmann reaction.
7. Write HVZ reaction.
8. What is Lucas reagent ?
9. Define free energy.
10. Write BET equation.
11. Define spontaneous process.
12. What is residual entropy ?

P.T.O.

SECTION – B

Answer **any two** of the following questions : **(2×10=20)**

13. a) Write note on lanthanides contraction. **6**
    b) Discuss in brief oxidation state of 3d series of transition elements. **4**

14. a) Discuss oxidation state and magnetic properties of actinides. **6**
    b) Write a note on symbiosis. **4**

15. a) Explain hard and soft acids and bases with suitable examples. **6**
    b) Describe the catalytic properties of transition elements. **4**

SECTION – C

Answer **any two** of the following questions : **(2×10=20)**

16. a) Discuss the mechanism of E_1 and E_2 reactions. **6**
    b) Explain the isomerism in monohydric alcohols upto C_5. **4**

17. a) Discuss the mechanism of Pinacol-Pinacolone rearrangement. **6**
    b) Write two methods of preparation of acetyl chloride. **4**

18. a) Explain the acidity of carboxylic acids and effect of substituents on acidity of carboxylic acids. **6**
    b) Describe the manufacture of phenol by Cumene process. **4**

SECTION – D

Answer **any two** of the following questions : **(2×10=20)**

19. a) Write postulates of quantum mechanics. **6**
    b) Explain photo electric effect. **4**

20. a) Explain Carnot cycle and its efficiency. **6**
    b) Write a note on Nernst heat theorem. **4**

21. a) Explain Langmuir's Adsorption isotherm. **6**
    b) How the distribution law is modified, when solute undergoes dissociation in one of the solvent ? **4**