SM – 360

II Semester B.Sc. Examination, May/June 2018
(CBCS) (Fresh + Repeaters)
(2014 – 15 & Onwards)
BIOCHEMISTRY (Paper – II)

Time : 3 Hours Max. Marks : 70

Instructions : *i) This question paper has **two** Parts. Part – **A** and Part – **B**.*
*ii) Answer **any eight** questions from Part – **A** and **any nine** questions from Part – **B**.*

PART – A

Answer **any eight** of the following. **Each** question carries **two** marks. **(8×2=16)**

1. What is a homogeneous system ? Give an example.
2. Define the term space lattice.
3. What is order of a reaction ?
4. Define the term phase with an example.
5. Write the structural formulae of
   i) 2-ethyl-3-methylpentan-1-ol ii) 1-chloropropan-2-one.
6. What are dienes ? Give an example.
7. Write the structure of
   i) Cyclobutane ii) Cyclohexane.
8. How is Sachse-Mohr's theory useful in explaining the greater stability of cyclohexane ?
9. Define Huckel's rule of Aromaticity.
10. Write any one synthetic application of Grignard reagent.
11. Write the name and structure of 2° alcohol.
12. Mention any two dihydric phenols.

P.T.O.

PART – B

Answer **any nine** questions of the following. **Each** question carries **six** marks. **(9×6=54)**

13. a) What are Amorphous Solids ? Mention their properties.
    b) What is plane of symmetry ? **(4+2)**

14. a) Write the criterian for phase equilibrium.
    b) What is Frenkel's defect ? **(4+2)**

15. a) What are Ideal and non-ideal solutions ? Explain the behaviour of ideal solution using vapour pressure composition curves.
    b) What are Azeotropes ? Give an example. **(4+2)**

16. a) Explain Redox equilibrium with suitable example.
    b) Write the differential rate equation of Y_2 in $X_2 + 2Y_2 \rightarrow 2XY_2$. **(4+2)**

17. a) Explain the effect of temperature on rate of a reaction based on transition state theory.
    b) What is half life period of a reaction ? Write its expression for zero order reaction. **(4+2)**

18. a) What are homogeneous and heterogeneous catalysis ? Give an example each.
    b) What is resonance ? **(4+2)**

19. a) What are Free radicals ? How are they formed ?
    b) What is an Inductive effect ? Mention their types. **(4+2)**

20. a) What is peroxide effect ? Explain the mechanism involved in it.
    b) Write the Newmann's conformations of ethane. **(4+2)**

21. a) What is Friedel Craft's alkylation ? Explain its mechanism.
    b) Classify the following as ortho para and meta orienting groups.
    i) – OH ii) – NO_2
    iii) – CN iv) – NH_2. **(4+2)**

22. a) Explain the Orienting influence of $-NO_2$ group in nitrobenzene with resonance structure.

    b) What is Reimer-Tieman reaction ? **(4+2)**

23. a) Explain the SN^1 reaction mechanism with suitable example.

    b) How is the Grignard reagent prepared ? **(4+2)**

24. a) How are alcohols differentiated using Lucas reagent ?

    b) Give the reaction of monohydric alcohol with

    i) Carboxylic acid

    ii) Ammonia. **(4+2)**

25. a) Explain the mechanism of aldol condensation.

    b) Give the reaction of P-benzoquinone with hydrogen halide. **(4+2)**
