

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.

 $(8 \times 2 = 16)$

- 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.



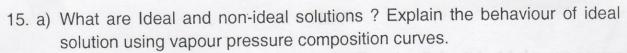


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PART – B

Answer any nine questions of the following. Each question carries six marks. (9x6=54)

- 13. a) What are Amorphous Solids? Mention their properties an MA day of Solids?
 - b) What is plane of symmetry?
- 14. a) Write the criterian for phase equilibrium.
 - b) What is Frenkel's defect?



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,

iii) - CN

iv) $- NH_2$.

(4+2)



- 22. a) Explain the Orienting influence of NO₂ group in nitrobenzene with resonance structure.
 - b) What is Reimer-Tieman reaction? (4+2)
- 23. a) Explain the SN¹ 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)

