



US – 344

II Semester B.Sc. Examination, May 2017
(CBCS) (F+R)
(2014-15 and Onwards)
BIOCHEMISTRY – 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 questions. **Each** question carries **two** marks.

(8×2=16)

1. Define
 - i) Space lattice
 - ii) Unit cell
2. State Gibb's phase rule.
3. What is chemical equilibrium ? Mention any two characteristics of it.
4. Write the expression of velocity constant for zero and first order reactions.
5. What is inductive effect ?
6. Mention two uses of acetylides.
7. Write the structure of anthracene and diphenyl.
8. What are conjugated dienes ? Give an example.
9. Mention two uses of glycol.
10. Write the reduction reaction of p-benzoquinone.
11. What is the principle of steam distillation ?
12. Write the structure of
 - i) 4-oxopentanoic acid
 - ii) 1,3-dibromo-3-methyl butane.

P.T.O.



PART - B

Answer **any nine** questions of the following. **Each** question carries **six** marks.

(9×6=54)

13. a) Explain Schotky and Frenkel defects in crystalline solids.
b) What are free radicals ? Give an example. (4+2)
14. a) Discuss the temperature composition curves of ideal and non ideal solutions.
b) What is aromaticity ? (4+2)
15. a) Explain the binding of oxygen to haemoglobin.
b) What is ozonolysis ? (4+2)
16. a) Explain Baeyer strain theory.
b) What is half life of a reaction ? (4+2)
17. a) Explain the mechanism of Reimer-Tiemann reaction of phenol.
b) Write a note on the effect of temperature on rate of reaction. (4+2)
18. a) Explain the Claisen condensation reaction in aldehydes.
b) Distinguish crystalline and amorphous solids. (4+2)
19. a) Explain the mechanism of elimination reaction in tertiary butyl chloride.
b) What is critical solution temperature ? (4+2)
20. a) Discuss the electronic interpretation for the orienting influence of chloro group in chlorobenzene.
b) State Nernst distribution law. (4+2)
21. a) How is glycerol prepared from propene ? Mention any two uses of glycerol.
b) Write Bragg's equation and mention the terms. (4+2)



22. a) What are Grignard reagents ? Write a note on its preparation and an application.
b) Mention any two characteristics of catalysts. (4+2)
23. a) Write the oxidation reactions of naphthalene in presence of
i) acidified KMnO_4
ii) chromic acid
b) What are azeotropes ? Give an example. (4+2)
24. a) What is rate of a reaction ? Explain the effect of temperature and pressure on it.
b) Give any two applications of distribution law. (4+2)
25. a) State the following.
i) Le-Chatlier's principle
ii) Raoult's law.
b) What are carbanions ? Give an example. (4+2)
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US – 348

II Semester B.Sc. Examination, May 2017
(Repeaters)
(2011-2012 and Onwards) (Prior to 2014-15)
BIOCHEMISTRY – II

Time : 3 Hours

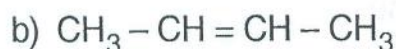
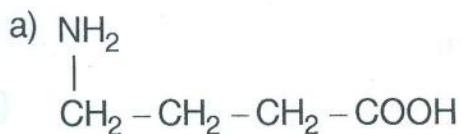
Max. Marks : 70

- Instructions :** 1) The question paper has **two** Parts. Part – **A** and Part – **B**.
2) Answer **any eight** questions from Part – **A**.
3) Answer **any nine** questions from Part – **B**.

PART – A

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

1. Write the IUPAC names of



2. What is carbocation ? Give an example.
3. Give any two importance of acetylides.
4. Write any two drawbacks of Baeyer-Strain theory.
5. Write the structures of naphthalene and diphenyl.
6. How primary alcohols are prepared from Grignard reagent ?
7. Phenol is acidic in nature. Why ?
8. Define most probable velocity.

P.T.O.



9. What are Miller indices ?
10. Define chemical equilibrium. What is the effect of a catalyst on it ?
11. What are homogeneous catalytic reactions ? Give an example.
12. Define the term chemical potential.

PART – B

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

13. a) Explain Liebig's method of estimation of carbon and hydrogen.
b) What are carbenes ? Give an example. (4+2)
14. a) State Markovnikov's rule and explain the mechanism of addition of HCl to propene.
b) What are conjugated dienes ? Give an example. (4+2)
15. a) Explain the mechanism of nitration of benzene.
b) Define angle strain. (4+2)
16. a) Explain any two oxidation reactions of naphthalene.
b) State Huckel's rule of aromaticity. (4+2)
17. a) Explain S_N^1 mechanism with a suitable example.
b) How is chlorine detected in an organic compound by Lassaigne's test ? (4+2)
18. a) How are alcohols distinguished as 1° , 2° and 3° alcohols using Lucas reagent ?
b) What is zero order reaction ? Give an example. (4+2)
19. a) Explain the mechanism of Claisen condensation.
b) What happens when bromine water reacts with phenol ? (4+2)
20. a) Give the reactions of an alcohol with aldehydes and ketones.
b) Write the structures of o-benzoquinone and p-benzoquinone. (4+2)



21. a) Write Maxwell's equation for distribution of molecular velocities and explain the terms in it ?
b) Define (i) Space lattice (ii) Unit cell. (4+2)
22. a) Explain any four characteristics of chemical equilibrium.
b) Name any two crystal systems. (4+2)
23. a) Mention any four characteristics of a catalyst.
b) What is redox equilibria ? (4+2)
24. a) Derive an expression for the rate constant for a first order reaction.
b) State first law of thermodynamics. (4+2)
25. a) Define (i) Phase rule (ii) Enthalpy (iii) Entropy (iv) Free energy change.
b) What are exergonic reactions ? Give an example. (4+2)
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