B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, MARCH 2017

Sixth Semester

Core Course – APPLIED INORGANIC CHEMISTRY

(Common for B.Sc. Model I, Model II, B.Sc. Petrochemicals, B.Sc. Chemistry Environment and Water Management)

[2013 Admission onwards]

Time : Three Hours   Maximum Marks : 60

Section A

Answer all questions.

Each question carries 1 mark.

1. Name two interfering anions.

2. What is glass transition temperature?

3. Give applications of fullerenes and carbon nano-tubes.

4. Give the uses of Silicone rubber.

5. Give the structure of B_5H_9.

6. Define solubility product.

7. Give characteristic reactions of chloride ions.

8. Define R_f value.

$(8 \times 1 = 8)$

Section B

Answer any six questions.

Each question carries 2 marks.

9. Name two ores of uranium.

10. What are ultramarines?

11. Give two reactions in liquid SO_2.

12. What are closo carboranes?

13. Give differences between inorganic polymers and organic polymers.

14. Mention the uses of carbides in industries.

15. What is radical paper chromatography?

Turn over

16. Give two applications of column chromatography.

17. What is electro metallurgy?

18. What are psuedo halogens?

$(6 \times 2 = 12)$

Section C

Answer any **four** *questions.*
Each question carries 4 marks.

19. Discuss common ion effect with examples.

20. Give reactions in liquid HF as solvent.

21. What are super acids? Give examples.

22. Give a short note on thin layer chromatography.

23. Write briefly on intercalation compounds of graphite.

24. What is vapour phase refining?

$(4 \times 4 = 16)$

Section D

Answer any **two** *questions.*
Each question carries 12 marks.

25. Explain general methods involved in extraction of metals.

26. Write a note on principle and techniques involved in gas chromatography.

27. Give the preparation, properties and bonding of dibocam.

28. Give short note on phosphazenes and polyphosphates.

$(2 \times 12 = 24)$

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, MARCH 2017

Sixth Semester

Core Course – CHEMISTRY OF NATURAL PRODUCTS AND BIOMOLECULES

(Common for B.Sc. Chemistry Model I, Model II, B.Sc. Petrochemicals, B.Sc. Chemistry Environment and Water Management)

[2013 Admission onwards]

Time : Three Hours

Maximum Marks : 60

Part A

Answer all questions.

Each question carries 1 mark.

1. Maltose on hydrolysis gives _____ .

2. What is acid valve?

3. _____ is an example for Basic amino acid.

4. Write an example for conjugated protein.

5. _____ is used as a standard for determining configuration in sugar chemistry.

6. Write an example for hydrolytic enzyme.

7. Sesquiterpenoids contains _____ isoprene units.

8. Nature of Vitamin C is _____ .

$(8 \times 1 = 8)$

Part B

Answer any six questions.

Each question carries 2 marks.

9. Write note on Epimerisation.

10. What is isoprene rule?

11. What is meant by Denaturation of protein?

12. Explain the aromaticity in Furan.

13. Write Fisher's indole synthesis.

14. What are Green Fluorescent protein?

15. What are Diels hydrocarbons?

16. Differentiate HDL and LDL cholesterol.

17. Draw the structure of Nicotine.

18. How is Pyrrole obtained from succinimide?

(6 × 2 = 12)

Part C

Answer any four questions.
Each question carries 4 marks.

19. What are Osazones? How it is prepared?

20. Discuss the skraup synthesis of Quinoline.

21. Briefly explain the mechanism of enzyme action.

22. Discuss the classifications of Vitamin.

23. Explain the structure of DNA and RNA.

24. Write note on Supramolecules.

(4 × 4 = 16)

Part D

Answer any two questions.
Each question carries 12 marks.

25. (i) Establish the structure of Citral.

    (ii) Explain the classification and biological functions of Lipids.

26. How are the following conversions affected?

    (i) (a) Fructose into Glucose.

        (b) Aldopentose into Aldohexose.

    (ii) Write briefly on industrial applications of cellulose.

27. (i) Discuss on Primary, Secondary and Tertiary structure of Cellulose.

    (ii) Write briefly on solution phase peptide synthesis.

28. (i) Discuss the synthesis and chemical properties of pyridine and piperidine.

    (ii) Compare the basicity of pyrrole, pyridine, piperidine with amines.

(2 × 12 = 24)