



B.Sc. VI Semester (CBCS) Degree Examination, May/June - 2019

CHEMISTRY - VII

Paper No. - 6.1

(New)

Time : 3 Hours

Maximum Marks : 70

Instructions to Candidates:

- 1) **Section A** contains questions from Inorganic, organic and physical chemistry.
- 2) **Section B** contains questions from Inorganic chemistry. **Section C** contains questions from organic chemistry. **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:

(10×1=10)

1. Define cement.
2. What are the major ingredients of glass?
3. What are extenders used in paint.
4. Name the different types of water pollution.
5. What are alkaloids?
6. What are enzymes?
7. Write the structure of menthol.
8. What are vitamins and give an example.
9. State Born - oppenheimer approximation.
10. What is meant by zero point energy.
11. Define degree of freedom.
12. What are antistoke lines.

SECTION - B

Answer any two of the following questions.

13. a) Explain the manufacture of cement by dry process. (6)
b) Write a note on types of glasses. (4)
14. a) Describe the manufacture of white lead by Dutch process (6)
b) Write a note on polyphosphazenes (4)
15. a) Explain the measures of water pollution. (6)
b) Explain types and sources of air pollution. (4)

SECTION - C

Answer any two of the following questions.

16. a) Elucidate the structure of nicotine. (8)
b) Explain the secondary structure of proteins. (4)
17. a) What are enzymes? Describe classification of enzymes. (8)
b) Give the synthesis of citral. (4)
18. a) Explain the biological importance of Thyroxine and Insulin. (8)
b) What are vitamins? Give the synthesis of vitamin C. (4)

SECTION - D

Answer any two of the following questions.

19. a) Write a note on pure rotational Raman spectra of a diatomic molecule. (8)
b) What are electromagnetic radiations. Give the important characteristic properties of electromagnetic radiations. (4)
20. a) Discuss briefly the rigid rotator for diatomic molecules. (8)
b) Explain briefly the factors which affect the intensity of spectral lines. (4)
21. a) Explain harmonic oscillator model of the vibrational spectra with energy level diagram. (8)
b) How the intensity of the spectral lines in the microwave spectra are determined? (4)