S.No. 363 **17POC02**

(For the candidates admitted from 2017–2018 onwards)

M.Sc. DEGREE EXAMINATION, APRIL/MAY 2018.

First Semester

Organic Chemistry

INORGANIC CHEMISTRY – I

Time : Three hours Maximum : 75 marks

PART A — (5 × 5 = 25 marks)

Answer ALL questions. (Either or Choice)

1. (a) Define polyacids. Give some examples.

Or

(b) Write a note on polyorgano phosphazenes.

2. (a) Write the preparation and properties of hydroborate ions.

Or

(b) Discuss the chemistry of low molecularity of metal clusters.

3. (a) Define half life period. How is it determined.

Or

(b) Write short notes on K —electron capture.

4. (a) Discuss the applications of nuclear fusion reaction.

Or

(b) Explain the isotopic dilution analysis.

5. (a) How is the activity of a radioactive substance measured by G.M counter?

Or

(b) Write a note on bubble chamber.

PART B — (5 × 10 = 50 marks)

Answer ALL Questions(Either or Choice)

6. (a) Define hydrogen bonding. Discuss the types of hydrogen bonding with a suitable example.

Or

(b) Discuss the structure and applications of silicates.

7. (a) Describe the preparation and structure of diboranes.

Or

(b) Explain the types of carboranes with suitable examples.

8. (a) Write the properties of α, β and γ rays.

Or

(b) Explain the shell model of nuclear structure.

9. (a) Write the differences between nuclear fission and nuclear fusion reaction.

Or

(b) Discuss the applications of radioactive isotopes in medicine and industry.

10. (a) Explain the followings :

(i) Nuclear emulsion

(ii) Proportional counter

Or

(b) Describe the construction and working of Synchrotron.

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