

APRIL/MAY 2018

MCH22 — INORGANIC CHEMISTRY — II

Time : Three hours

Maximum : 75 marks

SECTION A — (5 × 6 = 30 marks)

Answer ALL questions.

1. (a) What are superconductors? Discuss its properties.

Or

- (b) Write notes on Ferrites.

2. (a) Write notes on origin of nuclear forces.

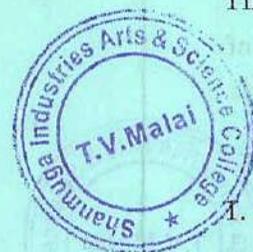
Or

- (b) Describe the construction and working of G.M. Counter.

3. (a) Explain particle accelerators.

Or

- (b) Describe isotopic dilution analysis.



4. (a) Write notes on nanosensors.

Or

(b) Explain the applications of nanotechnology in optics and electronics.

5. (a) Discuss the structural features of hemerythrin and hemocyanin and their role in oxygen transport.

Or

(b) Describe the role of sodium, potassium and copper in biological systems.

SECTION B — (3 × 15 = 45 marks)

Answer any THREE questions.

6. (a) Compare X-ray diffraction with neutron diffraction. (5)

(b) Explain the structures of perovskite and spinels. (10)

7. (a) Discuss in detail the detection of radioactivity by cloud chamber and bubble chamber. (8)

(b) Explain compound nucleus theory. (7)

8. (a) Discuss the salient features of the fast breeder reactors. (7)

(b) Explain radiometric titrations and its applications. (8)

9. Discuss the oxidation states, spectral and magnetic properties of lanthanides and actinides.

10. Explain in detail the structures and functions of carboxypeptidase and ferredoxins.

