Roll No :

Total No. of Questions : 11] [Total No. of Printed Pages : 4

AS-423

M.Sc. (Chemistry) IV Semester (Reg./ATKT) Examination June 2019

SOLID STATE CHEMISTRY

Paper - II

Time Allowed : Three Hours] *[Maximum Marks : 85*

Note : Attempt all the questions.

Section - A

Objective Type Questions

$5 \times 2 = 10$

Q.1. Choose the correct answer.

i) All spontaneous process are accompanied by:

(a) Increase in free energy

(b) Decrease in free energy

(c) No change in free energy

(d) None of the above

ii) Which of the following is thermodynamically stable defect.

(a) Point defect (b) Line defect

(c) Surface defect (d) Volume defect

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iii) When temperature increases intrinsic concentration increases which results in increase of.

(a) Conductivity

(b) Super conductivity

(c) Capacitivity

(d) Infinite

iv) A magnetic field exists around

(a) Iron

(b) Copper

(c) Aluminium

(d) None of the above

v) The optical properties of liquid crystals depends on the direction of

(a) Air (b) Solid

(c) Light (d) Water

Section - B

Short Answer Type Questions

$5 \times 5 = 25$

Q.2. Write short note on any one of the following.

i) Co-precipitation

ii) Polymorphic Transition

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Q.3. What do you meant by Extrinsic defects?

OR

What are Frenkel defects?

Q.4. Write short note on the following (any one)

i) Insulators

ii) Semiconductors

Q.5. What do you meant by charge Transfer complexes?

OR

Write short note on new superconductors.

Q.6. Write short note on any one of the following.

i) Nematic crystals

ii) Semantic crystals

Section - C

Long Answer Type Questions

$5 \times 10 = 50$

Q.7. Write a detailed note on kinetics of solid state reactions.

OR

What are solid state reactions? Write experimental procedure for their detection.

Q.8. Write short note on the following (any two)

i) Intrinsic crystal defects

ii) Plane defects

iii) Schottky defects

Q.9. Write an essay on application of optical and electron microscopy.

OR

Write short note on the following.

i) Super exchange

ii) Ferromagnetic properties.

Q.10. Write a detailed note on organic metals.

OR

What do you mean by electrically conducting solids? Explain.

Q.11. Describe how liquid crystals are being used in medical electronic and other fields.

OR

Explain in detail different theories of Liquid crystals.

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