

1[CCE.M]1

Geology–II

(11)

Time : Three Hours

Maximum Marks : 300

**INSTRUCTIONS**

- (i) Answers must be written in English.
- (ii) All questions carry equal marks.
- (iii) The answer to each question or part thereof should begin on a fresh page.
- (iv) Your answers should be precise and coherent.
- (v) The part/parts of the same question must be answered together and should not be interposed between answers to other questions.
- (vi) Candidates should attempt **six** questions selecting **one** question from each section.
- (vii) If you encounter any typographical error, please read it as it appears in the text book.
- (viii) Candidates are in their own interest advised to go through the General Instructions on the back side of the title page of the Answer Script for strict adherence.
- (ix) No continuation sheets shall be provided to any candidate under any circumstances.

(x) Candidates shall put a cross (X) on blank pages of Answer Script.

(xi) No blank page be left in between answer to various questions.

#### SECTION-A

1. What is twinning ? Give a detailed account of various types of twinning. Add a note on the twin laws applied in the crystal systems.
2. Write short notes on any **two** :
  - (a) Use of stereographic projections in crystallography
  - (b) 14 Bravi's space lattices
  - (c) Crystal symmetry of Tetragonal system.

#### SECTION-B

3. Write an essay on Extinction. Add a note on the various types of extinction exhibited by minerals under the microscope.
4. Discuss the following :
  - (a) Optical Indicatrix
  - (b) Mica Plate and Quartz Wedge

#### SECTION-C

5. Give an account of the physical, chemical and optical properties of Amphibole group of minerals.
6. Write short notes on any **two** :
  - (a) Isomorphism
  - (b) Silicate structures
  - (c) Mica Group.

#### SECTION-D

7. Write notes on any **two** of the following :
  - (a) Bowen's Reaction Principle
  - (b) Charnockites
  - (c) Tabular classification of Igneous Rocks.
8. Discuss any **two** of the following :
  - (a) Provenance
  - (b) Lithification and Diagenesis
  - (c) Structures of Sedimentary rocks.
9. Write short notes on any **two** :
  - (a) AKF Diagrams
  - (b) Facies of metamorphism
  - (c) Textures of metamorphic rocks.

#### SECTION-E

10. Give a detailed account of the Hydrothermal process of formation of mineral deposits.
11. Write a note on any **two** of the following :
  - (a) National Mineral Policy
  - (b) Coal Fields of India
  - (c) Indian Mineral Wealth.

#### SECTION-F

12. Write an essay on various mining methods utilised in mining of ores.
13. Discuss any **two** of the following :
  - (a) Application of geology in tunnels
  - (b) Use of Aerial photographs for geological studies.
  - (c) Occurrence of groundwater in different rock types.