



Total No. of Printed Pages : 3

Roll No.

1(CCE.M)2

Geology—II

(11)

Time : Three Hours]

[Maximum Marks : 300

INSTRUCTIONS

- (i) Answers must be written in English.
- (ii) The number of marks carried by each question is indicated at the end of the question.
- (iii) The answer to each question or part thereof should begin on a fresh page.
- (iv) Your answer 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.

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(ix) No continuation sheets shall be provided to any candidate under any circumstances.

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

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Contd.

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

(xii) No programmable Calculator is allowed.

(xiii) No stencil (with different markings) is allowed.

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1. What is Bragg's law ?
Discuss powder X-ray diffraction method.

Comment upon its application in crystal.

2. Write short notes on any **two** of the following :-

(a) Twin laws in the feldspar

(b) Mathematical relationship between stereographic and spherical projections.

(c) Centre of symmetry.

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3. What do you understand by "Interference Figure" ? Discuss various types of interference figures observed in case of anisotropic crystals.

7. What do you understand by texture of an igneous rock ? Discuss

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4. Write short notes on any **two** of the following:

various types of textures found in igneous rocks. Comment upon their petrogenetic significance.

- (a) Birefringence
(b) Pleochroism
(c) Optic axial angle ($2v$), citing an example of any **two**.

8. Write short notes on any **two** of the following :

SECTION-C

5. Discuss physical, chemical and optical properties of Feldspathoid Group of minerals.

- (a) Facies and grades of metamorphism.
(b) Sphericity and roundness.
(c) ACF and AKF diagrams.

6. Write short notes on any **two** of the following :

- (a) Isomorphism and polymorphism.
(b) Nesosilicates and inosilicates.
(c) Mineralogy of a hydrothermally altered holos.

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- (a) Geobotanical and biogeochemical exploration.
- (b) Mechanical properties of soil.

9. Discuss metallogenetic epochs and provinces with special reference of India. Add a note on the uranium mineralization in Peninsular India.

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10. Write short notes on any **two** of the following :

- (a) Proximate and ultimate analysis of coal.
- (b) Coking coal and caking coal.
- (c) Structural and stratigraphic oil traps.

SECTION–F

11. Discuss about the geochemical methods used in the exploration of sulphide ore deposits. Comment upon orientation surveys.

12. Write short notes on any **two** of the following :

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(c) Tone and texture of arial photography.		50
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