Geologists' Exam 2009

Sl. No. 3560 A–HFP–J–HA

GEOLOGY

Paper—I

Time Allowed : Three Hours	Maximum Marks : 200

INSTRUCTIONS

Candidates should attempt SIX questions in all including Question No. 1, which is compulsory, from PART—I and attempt ONE question each from Sections A, B, C, D and E from PART—II.

The number of marks carried by each question is indicated against each.

Answers must be written only in ENGLISH.

Symbols and abbreviations are as usual.

Neat sketches may be drawn to illustrate answers, wherever required.

PART—I

1. Write short notes on any *ten* of the following : 5×10=50

   (a) S-waves

   (b) Bifurcation ratio

   (c) Digital image processing

   (d) Inlier

   (e) Isotropic fabric

(f) Foliation and lineation

(g) Neppes

(h) Hiatus

(i) Exotic blocks of Johar

(j) Operculum

(k) Plankton

(l) Sequence stratigraphy

PART—II

Section—A

2. Write an essay on morphometric analysis of a drainage basin. 30

3. Write notes on the following :

(a) Origin of karst topography 10

(b) Application of geomorphology in dam construction 10

(c) Landsat imagery in geological mapping 10

Section—B

4. Explain and differentiate between :

(a) Stratigraphic separation and Vertical separation 10

(b) Shear joints and Tension joints 10

(c) Pure shear and Simple shear 10

5. Write notes on the following :

(a) Prolate strain ellipsoid 10

(b) Mylonites and pseudotachylites 10

(c) Significance of stereographic projections in structural analysis 10

Section—C

6. Discuss the genesis of mid-oceanic ridges. Also give a cross-section of the mid-Atlantic ridge. 20+10=30

7. Write notes on the following :

(a) Stony meteorites 10

(b) Main boundary fault 10

(c) Magnetic anomaly 10

Section—D

8. Discuss the principles of radiometric dating using U-Pb isotopes. 30

9. Write notes on the following :

(a) Sargur Group 10

(b) Panjal Traps 10

(c) Palaeoclimates 10

Section—E

10. Discuss the evolutionary changes in the pattern of suture lines in ammonoids. 30

11. *(a)* Describe the ornamentation on the surface of gastropod shells. 15

(b) Write on the role of Foraminifers in biostratigraphic correlation. 10

(c) Briefly give the systematic classification, morphology and age of Terebratula. 5

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