2012

GEOLOGY

(Major)

Paper : 2.1

Time : 3 hours

The figures in the margin indicate full marks for the questions

Candidates ***eligible*** *for Internal Assessment shall answer from PART—I only* (*Marks* : 65)

Candidates ***not eligible*** *for Internal Assessment shall answer both from PART—I and PART—II* (*Marks* : 75)

PART—I

(*Marks* : 65)

Group—A

(Structural Geology)

Answer Question No. **1** and *any* **two** from the rest

1. Write short notes on any *three* of the following : 5×3=15

(a) Unconformities

(b) Non-diastrophic structures

(c) Classification of joints

(d) Relationship between stress and strain

(e) Fleuty's classification of folds

2. (a) Define pure shear and simple shear. What are the special types of homogeneous strain? 2+3=5

(b) Define stress ellipsoid. Express the stress at a point. 2+3=5

3. (a) Define fold. Give a brief note on Ramsay's classification of folds. 1+4=5

(b) What are the different structural elements of faults? Define normal fault and reverse fault. 2+3=5

4. Write short notes on any *four* of the following : 2½×4=10

(a) Thrust nappe and fold nappe

(b) Mechanics of folding

(c) Fold superposition and fold interference

(d) Flower structures

(e) Different lineations in deformed rocks

(f) Disjunctive, Crenulation and Axial planar foliation

Group—B

(Geotectonics)

5. Write short notes on any *two* of the following : 6½×2=13

(a) Geosynclines

(b) Types of plate boundaries

(c) Structural features and tectonics of North-East India

Group—C

(Descriptive Mineralogy)

6. *(a)* Describe the pyroxene *or* quartz group of minerals with respect to the following points : 3+4+4=11

(i) Atomic structure

(ii) Physical properties

(iii) Chemical composition

(b) Give the composition and diagnostic properties of any *two* of the following minerals : 3×2=6

(i) Calcite

(ii) Sillimanite

(iii) Biotite

(iv) Hematite

PART—II

(*Marks* : 10)

(In lieu of Internal Assessment)

7. Write short notes on any *two* of the following : 5×2=10

(a) Diastrophic structures

(b) Isostasy

(c) Atomic substitution

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