

**3/EH-26 (iii) (Syllabus-2015)**

**2 0 1 8**

**( October )**

**GEOLOGY**

**( Honours )**

**( Structural Geology and Geotectonics )**

**( GELH-301 )**

**Marks : 56**

**Time : 3 hours**

*The figures in the margin indicate full marks  
for the questions*

**Answer four questions, selecting one from each Unit**

**UNIT—I**

**( Introduction to Structural Geology and Folds )**

1. (a) Differentiate fold axis from hinge line.  
Classify folds on the basis of fold  
symmetry. 2+6=8
- (b) What is an unconformity? Explain the  
types of unconformities. 2+4=6
2. (a) Explain the relationship between the  
major folds and minor folds. 5

**( Turn Over )**

( 2 )

- (b) Write brief notes on any *three* of the following :  $3 \times 3 = 9$

- (i) Dip and strike
- (ii) Outcrop of inclined rocks on uneven ground
- (iii) Cross-beds and ripple marks
- (iv) Class 1 folds of Ramsay

UNIT—II

( Fault, Foliation and Lineation )

3. (a) Distinguish slip of faults from separation. Classify faults on the basis of slip.  $2+6=8$

- (b) Write a brief note on the types of structural lineation. Draw sketches. 6

4. (a) Explain the domainal character of rock cleavage. 5

- (b) Write brief notes on any *three* of the following :  $3 \times 3 = 9$

- (i) Jointing in folds
- (ii) Crenulation foliation
- (iii) Changes in fault attitude
- (iv) Any six criteria for recognition of faults

D9/53

( Continued )

( 3 )

UNIT—III

( Rock Deformation )

5. (a) Outline the strain behaviour of rocks due to stress under varying confining pressure, temperature and solutions. 8

- (b) Distinguish force from stress. Show the resolution of stress acting on a plane.  $2+4=6$

6. (a) What are coaxial strain and non-coaxial strain? 5

- (b) Write brief notes on any *three* of the following :  $3 \times 3 = 9$

- (i) Stress states
- (ii) Rock deformation
- (iii) Measurement of change in angle between lines in strain analysis
- (iv) Strain ellipsoid

UNIT—IV

( Geotectonics )

7. (a) What are the settings of convergent plate boundaries? Explain any one of them with example.  $3+5=8$

- (b) What are the possible causes of plate motion? 6

( Turn Over )

D9/53

( 4 )

8. (a) What are mid-oceanic ridges?  
Differentiate mid-oceanic ridges  
from rift valleys.  $3+2=5$
- (b) Write brief notes on any *three* of the  
following :  $3 \times 3 = 9$
- (i) Gondwanaland and its breakup
  - (ii) Island arc
  - (iii) Paleomagnetism
  - (iv) Transform faults

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