3 SEM TDC GEO M 1

2015

(November)

GEOLOGY

(Major)

Course : 301

(Structure and Tectonics)

Full Marks : 48

Pass Marks : 19 (Backlog) / 14 (2014 onwards)

Time : 2 hours

The figures in the margin indicate full marks for the questions

(3.1 : Structural Geology)

(*Marks* : 30)

1. Define stress and strain. Describe what is depicted in a stress ellipse. What do you mean by elasticity and plasticity of rocks? What is an yield strength of rocks?

3+3+2+1=9

2. What is a fault? Describe the geometrical classification of faults with neat sketches. What is an imbricate structure? What do you mean by the term 'fault gauge'? 3+5+2+2=12

Or

Describe briefly how foliations and lineations are formed in rocks. Give a morphological classification of foliations. Write briefly about the relationship of foliation with folds. 4+6+2=12

3. Explain any *two* of the following : 3×2=6

   (a) Scale of geologic structures

   (b) Superposed folding

   (c) Strike joint and bedding joint

4. Answer the following as directed : 1×3=3

   (a) Bearing of a line is always measured on a _____ plane. (Fill in the blank)

   (b) In class 1B folds _____ thickness is constant. (Fill in the blank)

   (c) Apparent dip of an inclined plane along the strike direction is zero. (Write True/False)

(3.2 : Tectonics)

(*Marks* : 18)

5. Define tectonics. Write what you know about the concept of plate tectonics. What is an island arc? Describe how they are formed. 2+6+2+2=12

Or

Write explanatory notes on the following : 3×4=12

(a) Mid-oceanic ridges

(b) Deep-sea trenches

(c) Subduction zones

(d) Tripple junction

6. Write short notes on any *two* of the following : 2×2=4

(a) Naga thrust

(b) Volcanic belts of the world

(c) Indo-Myanmar Ranges

7. Answer the following as directed : 1×2=2

(a) Convergent plate boundaries evolve as fold and thrust belts. (Write Yes/No)

(b) The movement of plate divergence and convergence are accommodated along _____ boundaries. (Fill in the blank)

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