SE/ CIVIL/ CBCS/ sem III

(REVISED COURSE)

(3 Hours) [Total marks: 80]

.11 DEC 2018

N.B. (1) **Question No 1** is compulsory.
   (2) Attempt any **three** questions out of remaining **five**.
   (3) Draw sketches wherever necessary.
   (4) Figures to the right indicate full marks.

1. (a) Define the following in short (**any five**) (5)
   (i) Fault plane   (ii) Aquifuge   (iii) Mohorovicic discontinuity
   (iv) Mohs' scale of hardness   (v) Driekenters   s(vi) Strike

   (b) Answer in brief (5)
   (i) Name a mineral which shows splintery fracture and fibrous form.
   (ii) Name a rock which is abundant along unconformity.
   (iii) Mention the difference between rock salt and rock crystal.
   (iv) How erosion is different from weathering.
   (v) Name a mineral which is bluish in color and shows bladed form.

   (c) Draw neat labelled diagram of the following. (10)
   (i) Mural joint and Columnar joint.
   (ii) Gravity dam.
   (iii) Plunging fold and its parts.
   (iv) Dip-slip fault and strike-slip fault.
   (v) Recumbent fold.

2. Write the difference between the following. (**any five**) (20)
   (i) Cross bedding and ripple mark.
   (ii) Overturned fold and isoclinal fold.
   (iii) Porphyritic texture and poikilitic texture.
   (iv) Gravity fault and thrust fault.
   (v) Central type and fissure type of eruptions.
   (vi) P-wave and S-wave.

3. (a) Describe with diagram any two depositional features each for running water and glacier. (10)
   (b) What is aquifer? Explain different types of aquifer. (5)
   (c) What is unconformity? Explain different types of unconformity with diagram (5)

4. (a) Explain different types of structure found in metamorphic rocks. (10)
   (b) Explain concordant and discordant bodies with example. (5)
   (c) Give an account of electrical resistivity method of subsurface investigation. (5)

5. (a) Explain theory of plate tectonics with suitable diagram. (5)
   (b) Write principle of stratigraphy? Discuss the use of Deccan trap rocks as building stone. (5)
   (c) Define soil creep. Mention the factors that influence landslides. (5)
   (d) Give an account of clastic and non-clastic type of sedimentary rocks with example. (5)

6. (a) On a horizontal tunnel a bed of sandstone is dipping southwards. If the width of outcrop is 240 m and the vertical thickness is 200 m then determine the true thickness and amount of inclination of the sandstone bed. (6)

(b) Describe various geological considerations for site selection of a tunnel. (8)

(c) Calculate the core recovery and RQD from the following data. Also mention your opinion. Run is 1.5 m (6)

No of samples	Length of sample (in cm)	Nature of joints (lower end of the core)
1	10	N
2	6	N
3	12	N
4	13	N
5	6	N
6	2	M
7	5	M
8	5	M
9	3	N
10	17	M
11	16	N
12	3	M
13	2	M
14	4	N
15	40	N

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