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Total No. of Questions : 09]

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## Paper ID [CE210]

(Please fill this Paper ID in OMR Sheet)

B.Tech. (Sem. - 4<sup>th</sup>)

ROCK MECHANICS AND ENGINEERING GEOLOGY (CE - 210)

(Paper - II)

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

### Section - A

Q1)

(10 × 2 = 20)

- a) What is meant by Rock cycle?
- b) Differentiate between concordant and discordant bodies.
- c) Distinguish between weathering and erosion.
- d) Differentiate between progressive metamorphism and retrogressive metamorphism.
- e) What is rock bolting?
- f) Explain the term glacial trough.
- g) What do you mean by dip and strike in a rock strata.
- h) Discuss the Mohr's scale of hardness.
- i) List physical properties of Calcite mineral.
- j) What do you mean by unconformity?

### Section - B

(4 × 5 = 20)

Q2) Discuss how geological studies can be utilised in civil engineering projects.

Q3) What do you mean by rock quality designation (R.Q.D.). Explain with the help of suitable example? How rock classification is done on the basis of rock quality designation.

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- Q4) What are the reasons for folding. Discuss, how a recumbent fold differs from a monocline fold and illustrate your answers with the help of neat sketches.
- Q5) How joints are classified? Explain.
- Q6) Explain important physical properties of minerals that are commonly studied for their identification.

### Section - C

(2 × 10 = 20)

- Q7) Give an account of geological work of wind explaining briefly some major geological features produced by this agency on the land surface due to erosion and deposition.
- Q8) What are the in situ tests for testing the deformability of a rock mass. Describe pressure tunnel test in detail.
- Q9) Describe following stones in detail :
- (a) Basalt.
  - (b) Marble.
  - (c) Phyllite.
  - (d) Lime stone.