

B.E.(Civil Engineering)
ADVANCED ENGINEERING GEOLOGY WITH ROCK
MECHANICS

(2008 Pattern) (Semester - II) (Elective - III)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) All questions are compulsory.*
- 2) Answer to the two sections should be written in separate books.*
- 3) Figures to the right indicate full marks.*
- 4) Neat diagrams should be drawn wherever necessary.*

SECTION - I

Q1) Write notes on.

- a) Engineering significance of Precambrian metamorphic rocks. **[8]**
- b) Characters of Fractures in deccan trap area. **[4]**
- c) Flow Groups. **[6]**

OR

- a) Width of dykes in deccan traps area. **[4]**
- b) Engineering significance of older sedimentary rocks. **[8]**
- c) Regional distribution of deccan trap Basalt. **[6]**

Q2) How location of spillway is decided on geological grounds? Discuss case histories of tail channel erosion due to Columnar basalt and volcanic breccias. **[16]**

OR

Discuss with suitable examples suitability of Compact Basalt and Amygdaloidal basalts from dam foundation point of view. **[16]**

Q3) Write notes on.

- a) Influence of Climate on formation of Soil. **[6]**
- b) Water bearing characters of Compact Basalt. **[6]**
- c) Giant Phenocryst Basalt as a construction material. **[4]**

OR

P.T.O.

- a) Multi aquifer System. [4]
- b) Characters of transported & residual soil. [6]
- c) Artificial recharge of ground water. [6]

SECTION - II

Q4) Write notes on:

- a) Compressive strength of rocks masses. [6]
- b) Stand up time of Rock masses during tunneling. [4]
- c) Bieniawski's Geomechanical Classification. [8]

OR

Write notes on:

- a) RQD system of classification of rock masses. [6]
- b) RSR system of classification of rock masses. [8]
- c) Electrical resistivity method. [4]

Q5) a) Discuss with suitable examples, tunneling through Deccan Trap rocks. [16]

OR

- a) Determination of SBC of bridge during its fondation. [5]
- b) Treatment to be given to the dyke occurring below the foundation of a bridge pier. [5]
- c) Tunneling through folded rocks. [6]

Q6) a) Dam building activity & earthquakes in deccan trap area. [8]
b) Types of faults an recognition of them. [8]

OR

- a) Fault zone treatment. [6]
- b) Problems with made ground in cities. [6]
- c) Foundation of monumental buildings. [4]

