

Total No. of Questions : 6]

SEAT No. :

P3305

[Total No. of Pages : 2

[4959]-18

B.E. (Civil Engineering) (Semester - II)
ADVANCED ENGINEERING GEOLOGY WITH
ROCK MECHANICS
(2008 Pattern)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

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

SECTION - I

- Q1)** a) Comment on the feasibility of archean rocks occurring in Maharashtra State from geological point of view. [8]
- b) Regional distribution of basalt in Maharashtra State. [6]
- c) Pinching and bulging of dykes. [4]

OR

- a) What are fractures? Explain them in detail. [6]
- b) Varieties of basalts. [4]
- c) Comment on the feasibility of secondary rocks occurring in Maharashtra State from geological point of view. [8]

- Q2)** a) Engineering Significance of dykes from dam foundation point of view with relevant case histories. [8]
- b) How location of Spillway is decided on geological grounds? Discuss in detail with examples. [8]

OR

- a) What will happen if reservoir is located on laterites and jointed quartzites? Mention few case histories. [8]
- b) Engineering Significance of Tachlytic basalts. [8]

P.T.O.

Q3) What are soils? How are they formed? Explain residual and transported soils of Maharashtra State. [16]

OR

- a) Water bearing character of Deccan trap basalts. [10]
- b) Explain few methods of artificial conservation of water. [6]

SECTION - II

Q4) a) Explain various physical properties of rocks masses. [8]
b) Describe 'Q' System of Classifications of rocks in detail. [10]

OR

- a) What is R.Q.D.? How it is calculated? [8]
- b) Explain in detail Baniawski's Geomechanical Classification. [10]

Q5) a) Can we locate Pier of a bridge partly on dyke and partly on weathered basalts? Explain with examples. [8]
b) What are fractures? Discuss their feasibility from tunneling point of view. [4]
c) Occurrence of dyke during tunneling. [4]

OR

- a) How location & depth of drill holes for piers of a bridge is decided? [8]
- b) Tunneling through amygdaloidal basalts. Give suitable examples. [8]

Q6) a) Fault Zone Treatment. [4]
b) Problems with made ground in cities. [4]
c) Dam building activity in Deccan trap area. [8]

OR

- a) Foundation of ancient buildings. [4]
- b) Types of faults and recognition of them. [6]
- c) Amygdaloidal basalt as a construction material. [6]

