

Total No. of Questions : 6]

SEAT No. :

P2956

[5154]-508

[Total No. of Pages : 2

B.E. (Civil)

**ADVANCED ENGINEERING GEOLOGY WITH ROCK
MECHANICS**

(2012 Course) (Semester - I) (End semester) (Elective - I)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) All questions are compulsory.*
- 2) Figures to the right indicate full marks.*
- 3) Neat diagrams should be drawn wherever necessary.*

Q1) a) Describe the physiographic divisions of India. [6]

OR

b) Describe the regional distribution of Deccan trap basalt. [6]

Q2) a) What are the reasons of Tail Channel erosion in Deccan Trap area. [7]

OR

**b) How economy has been achieved by proper geological interpretation?
Discuss any one case history. [7]**

Q3) a) Write a note on residual & transported soils. [7]

OR

b) Discuss water bearing characteristics of rocks occurring in Maharashtra. [7]

Q4) a) Explain electrical resistivity method of geophysical exploration. [8]

b) Calculate RQD recovery and Core recovery from following data. [8]

Run in m	Piece No.	Length in cm.	Nature of fracture
0 - 3 m	1	11	J
	2	11	J
	3	06	J
	4	50	J
	5	50	J
	6	14	J

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	7	54	J
	8	10	J
	9	8	J
3 - 6m	10	70	M
	11	95	M
	12	115	M
	13	07	J

OR

- a) Differentiate between mechanical and natural fractures during core logging. [8]
b) Determine apparent resistivity of strata at different depth zones. [8]

Sr. No	R	a	apparent resistivity ($2\pi aR$)
1	2.87	1	
2	1.50	2	
3	1.34	3	
4	1.32	4	
5	1.21	5	
6	1.07	10	
7	1.03	15	

- Q5)** a) Explain in detail Engineering Geological investigations for Tunnels. [10]
b) How the nature and structure of rocks affects on SBC? [7]

OR

- a) Describe geological conditions responsible for roof collapsing of tunnel. [10]
b) Significance of fractures from tunneling point of view. [7]

- Q6)** a) Types of faults and significance of them in civil engineering projects. [10]
b) Describe various seismic zones of India. [7]

OR

- a) Explain suitability of Deccan Trap basalts as construction material. [10]
b) Explain Influence of geological factors in urban planning. [7]

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