

Total No. of Questions : 6]

SEAT No. :

P2117

[Total No. of Pages : 3

[5254]-508

B. E. (Civil)

ADVANCED ENGINEERING GEOLOGY WITH ROCK MECHANICS

(2012 Pattern) (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) Write short note on Geology of Maharashtra. [6]

OR

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

Q2) a) Write a note on Engineering significance of Tachylytic Basalt. [7]

OR

b) Explain in detail any two case histories of dam sites in Maharashtra, where tail channel erosion is occurring. [7]

Q3) a) Explain process of decomposition in soil formation. [7]

OR

b) Enlist various parameters of morphometric analysis of a river basin. [7]

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Q4) a) Explain in brief RMR classification. [8]

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

Run in m	Piece No.	Length in cm.	Nature of fracture
0 - 3m	1	07	J
	2	15	J
	3	13	J
	4	08	J
	5	60	J
	6	13	J
	7	40	J
	8	08	J
	9	17	J
3 - 6m	10	80	M
	11	90	M
	12	08	M
	13	110	J

OR

a) Explain in detail Bieniawski's Geomechanical classification. [8]

b) Calculate Apparent resistivity values at different depth zones. [8]

Sr. No.	R	a	$2 \pi aR$
1	1.48	1	
2	1.55	2	
3	1.38	3	
4	1.50	4	
5	1.20	5	
6	1.67	10	

Q5) a) Whether the compact basalt suitable/unsuitable for tunnel excavation?
Give reasons. **[10]**

b) Can we locate a pier of bridge partly on weathered rock and on dyke. **[7]**

OR

a) Explain in detail engineering geological investigations for tunneling. **[10]**

b) Significance of fractures from tunneling point of view. **[7]**

Q6) a) Describe various seismic zones of India. **[10]**

b) Describe the types of faults and recognition of them during civil engineering project works. **[7]**

OR

a) Define R.I.S. and explain how the dam building activity cause a major earthquake. **[10]**

b) Explain suitability of DTB as construction material. **[7]**

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