

Total No. of Questions : 6]

SEAT No. :

P3647

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[4859]-1008

B.E. (Civil) (End Semester)

**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) Describe the Varieties of Deccan Trap Basalt. [6]

OR

b) Write a short note on Region 1 & 2. [6]

**Q2)** a) How location of spillway is decided on geological grounds? [7]

OR

b) How strength and water tightness of DTB affect the foundation of dam?[7]

**Q3)** a) Write a note on Percolation Tank on Amygdaloidal Basalt. [7]

OR

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

*P.T.O.*

Q4) a) Describe 'Q' system of classification of rock in detail. [8]

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

Run in m	Piece No.	Length in cm.	Nature of fracture
0-3 m	1	10	J
	2	11	J
	3	07	J
	4	45	J
	5	55	J
	6	13	J
	7	50	J
	8	15	J
	9	8	J
3-6 m	10	90	M
	11	80	M
	12	120	M
	13	07	J

OR

a) What do you mean by mechanical and natural fractures during core logging? Explain in detail. [8]

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

Sr.No	R	a	$2\pi aR$
1	1.87	1	
2	1.66	2	
3	1.47	3	
4	1.32	4	
5	1.19	5	
6	1.09	10	

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

b) Under what conditions scouring of pier of bridge take place? Discuss with suitable examples. [7]

OR

a) Significance of fractures from tunneling point of view. [10]

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

**Q6)** a) R.I.S. in deccan trap area. [10]

b) Types of faults and recognition of them during civil engineering works. [7]

OR

a) Differentiate between active faults and dead faults. [10]

b) Dam building activity in seismic prone area. [7]

