Total No. of Questions : 6]

SEAT No. :

P3647

[Total No. of Pages : 3

[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	2πaR
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 recognisation 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]**