Total No. of Questions : 8]

SEAT No. :

P4606

[Total No. of Pages : 2

[4760]-1051

M.E. (Civil) (Water Resource and Environmental Engineering)

HYDROLOGY

(2013 Pattern) (Semester - II)

Time : 3 Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Answer any five questions from all the questions.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Use of calculator is allowed.***
5) ***Assume suitable data if necessary.***

Q1) a) Define rainguage density. Discuss the ISI norms for the rainguage density. Explain measurement of rainfall using satellites. **[6]**

b) What are the design applications of depth-area-duration relations? Explain the procedure for developing these relations. **[4]**

Q2) a) Explain Pearson type & its use in hydrology. **[6]**

b) Write a short note on chi squared test. **[4]**

Q3) a) Explain extreme value probability paper with neat graph. **[6]**

b) State various methods to estimate flood and explain the rational method in detail. **[4]**

Q4) a) Describe the modified Puls method of reservoir routing **[6]**

b) Define flood routing. What are the uses of flood routing. **[4]**

P.T.O.

Q5) a) A pumping test was carried out on a new irrigation bore well penetrating fully into a confined aquifer at a rate of 22 lit/sec. The drawdown measured in an observation well located at 45.7 m from the pumping well during the test is given below. determine T and S of the aquifer using Cooper-Jacob method. **[5]**

Time t in hours	0.5	1.8	2.7	5.4	9.0	12.0	18	30	54
Drawdown s in meters	0.091	0.294	0.382	0.55	0.701	0.785	0.911	1.06	1.24

b) Explain how the yield of an open well can be determined using recuperation test. **[5]**

Q6) a) Explain any one method of exploring ground ater and explain any one method of tube well construction. **[6]**

b) What is ground water pollution? How the industrial use of water affects on it. **[4]**

Q7) a) Enlist the various methods of artificial recharge of ground water and explain any one in detail. **[5]**

b) What are different equipment used to drill tube well? Explain one in detail with neat diagram. **[5]**

Q8) a) How porous media models are useful in ground water modelling. **[5]**

b) Write a note on digital computer modeling technique for groundwater analysis. **[5]**

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