MAY 2016

(14)

Total No. of Questions : 8]

SEAT No. :

P4378

[Total No. of Pages : 2

[4960] - 1051

M.E. (Civil) (Water Resources and Environmental Engg.)

HYDROLOGY

(2013 Pattern)

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

Instructions to the candidates:

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

Q1) a) Explain IUH with neat sketch. **[6]**

b) Explain infiltration and its measurement. **[4]**

Q2) a) What is Pearson type I, II and III & their uses in hydrology? **[5]**

b) Write a note on Chi-square test. **[5]**

Q3) a) Explain the method of design flood estimation using the rational method. **[4]**

b) Explain the Goodrich method of flood routing. **[6]**

Q4) a) Explain how the yield of an open well can be determined using recuperation test. **[5]**

b) Define the terms: **[5]**

i) Aquifuge.

ii) Aquiclude.

iii) Aquitard.

iv) Confined aquifer.

v) Perched groundwater.

P.T.O.

Q5) a) Explain step by step design of tube well. **[5]**

b) What are the advantages of ground water compared to surface water? **[5]**

Q6) a) Calculate the discharge in m^3/day of a tube well sunk in unconfined aquifer under following conditions **[6]**

Diameter of tube well = 40 cm

Draw down at well face = 6 m

Effective length of strainer = 200 m

Radius of influence = 200 m

Coefficient of permeability = 50 m/day

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 pumping equipment used to pump the ground water? Explain one in detail with neat diagram. **[5]**

Q8) a) Explain porous media models and analog models for ground water modeling. **[6]**

b) Explain digital computer models for ground water modeling. **[4]**