Registration No:

Total Number of Pages: 02   bput question papers visit http://www.bputonline.com   **M.TECH**
P2WMCC01

2ⁿᵈ Semester Regular Examination 2016-17
GROUND WATER HYDROLOGY
BRANCH: WATER RESOURCE ENGG, WATER RESOURCE ENGG AND MANAGEMENT
Time: 3 Hours
Max Marks: 100
Q.CODE: Z369
Answer Question No.1 which is compulsory and any FOUR from the rest.
The figures in the right hand margin indicate marks.
Semi-logarithm and logarithmic sheets should be supplied

Q1   Answer the following questions: *Short answer type*   **(2 x 10)**
   a) What is plutonic water ?
   b) What is difference between Original and Secondary interstices?
   c) Which material has hightest porosity and How much ?
   d) In which aquifer specific yield and storage coefficient are same?
   e) Which aquifer material is prone to pollution, sandy or cloudy?
   f) What is bailer in construction of water well?
   g) In which method of well construction, bentonite is used?
   h) Which constants are found out in step-drawdown method?
   i) By which equipments, permeability of an aquifer material is found out?
   j) How much % of portable fresh water is available on the earth in comparison to the total water on earth?

Q2 **a)** Describe various types of spring.   **(10)**

   b) When Artificial Recharge is required? Describe various methods for doing so.   **(10)**

Q3   The following discharge drawdown data are obtained from a production well in a step-drawdown test.   **(20)**

   $Q(m^3/min)$:   0.45   1.26   1.73   2.25
   $S_w(m)$:   0.265 1.29   2.325 3.7

   Determine the coefficients of formation loss and well loss.

Q4   The time-drawdown data from an observation well, 12.3m from a pumping well is given in the following table. The well is pumped at the rate of 1150 1pm. Static water level in the test well (before pumping started) is 2.18m. Determine the constants *T* and *S* by the modified Thesis (Cooper-Jacob) method. Under what condition is this method valid?   **(20)**

www.bputonline.com

bput question papers visit http://www.bputonline.com

Table: Time-drawdown data

Time(Min)	Depth of measuring point (m)	Time(Min)	Depth of measuring point (m)
0	2.18	22	2.71
1	2.42	28	2.72
2	2.42	35	2.75
3	2.46	45	2.82
4	2.50	55	2.83
6	2.55	65	2.86
	2.59	80	2.87
10	2.63	100	2.92
14	2.67	120	2.94
18	2.69		

Q5 **a)** Explain the Electric Resistivity method for finding depth of different confined aquifer and ground water table. **(10)**

b) Explain the method for evaluation of pollution potential as recommended by Le Grand. **(10)**

Q6 **a)** Describe the method for finding various aquifer constant for leaky confined aquifer by Thesis method. **(10)**

b) Describe the cable tool method of deep well construction. Draw neat sketches of the various parts of the equipment used. **(10)**

Q7 **a)** Any four method for well development **(10)**

b) Recovery test **(10)**

bput question papers visit http://www.bputonline.com