Roll No. .....

24516

B. Tech 7th Semester (Civil Engg.) Examination – May, 2018

GROUND WATER

Paper : CE-453-F

Time : Three Hours] *[Maximum Marks : 100*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt ***five*** questions in all, selecting at least ***one*** question from each Section. Question No. **1** is ***compulsory***. All questions carry equal marks.

1. (i) Define unsteady flow. $8 \times 2.5 = 20$

(ii) What are the assumptions of Thei's equation ?

(iii) List the various types of stainer in tube wells.

(iv) Define partial penitration of aquifer.

(v) Define compressibility.

(vi) Define porisity

(vii) Name various methods of ground water recharging.

(viii) Compare cable tool and hydrolic rotary method of drilling.

SECTION – A

2. Explain ground water theory with compressibility of aquifer. 20

3. (a) A 30 cm well fully penitrates as confined aquifer 30 m deep. After a long period of pumping at a rate of 1200 lpm, the draw down in the wells at 20 m and 45m from the pumping well are found to be 2.2 and 1.8 m respectively. Determine the transmissibility of aquifer. What is draw down in the pumped well.

(b) (i) Explain storage coefficient.

(ii) Different types of aquifer.

SECTION – B

4. (a) What is mutual interference of well ? How this can be avoided ? 10

(b) Explain partial penitration of draw down in a well. 10

5. Derive Theims equilibrium formula for confined and unconfired aquifer. 20

SECTION – C

6. (a) Discuss spherical flow in a well. 10

(b) What do you meant by artificial recharge of ground water ? What is its necesslty ? 10

7. Define average life of a tube well. What are the causes of failure of tube well ? What are the preventive measures to increase the avarage like of wells. 20

SECTION – D

8. What are the various spreading methods of artifical recharge. Explain these methods in detail. 20

9. Explain the methods of well screens. Describe in detail the different methods used for drilling operation. 20
