

SECTION – D

8. Explain different method of artificial recharge of ground water. 20
9. Write short note on : 5 × 4 = 20
- (i) Induced infiltration
 - (ii) Recharge well
 - (iii) Modification of natural channel
 - (iv) Recharge pits
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Roll No.

24516

B. Tech. 7th Semester (Civil Engg.)

Examination – December, 2016

GROUND WATER ENGG.

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. Question No. 1 is *compulsory*. Attempt one question from each Section. All questions carry equal marks.

1. Describe briefly the following : 2.5 × 8 = 20
- (i) Porosity
 - (ii) Permeability
 - (iii) Transmissibility and conductivity
 - (iv) Unsteady flow

- (v) Leaky artesian
- (vi) Failure of tube well
- (vii) Well sickness
- (viii) Transmissibility

SECTION - A

2. (a) Explain the different type of aquifer with neat sketch. 10
- (b) Derive the ground water flow equation for steady flow in isotropic homogeneous aquifer. 10
3. (a) Explain various method of ground water exploration. 10
- (b) Explain the following : 2.5 × 4 = 10
- (i) Transmissibility
 - (ii) Compressibility
 - (iii) Specific storage
 - (iv) Hydraulic Diffusion

SECTION - B

4. (a) What is leaky aquifer ? Explain with neat sketch. 10
- (b) Derive Thiem's equilibrium formula for discharge of confined aquifer. 10
5. What is mutual interference of well ? How this can avoided ? 20

SECTION - C

6. Write short note on following : 5 × 4 = 20
- (i) Design of well screen
 - (ii) Optimum capacity of well
 - (iii) Gravel packing
 - (iv) Development of tube well
7. (a) Explain different type of tube well and different type of strainers used in tube well. 10
- (b) Explain construction and working of cable tool method with diagram. 10