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B.TECH. CIVIL (WATER RESOURCES MANAGEMENT)

Term-End Examination
December, 2012

ET-534(C) : WATER RESOURCES PLANNING

Time : 3 hours   *Maximum Marks : 70*

Note :   *Attempt **any five** questions. **All** questions carry **equal** marks. Use of scientific calculator is permitted.*

1. (a)   How do the Himalayan mountain ranges differs from peninsular mountains, with respect to water resource considerations ?   7

    (b)   Write a note on land use management.   7

2. (a)   What is ground water balance ? How it is estimated ?   7

    (b)   Discuss the factors affecting creation of irrigation potential and its utilisation.   7

3. (a)   As per census records for the year 1941 to 1991 the population of a town is given below. It is required to find the population in 2016 and 2011, by any two methods.   7

Year	Population in thousands
1941	40.5
1951	45.6
1961	60.4
1971	75.6
1981	99.0
1991	124.8

   (b)   Define various types of irrigation efficiency.   **7**
Explain with suitable example also.

4.   (a)   Discuss any five types of chemical and   **7**
biological impurities existing in Irrigation
water.

   (b)   Differentiate between simulation and   **7**
optimization models. Discuss advantages of
each models.

5.   Explain any four types of discounting techniques   **14**
with suitable example.

6.   (a)   Discuss environmental impact of water   **7**
resources projects. How the indices for EIA
are decided ?

   (b)   What is the need of training and retraining ?   **7**
Differentiate between induction and in
service training.

7.   (a)   What are the factors affecting site selection   **7**
of a reservoir ?

   (b)   Discuss sedimentation and life of a reservoir.   **7**

8. Write short notes on *any four* of the following :

    (a)   Mars curve $3\frac{1}{2}$x4=14

    (b)   Benefit-cost ratio

    (c)   Lakes and Swamps

    (d)   Aerial Photograph

    (e)   Evapotranspiration

    (f)   Irrigation scheduling