No. of Printed Pages : 3

ET-534(C)

B.Tech. Civil (Water Resources Engineering)

Term-End Examination

00265

December, 2014

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) Explain the importance of chemical and bacteriological analysis of water for domestic purposes. 7

(b) Discuss in brief the various physical, chemical and bacterial characteristics of testing of raw water supplies. 7

2. (a) What is peak-hour demand and how does it affect the design of water supply system ? 7

(b) Discuss the following : 7

(i) Intermittent supply versus Continuous supply

(ii) Single supply versus Dual supply

3. Discuss the various factors that influence per capita demand. *14*

4. (a) What is meant by design period and population forecast ? Why is the population forecast necessary in the design of public water supply schemes ? *8*

   (b) Define the following : *6*

   (i) Intensity of rainfall

   (ii) Runoff

   (iii) Consumptive use of water

5. (a) Discuss the logistic curve method for determining the future population of a locality. *7*

   (b) Give the hydraulic budget equations for recharge and discharge area of a basin. What are the factors affecting completion of irrigation projects in time ? *7*

6. What are infiltration galleries and infiltration wells ? Explain both with neat sketches. How are these different from Ranney well ? *14*

7. (a) Enumerate the various forms in which ground water occurs in nature. Give an equation defining Darcy's Law with its limitations. *7*

(b) What are the steps involved in identifying training needs of personnel of an organisation dealing with water resources planning ? 7

8. (a) What are the factors affecting population distribution ? Explain the pattern of population distribution in urban and rural areas. 7

(b) What are the different popular cropping patterns in India ? Distinguish clearly between net sown area and gross cropped area. 7