No. of Printed Pages : 3

ET-534(C)

B.TECH. CIVIL (WATER RESOURCES MANAGEMENT)

00715

Term-End Examination

June, 2012

ET-534(C) : WATER RESOURCES PLANNING

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt **any five** questions.*
*All questions carry **equal** marks.*

1. (a) Discuss the characteristic features of the following : **3½x2=7**

(i) Plains on east and west coasts of India.

(ii) Indian Islands situated in Arabian Sea.

(b) Write a note on identification of various land use categories. **7**

2. (a) An average decline of 2-5 m in the water table is observed, over an area of 60 km^2 due to withdrawal of 15 million m^3 of water from the phreatic aquifer during a period of draught. Subsequently rainfall of 1250 mm occurred and the water levels rose by an average of 1.5m. Find the specific yield in the zone of water level fluctuation and recharge coefficient. **7**

(b) What are the factors affecting completion of irrigation projects in time ? Explain the need of inter-basin water transfer scheme. 7

3. (a) The population of a country in the year 1991 and 2001 was 648,160, 720 and 720, 170, 840 respectively. Determine the growth rate of the country by following methods. 7

(i) Arithmetic annual growth rate.

(ii) Geometric growth rate.

(b) Derive the relation between duty and delta. 7

If 1.5 m^3/sec flow is allowed to the field for a base period of 14 weeks to mature a wheat crop with total irrigation requirement of 40 cm. Determine the duty of water.

4. (a) Write note on following : 3½x2=7

(i) Coagulation

(ii) Sand filter

(b) What are the simulation models ? Discuss its advantages and disadvantages. 7

5. (a) Discuss the feasibility of a water resources project with respect to engineering, economic, financial and environmental aspects. 7

(b) A system of three reservoirs is considered with following data. It is required to find the optimum yield combination from each reservoir for getting a total system yield of 40. 7

Reservoir A		Reservoir B		Reservoir C	
Yield	Cost	Yield	Cost	Yield	Cost
0	0	0	0	0	0
20	20	20	10	20	20
40	30	40	35	40	40

6. (a) Write a note on training programmes and organisations. 7

(b) Discuss the investigations required for reservoir planning. 7

7. (a) How the capacity of a reservoir is computed ? Explain with a suitable example. 7

(b) What is integrated planning of water reseources project ? Discuss. 7

8. Write short notes on ***any four*** of the following : **3½x4=14**

(a) Consumptive use of water

(b) Crop rotation

(c) Regression analysis

(d) Reservoir trap efficiency

(e) Chemical impurities in water

(f) Development of water resources project in India.
