Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

M.Tech., Summer 2017 - 18 Examination

Semester: 2 **Date: 28/ 05/2018**

Subject Code: 03214182 **Time: 2:00 pm to 4:30 pm**

Subject Name: Water Resources Management **Total Marks: 60**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 **(A) Fill in the blanks :** **(05)**

1. To determine water demand in a basin is an _____ of water resources development
2. _____ should be the top most priority of any water resources development plan
3. _____, _____ and _____ are the various types of data required for the water resources development .

(B) Define : **(05)**

1. Conjunctive use of water
2. Base year
3. Economic life of project
4. Annual cost
5. C.R.F.

(C) A water resources project is developed at local level by **(05)**

_____ , _____
_____ and _____

Q.2 **Answer the following questions. (Attempt any three)** (Each five mark) **(15)**

(A) Explain the Top down approach of water resources management.

(B) Explain the Bottom up approach of water resources management.

(C) Explain the purpose of planning and management of water resources system.

(D) Explain the need of planning and management of water resources system.

Q.3 **(A)** Discuss the objectives of the conjunctive use. **(07)**

Q.3 **(B)** Total cost of Ukai dam in 1974 = Rs 80×10^7 **(08)**

Rate of interest = 7 %
Economic life of project = 200 years
Considering 2020 as a base period, determine the annual capital cost of the Ukai project.

OR

Q.3 **(B)** Discuss the various strategies one can use in implementing the conjunctive use. **(08)**

Q.4 **(A)** Cost of a tubewell in 2015 is Rs 3.5×10^5 **(07)**

Rate of interest = 10 %
Economic life of the tubewell = 25 years
If the CRF in 2020 =0.11
Average discharge of the tubewell = 600 lpm
Pumping hours = 12 hours
Determine the annual capital cost / ha

OR

Q.4 **(A)** Write the objective function to achieve the optimal conjunctive use. **(07)**

Q.4 **(B)** Discuss the storage capacity analysis and water transport facility from the point of view of principles of conjunctive use in water resources planning and management. **(08)**