

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
M.Tech. Winter 2017 - 18 Examination

Semester: 1
Subject Code: 03214103
Subject Name: Water Resources Project

Date: 30/12/2017
Time: 2:00 pm to 4: 30 pm
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) Define : Duty, Delta, FIR, GIR, Gross Command Area (05)**
- Q.1 (B) Write short note on reservoir sedimentation control. (05)**
- Q.1 (C) What are the structural tools for water resources planning? (05)**
- Q.2 Answer the following questions. (Attempt any three) (15)**
- Q.2 (A) Explain assessment of social impact of water resources project.**
- Q.2 (B) Enlist functions of multipurpose project. Explain irrigation and flood mitigation.**
- Q.2 (C) Explain soil water classification with neat sketch.**
- Q.2 (D) Differentiate between joint cost and total cost of a multipurpose project. Enumerate three important methods which can be used for dividing the joint cost.**
- Q.3 (A) List out important tasks for preparing a planning report of a water resources project. Explain any one in detail. (07)**
- Q.3 (B) Explain positive environmental impacts of water resources project. (08)**

OR

- Q.3 (B) Using the data given below (all items in thousand rupees), calculate the allocation to each project purpose by the remaining benefit method. Assume total project cost of Rs. 2.01 million.**

Project function	Separable costs	Estimated benefits	Alternate single purpose cost
Flood mitigation	250	350	400
Hydropower	670	1200	870
Irrigation	550	870	850

- Q.4 (A) Discuss with a neat sketch, the various storage zones of dam reservoir. (07)**

OR

Q.4 (A) Monthly inflows at a proposed reservoir site for a drought period of 15 months are given along with the targeted demands. Compute the storage required by plotting sequent peak algorithm. **(07)**

month	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	Apr	May	June	July	Aug
River inflow (M m ³)	250	350	400	200	150	150	100	50	150	300	400	450	150	200	450
Targeted demand (M m ³)	150	150	200	250	350	400	250	200	150	150	100	250	350	300	100

Q.4 (B) A field channel has a culturable command area of 2000 hectares. The intensity for gram is 30% and for wheat is 50%. For gram kor period is 18 days and kor depth is 12 cm. For wheat kor period is 15 days and kor depth is 15 cm. Calculate the discharge of the field channel required. **(08)**