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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- September 2016

B.Tech VII Semester

COURSE CODE: 10B13CE735

MAX. MARKS: 15

COURSE NAME: Dams and Reservoir Design

COURSE CREDITS: 03

MAX. TIME: 1Hr

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Assume suitable data if required.

Q.1 Answer the following in brief: (1x6=6)

- Briefly explain the role of stilling basin in the dam.
- When are the contraction joints needed in a dam?
- Which type of dams would you prefer at a place where hard strata is at considerable depth below the ground surface?
- Bioswales can better act as check dams. Comment
- State the assumption behind drawing the demand line as a tangent to the inflow curve.
- Explain how the utility and purpose of the dams have changed in the recent past.

Q.2 A contour survey of a reservoir site gives the following data:

Contour R.L.(m)	200	210	220
Area (hec)	6.0	18.1	34.0

The capacity of the reservoir up to 200 m elevation is found to be 14.1 hec-m. Determine the general equation for the area-elevation curve and capacity-elevation curve. Also determine the reservoir capacity at RL 225 m. (3)

Q.3 The runoff data for a river during a lean year are given below. Answer the questions to the common data (for Q. i to iii) showing proper calculations and explanations.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
River inflow (Mm ³)	140	27	35	26	16	48	212	180	116	92	67	37

- What is the maximum uniform demand that can be met during the entire year? (1)
- What is the storage capacity required to meet this demand? (3)
- What is the minimum initial storage necessary and when will the reservoir become completely empty after provision of this storage? (2)