

B.Tech. Civil (Construction Management)

Term-End Examination

December, 2014

00415

ET-535(B) : HYDRAULIC STRUCTURES

Time : 3 hours

Maximum Marks : 70

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

1. (a) What do you mean by Reservoirs ? Explain various types of reservoirs in brief. 7
- (b) Discuss the adverse impact of dams and reservoirs on environment. 7
2. (a) What do you understand by the arbitrary profile of a Gravity dam ? 4
- (b) Derive expression for normal, principal and shear stresses at the base of such a dam. 10
3. (a) State the various investigations for locating dam site. 7
- (b) Discuss the causes of failure of earth dams. 7
4. (a) Explain scouring sluices. How do you fix the discharging capacity of under-sluices ? 7
- (b) Define uplift pressure. Discuss the procedure of providing safety against piping as per Bligh's method. 7

5. (a) Describe the design of unlined channel by Kennedy's theory when Q, N, M and S are given. 7
- (b) Discuss the purpose of lining an irrigation canal. 7
6. (a) Explain the requirements of a good outlet. 7
- (b) Describe the design procedure of Sarda Type Fall. 7
7. Write short notes on the following : $4 \times 3 \frac{1}{2} = 14$
- (a) Weirs
- (b) Free board
- (c) Distributory Head Regulator
- (d) Cost of Lining
8. Differentiate between the following : $4 \times 3 \frac{1}{2} = 14$
- (a) Normal pool level and Minimum pool level
- (b) Transverse and Longitudinal joints of a Gravity dam
- (c) Modular and Non-modular Outlets
- (d) Alluvial and Non-alluvial Canals
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