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No. of Printed Pages : 7

ET-536(B)

B.Tech. Civil (Water Resources Engineering)

Term-End Examination

December, 2015

ET-536(B) : HYDRAULIC STRUCTURES – II

Time : 3 hours

Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks. Use of non-programmable calculator only is allowed.

1. (a) Differentiate and distinguish between alluvial and non-alluvial canals. Discuss in detail how inundation canals are cost effective. 7
- (b) What do you understand by contour canals, watershed canals and side-slope canals ? Draw the contour map to illustrate your answer. 7
2. (a) Discuss the factors that influence the choice of an open aqueduct out of Type I, Type II and Type III types of aqueduct. What is the importance of cost factors ? 7

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- (b) Design a trapezoidal channel (side slopes, 2 H : 1 V) to convey 30 cumecs of water with bed slope of 1 in 6000. The canal bed and banks consist of coarse sand of 3 mm size (angle of repose 31°). Adopt the tractive force approach. 7
3. (a) What do you mean by canal lining? Discuss the various types of canal lining with their respective advantages and disadvantages. 7
- (b) What are sluices? Where are they provided? Explain your answer giving neat sketches in brief. 7
4. (a) What are the objectives of a distribution system? What do you understand by the control of a distribution system? 7
- (b) Differentiate and distinguish between Sarda type fall and Straight Glacis fall in brief. 7
5. (a) Describe the design criteria for distributary head regulators and cross-regulators in brief, giving reasons. 7
- (b) Explain the construction, design principles of each element and functioning of a silt excluder and a silt ejector. 7

6. (a) Explain the objectives of river training. What are the various methods of river training ? Discuss in brief with suitable sketches. 7
- (b) Describe the measures of controlling floods. Explain how any other town/city has been protected from floods. 7
7. (a) Why is river improvement required for navigation ? How can river channels be improved for navigation ? Explain your answer with suitable sketches. 7
- (b) Describe the layout and cross-section of guide trends. What is a launching apron ? Explain its functioning with suitable sketches. 7