No. of Printed Pages : 3

ET-535(B)

B.Tech. Civil (Construction Management)

Term-End Examination

00485

June, 2017

ET-535(B) : HYDRAULIC STRUCTURES

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any* ***five*** *questions. All questions carry equal marks. Use of scientific calculator is allowed.*

1. (a) What do you mean by mass curve ? How is it prepared ? 7

(b) Discuss the various uses of reservoirs in brief. 7

2. (a) Explain in detail as to how you will test the stability of an earth dam constructed with C-ϕ soils. 7

(b) Explain in brief the causes of failure of a gravity dam. 7

3. (a) Explain with the help of a diagram, various components of a "Diversion Headwork". 7

(b) Discuss the general requirements of a fish ladder. Also draw the typical cross-section of a fishway. 7

4. (a) Classify canals according to the material through which the water is conveyed. 7

(b) Describe the Lacey's method of channel design. 7

5. (a) Discuss the various types of canal linings with their respective advantages and disadvantages. 7

(b) What do you mean by flexibility of an outlet ? Derive equal flexibility in a channel where the relation between discharge (Q) and depth of flow (h) can be expressed as $Q = Ch^n$. 7

6. (a) Explain the design parameters of cross-drainage works. 7

(b) Discuss the methods available for controlling entry of silt into a canal. 7

7. Write short notes on the following : $4 \times 3\frac{1}{2} = 14$

(a) Reservoir Sedimentation

(b) Elementary Profile of a Gravity Dam

(c) Khosla's Theory

(d) Layout of a Canal Distribution System

8. Differentiate between the following : $4 \times 3\frac{1}{2} = 14$

(a) Normal pool level and Minimum pool level

(b) Weir and Barrage

(c) Lined and Unlined canals

(d) Modular and Non-modular outlets
