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ET-536(B)

B.Tech. Civil (Water Resources Engineering)

Term-End Examination

00953

June, 2018

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 is permitted.*

1. (a) Discuss in detail how inundation canals are cost effective. 7

(b) Explain the features of navigation canals. 7

2. (a) Discuss the typical functions of "Berm" in a canal section. 7

(b) Explain the design parameters of a cross-drainage work. 7

3. (a) Using Lacey's basic regime equations, show that $P = 4{\cdot}75\sqrt{Q}$, where 7

P = Wetted perimeter, m

Q = Discharge, cumec.

(b) Explain the design of unlined canals using Kennedy's theory. 7

4. (a) Explain the characteristics of materials selected for lining an irrigation channel. 7

(b) What do you mean by flexibility of an outlet ? 7
Show that relation between Flexibility (F) and Sensitivity (S) can be expressed as $S = nF$.

5. (a) What do you understand by canal falls ? Discuss in brief the design criteria of a "Sarda type fall". 7

(b) Describe the functions of a cross-regulator. 7

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

(b) Explain the common methods of river training in brief. 7

7. Write short notes on the following : $4 \times 3\frac{1}{2} = 14$
   (a) Capacity of a Canal
   (b) Level Crossing
   (c) Cost of Lining
   (d) Canal Distribution System

8. Distinguish between the following : $4 \times 3\frac{1}{2} = 14$
   (a) Contour and Ridge Canal
   (b) Aqueduct and Syphon Aqueduct
   (c) Modular and Non-Modular Outlets
   (d) Canal and Distributary Head Regulator