No. of Printed Pages : 3

ET-536(B)

B.Tech. Civil (Water Resources Engineering)

Term-End Examination

00624

December, 2017

ET-536(B) : HYDRAULIC STRUCTURES – II

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any* ***five*** *questions. All questions carry equal marks. Use of scientific calculator is permitted. Assume any suitable data, if necessary.*

1. Explain the following in 80 words each : $4 \times 3\frac{1}{2} = 14$

(a) Power Canal

(b) Capacity of Canal

(c) Inundation and Permanent Canal

(d) Alignment of Canal

2. (a) Discuss the factors influencing stability of earth fills or cuttings. 7

(b) What are the various parameters of cross drainage works ? Discuss the individual influence of each parameter and measures necessary to ensure structural safety of the works. 7

3. (a) Explain the limitation of Kennedy's and Lacey's silt theories and their implications. 7

(b) Design an irrigation channel to supply 50 cumec of water by Lacey's method, assuming a silt factor of 1·0. 7

4. (a) What are the various materials used for lining of a channel ? Also write the criteria for selection of lining materials. 7

(b) What do you mean by flexibility of an outlet ? Show that flexibility (F) and sensitivity (S) can be expressed as S = nf. 7

5. (a) What are the various types of Cisterns ? What is the most efficient type for energy dissipation ? 7

(b) What are the various types of falls commonly adopted on canals ? Discuss the suitability of each type. 7

6. (a) What are the design criteria for distributary head regulators ? Give justifications. 7

(b) What are Silt Vanes, Reverse Vanes, Gibb's Groyne Walls and Skimming Platforms ? Explain their functions. 7

7. (a) Write down the design procedure of a guide bank with reference to a bridge. *10*

(b) Write a short note on Locks. *4*

8. (a) Write a detailed essay on river training, giving neat and labelled sketches. *7*

(b) Explain how a town/city can be protected from floods. Discuss with example. *7*
