Section–D

8. Briefly explain the designed procedure for a standard silting basin (Type-D). 20

9. With the help of neat self explanatory sketch explain all types of spillway. 20

B. Tech. 7th Semester (Civil) F. Scheme
Examination, December– 2017
IRRIGATION ENGG.-II
Paper– CE-407-F

Time allowed : 3 hours] *[Maximum marks : 100*

Note : *Attempt **five** questions in all, selecting at least **one** question from each section. **Question No. 1 is compulsory**.*

1. (i) What is Silting Basin ? 2×10=20
   (ii) Classifications of syphon aquaduct.
   (iii) Types of cross drainage work.
   (iv) Discharge formula for ogee spillway.
   (v) Factors governing the design of a weir
   (vi) Importance of Rock Toe and relief work.
   (vii) Functions of inlet and outlets.
   (viii) Mention the factors governing the spacing of groynes.
   (ix) List the components of a guide bank.
   (x) Draw a neat sketch of ogee spillway.

Section–A

2. A weir with a vertical drop has the following particulars.

Nature of bed = Coarse sand with the value of Bligh's C = 12

Flood discharge = 350 cusecs

Length of weir = 4.5 m

Height of weir above low water = 2m

Height of falling shutter = 0.6 m

Top width of weir = 2.5 m

Bottom width of weir = 4.00 m

Design the length and thickness of apron and draw the crossection of the weir. 20

3. Design and sketch a guide bank including launching apron from the following data.

Maximum discharge = 11000 cusecs

Highest flood level = 270 m

River bed level = 240 m

River bed material average size = 0.25 m. 20

Section–B

4. What is flood routing ? Explain the procedure of different methods of flood routing in detail. 20

5. Explain how will you determine the following in design of a syphon aquaduct.

(i) Waterway of the drain and cross sectional area of the drain.

(ii) Head lost through syphon barrel.

(iii) Uplift pressure due to seepage flow. 20

Section–C

6. Describe with the help of a neat sketch how top seepage line is drawn in a homogenous dam without any arrangement of drainage. 20

7. Design an ogee spillway from the following data – 20

Height of spillway crust above bed = 100 m

Design of discharge = 10,000 m^3/sec.

Number of span = 10

Clear distance between piers = 20 m

Thickness of piers = 5 m

Slope of d/s for face of overflow section = 1:1.25

Assume e = 2

Draw the crossection of the designed spillway.