53 (CE 716) IREN

2018

IRRIGATION ENGINEERING

Paper : CE 716

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer ***any five*** *questions.*

1. *(a)* Explain various types of canals. 6

(b) Design a channel section by Kennedy's theory from the following data :
Discharge = 2825 *cumecs*
Kutter's $N = 0{\cdot}0225$
CVR $(m) = 1$
Side Slope = ½ : 1
B/D = 7·6.
Find also the bed slope of channel. 6

(c) Explain the procedure of designing a channel with Kennedy's theory. 8

2. (a) Design a channel section for the following data :
Discharge = 30 *cumecs*
Silt factor, $f = 1{\cdot}00$
Side slope = ½ : 1.
Find also the longitudinal slope. 6

(b) What is meant by diversion headwork. What are the objectives of diversion headwork ? 4

(c) Explain in brief, with the help of diagram, the various components of diversion headwork. 10

3. (a) What are the requirements of good lining materials ? Enumerate various types of linings used in canal. 10

(b) Write a note on the selection of suitable type of cross drainage works. 4

(c) Differential between Aqueduct and Super Passage. 6

4. (a) Write a note on causes of failure of Weir/Barrage on permeable foundation. 6

(b) Explain in brief the Bligh's Creep theory. 6

(c) What do you understand by a fall in a canal ? Why is it necessary to enumerate various types of falls. 8

5. (a) Explain the procedure of designing Sarda type fall. 15

(b) Explain Lacey's Silt theory. 5

6. (a) With the help of diagram, explain various components of lined canal. 10

(b) Describe with the help of sketches, the various types of cross drainage works. 10

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