



C09-C-403

3424

BOARD DIPLOMA EXAMINATION, (C-09)

MARCH / APRIL - 2019

DCE - IV SEMESTER EXAMINATION

IRRIGATION ENGINEERING

Time : 3 Hours]

[Total Marks : 80

PART - A

3×10=30

- Instructions :**
- (1) Answer **ALL** questions.
 - (2) Each question carries **THREE** marks.
 - (3) Answer should be brief and straight to the point.
- 1 A channel carrying 2 cumec discharge is able to irrigate 800 hectares of land. In the second system, a channel carrying 0.8 cumec is irrigating 300 hectares of land. Base period for both crops is 140 days. Which system is running economically ?
 - 2 Differentiate between Flow irrigation and Lift irrigation.
 - 3 List the component parts of a weir.
 - 4 Differentiate between a storage head work and diversion head work.
 - 5 Define (a) Phreatic line (b) Saturation gradient.
 - 6 State any three situations where Earthen dams are suitable.
 - 7 Define (a) F.R.L (b) M.W.L (c) Freeboard of a reservoir.
 - 8 Draw the cross section of a canal in partial embankment and partial cutting.

- 9 What is a watershed ? State the need for watershed development in our country.
- 10 What is soil moisture conservation method.

PART - B**10×5=50**

Instructions :

- (1) Answer any **FIVE** questions.
- (2) Each question carries **TEN** marks.
- (3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11 Explain the working of float type automatic rain gauge with a neat sketch.
- 12 What are the different methods of Irrigation ? Explain about Boarder. strip and check basic method.
- 13 State the functions of the following components of diversion head works,
(a) Weir (b) Scouring sluices (c) Divide wall (d) Head Regulator.
- 14 What is elementary profile of gravity dam? Derive an expression to find the minimum base width of the dam when the reservoir is full.
- 15 (a) What is the necessity of grouting in dams ?
(b) Explain different types of grouting.
- 16 Draw a neat sketch of siphon spillway and explain its working.
- 17 Define cross masonry work in canal and briefly explain with sketch :
(a) Super passage (b) Under tunnel
- 18 Explain about the following terms :
(a) Rain water harvesting
(b) Percolation tanks
(c) Artificial recharge of water.