

**4621****BOARD DIPLOMA EXAMINATION, (C-14)****MARCH /APRIL-2019****DCE - FIFTH SEMESTER EXAMINATION**

IRRIGATION ENGINEERING

Time: 3 Hours

Max.Marks: 80

**PART-A****10x3=30M**

**Instructions:** 1) Answer all questions. Each question carries three marks.  
2) Answers should be brief and straight to the point and shall not exceed five simple Sentences.

- 1) Differentiate between direct and storage irrigation.
- 2) State any three points to be considered for setting up of rain gauge station at a place.
- 3) Distinguish between barrages and weirs.
- 4) Define the terms a) Full reservoir level b) Gravity dam c) Free board
- 5) Explain 'balanced depth of cutting' and state its necessity.
- 6) State the need for canal lining.
- 7) With the help of a neat sketch, explain about sprinkler irrigation.
- 8) Describe the warabandi system.
- 9) State the need for watershed management.
- 10) State any three methods of artificial recharge of ground water.

**PART-B**

**5x10=50M**

**Instructions:** 1) Answer any five questions. Each question carries ten marks.  
2) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11) a) State the different methods of expressing duty.  
b) Explain the factors affecting duty of water.
- 12) a) State i) Ryve's formula & ii) Dickens formula for determining maximum flood discharge.  
b) Six rain gauge stations are enclosed by catchment areas of 60,55,80,58,47 & 60 sq.Km. respectively. The rain fall recorded at the six stations are 250,300,230,350,320 & 410 mm respectively. Find the average rainfall over the entire catchment area by Theissen's Polygon method.
- 13) Explain with a sketch the component parts of a weir
- 14) Describe the head regulator with the help of a sketch.
- 15) State different types of spillways and explain about any two of them with sketches.
- 16) Explain the causes of failures of earthen dams and their precautions.
- 17) With the help of neat sketches, explain about typical cross sections of canals.
- 18) a) State the ill effects of water logging.  
b) Mention the purposes for which a groyne is provided in a river.

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