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**Question Paper Code : 55245**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2011.

### Fifth Semester

Civil Engineering

CE 2301 – IRRIGATION ENGINEERING

(Regulation 2008)

**Time : Three hours**

Maximum : 100 marks

Answer ALL questions.

**PART A — (10 × 2 = 20 marks)**

1. Mention the major crop seasons of India and what are the principal crops grown in these seasons.
2. List various irrigation efficiencies.
3. What are the system tanks and non-system tanks?
4. List the components of a drip irrigation system.
5. Sketch the section and plan of an arch dam. Give an example for an arch dam in India.
6. What is a gravity weir? How is gravity weir further subdivided in to various types?
7. What are the functions of a silt extractor in a canal head work?
8. Mention various types of class-drainage works found in a canal network.
9. What is meant by participatory management in irrigation?
10. List a few performance indicators for an irrigation system.

**PART B — (5 × 16 = 80 marks)**

11. (a) Write an essay to justify the need for irrigation development to sustain agricultural sector in India.

Or

- (b) Discuss the steps involved in development of an irrigation project on the following headings:
- (i) Feasibility of an Irrigation project
  - (ii) Planning of an Irrigation project
  - (iii) Environmental effects of an Irrigation project.
12. (a) Write about the salient features of the following types of irrigation and discuss their relative merits and demerits.
- (i) Canal irrigation
  - (ii) Lift irrigation
  - (iii) Tank irrigation.

Or

- (b) (i) Elaborate on the scope of adoption of sprinkler irrigation.
- (ii) Discuss suitable crops, soil and slope factors for design of a sprinkler system.
- (iii) Explain how high uniformity co-efficient can be achieved in sprinkler operations.
13. (a) (i) What are earth dams? List their advantages and disadvantages. (8)
- (ii) Discuss physical factors that govern selection of type and location of a dam. (8)

Or

- (b) (i) Discuss in detail various forces acting on a gravity dam. (8)
- (ii) List the main cause of failure of a gravity dam? (8)
14. (a) With a neat sketch indicate the components of a typical canal head works and discuss the functions of each of the components.

Or

- (b) (i) Discuss in detail the various types of canals. Explain how they are classified. (8)
- (ii) Elaborate on Alignment of canals in detail. (8)
15. (a) (i) What is meant by on farm development? (5)
- (ii) How could water loss be minimized at command area level? (5)

(iii) Justify the need for optimising water use. (6)

Or

(b) (i) What is a Water Users Association? (5)

(ii) Who are its members? (5)

(iii) What is the role of the leader of a Water Users Association? (6)

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