

# 22598

**12425**

**03 Hours / 70 Marks**

Seat No. 

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- Instructions* – (1) All Questions are *Compulsory*.  
(2) Answer each next main Question on a new page.  
(3) Illustrate your answers with neat sketches wherever necessary.  
(4) Figures to the right indicate full marks.  
(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

- 1. Attempt any FIVE of the following :** **10**
- a) State the need of irrigation.
  - b) Enumerate any four properties influencing irrigation.
  - c) Define Infiltration.
  - d) Elaborate subsurface irrigation system.
  - e) Enlist any four traditional irrigation methods. (Surface irrigation methods)
  - f) Explain Drip irrigation system.
  - g) Define fertigation.

P.T.O.

2. Attempt any THREE of the following : 12
- a) Explain area velocity water measurement method, using current meter.
  - b) Classify soil according to irrigability classes.
  - c) Explain the mathematical relation between Duty and Delta.
  - d) Write notes on crop period and Base period.
3. Attempt any THREE of the following : 12
- a) Classify water application methods and explain wild flooding irrigation.
  - b) Enlist the components of Micro irrigation system and explain any four in details.
  - c) Explain the hydraulics of drip irrigation system.
  - d) Enlist any four multipurpose and special applications of sprinkler.
4. Attempt any THREE of the following : 12
- a) Draw a neat sketch of check basin irrigation and explain it in details.
  - b) Write notes on automation highlighting its –
    - i) Need
    - ii) Merits
    - iii) Demerits
    - iv) Components
  - c) Explain volume based automated irrigation system.
  - d) Enlist the types of special drainage system and explain mole Drains in details.
  - e) Classify types of drainage systems in details.

**5. Attempt any TWO of the following :****12**

- a) Write brief notes on crop water requirement highlighting –
  - i) Evaporation
  - ii) Evapotranspiration
  - iii) Net irrigation
  - iv) Gross irrigation
- b) Differentiate between border irrigation and furrow irrigation.  
(Six point each)
- c) Explain sprinkler irrigation system with its adaptability, limitations, components and applications.

**6. Attempt any TWO of the following :****12**

- a) Classify types of control and explain close loop control of irrigation system with neat flow diagram.
  - b) Write note on surface drainage with its –
    - i) Components
    - ii) Factors affecting drainage
    - iii) Types of land required
  - c) Explain in details the self affected soil reclamation measures.
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