

22598

24225

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) Assume suitable data, if necessary.
 - (6) 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 major and medium irrigation schemes of India.
 - b) State properties of influencing irrigation.
 - c) Write characteristics of soil moisture.
 - d) Classify water application methods.
 - e) Elaborate Contour irrigation.
 - f) State scope of Micro-irrigation.
 - g) Write need of automation of micro-irrigation system.
- 2. Attempt any THREE of the following: 12**
- a) Describe soil irrigability classes.
 - b) Describe the mathematical relation between Duty and Delta.
 - c) Explain area velocity water measurement method.
 - d) Explain Gross and Net irrigation requirement.

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- 3. Attempt any THREE of the following:** **12**
- a) Explain in detail Furrow irrigation.
 - b) Explain hydraulics of drip irrigation system.
 - c) Explain different types of Micro-irrigation system.
 - d) Write benefits and applications of drip irrigation system.
- 4. Attempt any THREE of the following:** **12**
- a) Explain hydraulic of check basin irrigation.
 - b) Describe the components of Micro-irrigation automation system.
 - c) Write advantages and limitations of Fertigation.
 - d) Define Drainage and explain necessity of drainage.
 - e) Compare surface and sub-surface drainage.
- 5. Attempt any TWO of the following:** **12**
- a) Describe crop water requirement in detail.
 - b) Describe Sprinkler irrigation highlighting its adaptability, limitations and applications.
 - c) Describe in detail salt affected soil reclamation measures.
- 6. Attempt any TWO of the following:** **12**
- a) Explain:
 - i) Mole drains
 - ii) Vertical drainage
 - iii) Bio drainage
 - b) Difference between Border irrigation and Furrow irrigation.
(Any six points)
 - c) Explain:
 - i) Time based automated irrigation system.
 - ii) Volume based automated irrigation system.
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