

313359

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 answer 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) Define soil structure with give one example.
  - b) Enlist any four components of Hydrological cycle.
  - c) Enumerate five types of water erosion.
  - d) Define strip cropping.
  - e) Define rain water harvesting.
  - f) Define hydraulic conductivity of soil.
  - g) Write any four farms of precipitation.

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- 2. Attempt any THREE of the following:** **12**
- a) Enlist the soil properties and explain its physical properties in details.
  - b) Classify raingauge and explain the working of any recording type raingauge.
  - c) Explain wind erosion with its causes and control measures.
  - d) Write down any four applications of agronomical erosion control measures.
- 3. Attempt any THREE of the following:** **12**
- a) Classify water erosion and explain stream bank erosion in details.
  - b) Differentiate between contour farming and strip cropping.
  - c) Write down any four functions of ground water recharge.
  - d) Explain roof water harvesting with neat sketch.
- 4. Attempt any THREE of the following:** **12**
- a) Explain in details the application of USLE in soil erosion estimation.
  - b) Write notes on ground water harvesting highlighting:
    - i) Water scarcity in 21<sup>st</sup> Century.
    - ii) Concepts
    - iii) Functions.
  - c) Explain the term soil water in details, with different types of soil water.
  - d) Define soil texture and explain soil texture triangle with neat sketch.
  - e) Write notes on runoff highlighting its:
    - i) Types
    - ii) Factor affecting
    - iii) Measurement

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

- a) Draw a neat sketch of Hydrological cycle and label the following components:
  - i) Precipitation
  - ii) Interception
  - iii) Infiltration
  - iv) Runoff
  - v) Evaporation
  - vi) Evapotranspiration.
- b) Enlist and explain four stages of gully development.
- c) Differentiate between contour bund and graded bund.

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

- a) Enlist four types of farm pond and explain off-stream farm pond in details.
  - b) Classify gully and explain its shape based classification in details.
  - c) Enlist erosion control engineering measures and explain contour trenches in detail.
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