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3 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) 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) Define Agriculture.
  - b) Enlist any four physical properties of soil.
  - c) Define porosity of soil.
  - d) Enumerate any four soil types occurring in pan India.
  - e) Write down any two objective of tillage.
  - f) Define relay cropping.
  - g) Write destination of agricultural engineering.

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- 2. Attempt any THREE of the following:** **12**
- a) Enlist any four traditional methods of plant production and explain any one in details.
  - b) Write notes on branches of agriculture.
  - c) Explain the concept origin and nature of soil.
  - d) Enlist the properties of soil and explain the chemical properties of soil.
- 3. Attempt any THREE of the following:** **12**
- a) Explain the soil profile in details with neat labelled sketch.
  - b) Enlist any four engineering applications on agriculture.
  - c) Write notes on agricultural engineering highlighting its –
    - i) Definition
    - ii) Importance
    - iii) Branches.
  - d) Define and explain the soil and water conservation.
- 4. Attempt any THREE of the following:** **12**
- a) Write notes on current scenario of Indian agriculture resources highlighting –
    - i) Land
    - ii) Weather
    - iii) Irrigation
    - iv) Labour.
  - b) Classify various soil distribution in India.
  - c) Differentiate between primary and secondary tillage. (Any four points)
  - d) Differentiate between cropping system and cropping pattern. (Any four points)
  - e) Enlist scope and importance of agrobased industries in India (Two points each).

- 5. Attempt any TWO of the following:** **12**
- a) Enlist any six cropping system and explain mono cropping and mixed cropping.
  - b) Define cropping pattern and explain the cropping pattern of Maharashtra state.
  - c) Classify and explain the crops based on season, soil and weather.
- 6. Attempt any TWO of the following:** **12**
- a) Enumerate and explain any four factors affecting tillage operation.
  - b) Write down equipments use for primary, secondary and enter activation. (Four each)
  - c) Explain modern concept of tillage, highlighting its SRT (Saguna Rice Technique).
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