

22615

22232

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 answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.

Marks

1. Attempt any FIVE of the following :

10

- (a) List the name of fertilizer industries in India. (any two)
- (b) List the micronutrients required for plants. (any four)
- (c) Write physical and chemical properties of NH_3 . (any two)
- (d) List four applications of Ammonium Chloride Fertilizers.
- (e) Write raw materials required for production of single super phosphate.
- (f) Write any one grade of NPK fertilizers.
- (g) Describe the need of bio-fertilizer.

2. Attempt any THREE of the following :

12

- (a) Explain the importance of micro-nutrients in the fertility of soil.
- (b) Write the role of essential elements in the plant growth.
- (c) Write the secondary nutrients and raw materials for nitrogenous fertilizers.
- (d) Write the initiatives taken by government towards bio-fertilizers.



- 3. Attempt any THREE of the following : 12**
- (a) Explain the construction and working of Ammonia converter.
 - (b) Describe the manufacturing of Calcium Ammonium Nitrate with flow diagram.
 - (c) Give raw materials and method of production of Ammonium Chloride with reaction.
 - (d) Write the proper method for storage and handling of ammonia.
- 4. Attempt any THREE of the following : 12**
- (a) Explain the method of production of single super phosphate with flow diagram.
 - (b) Compare single super phosphate and triple super phosphate w.r.t Chemical reaction, raw materials.
 - (c) Explain the method of production of Diammonium Phosphate with flow diagram.
 - (d) Write the application of single super phosphate and how it is stored.
 - (e) Write the flow diagram of production of triple super phosphate.
- 5. Attempt any TWO of the following : 12**
- (a) Write the method for manufacturing NPK fertilizer and its applications with process flow diagrams
 - (b) Describe the method for production of Nitrophosphate with raw materials, reaction and flow diagram.
 - (c) “Now a days mixed fertilizers are used frequently” explain.
- 6. Attempt any TWO of the following : 12**
- (a) Write the methods of preparation, construction and working of vermi-compost pit.
 - (b) Describe the method of preparation of bio-fertilizer by using kitchen waste.
 - (c) Describe the merits and demerits of vermi-compost bio-fertilizer.
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