

22615

23242

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) 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) List the raw material required for nitrogenous fertilisers.
- (b) State the importance of fertilizer nutrient's.
- (c) List any two properties of Ammonia.
- (d) List the raw materials required for production of Ammonium Chloride.
- (e) Write the chemical reaction for production on diammonium phosphate.
- (f) Name any two devices used for the storage of NPK fertilizers.
- (g) State any two schemes of state government for Bio fertilizers.

**2. Attempt any THREE of the following :**

**12**

- (a) Explain the importance of Micro-nutrients in fertility of soil.
- (b) List the secondary nutrients & its importance in plant growth.
- (c) Explain with flow diagram the manufacturing of Ammonium chloride.
- (d) Differentiate between single super phosphate & triple super phosphate.



- 3. Attempt any THREE of the following : 12**
- (a) Explain with sketch working of the Ammonia Converter.
  - (b) Explain storage and handling of phosphatic fertilizers.
  - (c) Explain the method for manufacturing of NPK fertilizers.
  - (d) Explain the method of preparation of vermi-compost.
- 4. Attempt any THREE of the following : 12**
- (a) Draw the process flow diagram for the production of Diammonium phosphate.
  - (b) Explain role of fertilizer nutrients in growth of plant.
  - (c) Write in short about the development of fertilizer industries in India.
  - (d) Explain storage & handling device for ammonium fertilizers.
  - (e) Give the application of phosphate fertilizer.
- 5. Attempt any TWO of the following : 12**
- (a) Explain in detail the manufacturing process of Ammonia.
  - (b) Describe in brief the manufacturing process of Nitro phosphate.
  - (c) Explain bio-fertilizer made by using kitchen waste.
- 6. Attempt any TWO of the following : 12**
- (a) Give the merits & demerits of Bio-fertilizer.
  - (b) Explain the manufacturing process for Triple Super Phosphate.
  - (c) Explain the method of production of calcium ammonium nitrate with reactions & flow diagram.
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