

22615

21222

3 Hours / 70 Marks

Seat No.

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15 minutes extra for each hour

- 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 nutrients available from fertilizers.
- (b) Name any four government owned fertilizer industries.
- (c) Write four industrial applications of ammonia.
- (d) Write the percentage of P_2O_5 available in triple super phosphate.
- (e) List raw material required for manufacturing of triple super phosphate.
- (f) Elaborate term NPK in mixed fertilizer.
- (g) List feedstock used for production of biofertilizer.

2. Attempt any THREE of the following :

12

- (a) Explain importance of micro nutrients in fertilizing of soil.
- (b) State and explain role of fertilizer industry in agricultural revolution.
- (c) Write feedstock required for nitrogenous fertilizers. State applications of these fertilizers.
- (d) State the applications of fertilizer nutrients.

- 3. Attempt any THREE of the following :** **12**
- (a) Draw neat sketch of ammonia converter.
 - (b) Explain manufacturing of ammonium chloride with reaction involved in it.
 - (c) Write precautions taken while handling and storage of ammonia.
 - (d) Describe manufacturing of calcium ammonium nitrate with flow diagram.
- 4. Attempt any THREE of the following :** **12**
- (a) Differentiate between single and triple super phosphate.
 - (b) Describe manufacturing of Diammonium phosphate.
 - (c) Describe manufacturing of single super phosphate.
 - (d) Draw Process Flow Diagram (PFD) of triple super phosphate manufacturing.
 - (e) Write the chemical formula of
 - (i) Single Super Phosphate
 - (ii) Triple Super Phosphate
- 5. Attempt any TWO of the following :** **12**
- (a) Explain importance of mixed fertilizers over regular fertilizers.
 - (b) Describe manufacturing of nitrophosphate with raw material, reactions & PFD.
 - (c) Explain the method for mixed fertilizers with PFD.
- 6. Attempt any TWO of the following :** **12**
- (a) Explain manufacturing of biofertilizers using kitchen waste.
 - (b) State the reasons for popularity of biofertilizers. Write initiative taken by government for promotion of biofertilizers.
 - (c) Explain manufacturing of Ammonia with neat PFD.
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