

Registration No. :

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Total number of printed pages – 2

B. Tech
PECH 5302

Sixth Semester Regular Examination – 2015

FERTILISER TECHNOLOGY

BRANCH : CHEM

QUESTION CODE : J 455

Full Marks – 70

Time : 3 Hours

*Answer Question No. 1 which is compulsory and any **five** from the rest.
The figures in the right-hand margin indicate marks.*



1. Answer the following questions : 2 × 10
- (a) Mention the essential plant nutrients.
 - (b) What are the primary and secondary plant nutrients ?
 - (c) Write the functions of phosphorus on the growth of plants.
 - (d) Mention the disadvantages of organic manures.
 - (e) In di-ammonium phosphate the content of N and P₂O₅ are ____ and ____ %.
 - (f) Mention the chemical reactions involved in the manufacture of ammonium chloride.
 - (g) Mention the properties and uses of ammonium nitrate.
 - (h) What are the two ores required for the preparation of potassium chloride ?
 - (i) How different fertilizers are being stored ?
 - (j) What do you understand by fluid fertilizers ?
2. (a) Discuss the main functions of micronutrients. 5
- (b) Discuss both the external and internal factors affecting the absorption of nutrients. 5

P.T.O.

3. (a) Critically compare between manures and fertilizers. 5
(b) Discuss briefly the characteristics and selection of nitrogenous fertilizers. 5
4. Discuss in detail the manufacture of ammonium sulphate by Gypsum process with a neat diagram. Also mention the properties and uses. 10
5. Discuss in detail the manufacture of urea with a neat diagram. Also discuss the major engineering problems associated with its production. Mention also the properties and uses of urea. 10
6. (a) What do you understand by phosphate fixation ? Explain with suitable chemical reactions. 5
(b) Write the chemical reactions involved for the manufacture of potassium sulphate when the raw materials are potassium chloride and langbeinite. Also mention the uses of potassium sulphate. 4+1
7. (a) Discuss the characteristics, advantages, and disadvantages of complex fertilizers. 6
(b) Briefly discuss about the production of urea ammonium phosphate. Also mention its properties and uses. 4
8. Write short notes on any **two** : 5 × 2
(a) Need for micronutrients
(b) Calcium ammonium nitrate
(c) Triple superphosphate
(d) Grades of NPK fertilizers.

