

Signature of Centre Superintendent

**Roll No. :** (in figure) \_\_\_\_\_ (in words) \_\_\_\_\_

Student Index No. \_\_\_\_\_ Regn. No. \_\_\_\_\_ of \_\_\_\_\_

**Time : Two Hours**

**Full marks : 40**

Questions are of value as indicated in the margin

**Part - I**  
**(Objective and Short Answer Type)**  
**(Use only ball point pen)**

**Time : 20 minutes**

**Full marks : 10**

- Note:** 1. Answer in question paper itself.  
2. Striking, rewriting or overwriting are not allowed in the objective type questions.

**1. Fill in the blanks:**

10×0.5=5

- (a) Nitrogen deficiency is first observed when \_\_\_\_\_ leaves of plants turn yellow.
- (b) Elemental sulphur contains \_\_\_\_\_ per cent sulphur.
- (c) Single super phosphate contains approximately \_\_\_\_\_ per cent sulphur.
- (d) \_\_\_\_\_ compound is toxic to the plants particularly when urea is applied as foliar spray.
- (e) Fluorapatite is a rich source of \_\_\_\_\_ element.
- (f) Calcium is taken up by the plants in the form of \_\_\_\_\_ ion either from the soil or from the clay complex.
- (g) Oxidizable organic carbon in soil is determined by \_\_\_\_\_ method.
- (h) \_\_\_\_\_ is the rich source of all the plant nutrients in soil.
- (i) Phorate is oxidized to \_\_\_\_\_ and \_\_\_\_\_ compounds in plants.

**2. Choose the correct answer (any ten):**

10×0.5=5

- i) Which one of the following mineral contains Mg?  
a) Apatite    b) Gypsum    c) Calcite    d) Chlorite
- ii) Which one of the following element is oxidized by *Thiobacillus thiooxidans*?  
a) Sulphur    b) Nitrogen    c) Copper    d) Iron
- iii) What will be the product of Dicalcium phosphate dehydrate in acid soil?  
a) Secondary orthophosphate    b) Primary orthophosphate    c) Phosphoric acid    d) None of them
- iv) Single super phosphate is produced by the reaction of rock phosphate with  
a)  $\text{HNO}_3$     b)  $\text{H}_3\text{PO}_4$     c)  $\text{H}_2\text{SO}_4$     d)  $\text{HCl}$
- v) Which of the following is an acid soluble phosphatic fertilizer?  
a) Superphosphate    b) Dicalcium phosphate    c) Rock phosphate    d) None of these
- vi) Which one is the active compound of Bordeaux mixture?  
a) Basic copper sulphate    b) Basic calcium sulphate    c) Basic cupric chloride    d) Basic cupric sulphate
- vii) Mancozeb is used as  
a) Herbicide    b) Acaricide    c) Fungicide    d) Insecticide
- viii) Atrazine, a selective pre-emergence herbicide, falls under the group of  
a) Dinitrophenols    b) Triazines    c) Amides    d) Dithiocarbamates
- ix) Chemicals, which do not kill the fungi but inhibit the growth of the fungi, are termed as –  
a) Protectants    b) Systemic fungicide    c) Eradicant    d) Fungistats
- x) The fungicide that is taken up by the plant and translocated within the plant body is known as  
a) Contact fungicide    b) Systemic fungicide    c) Fumigants    d) None of these
- xi) Per cent N content in FYM is  
a) 0.5    b) 5.0    c) 0.1    d) 10.0
- xii) Which one is used as fungicide?  
a) 2,4-D    b) Malathion    c) Propiconazole    d) Glyphosate

**B.Sc. (Ag.) Honours Semester-III Examination, 2016**  
**Course No: SSC-211 (Manures, Fertilizers and Agro-Chemicals)**

**Part - II**  
**(Descriptive Type)**

**Time : 100 Minutes**

**Full marks : 30**

Questions are of value as indicated in the margin

**Answer any three questions from the following.**

3. i) What do you mean by conjugated, non-conjugated and cumulative diene?  
ii) Write down the utility and mechanism of adduct formation of Diels-Alder Reaction.  
iii) Write down the manufacturing process, properties in respect of Chemical composition, Hygroscopicity and storage capacity of the following fertilizers:  
a) Urea      b) DAP      (1.0+1.0+1.0)+2.5+(1.5+1.5+1.5)=10
4. A) What happens when  
a) The mixture of single super phosphate and ammonium sulphate is stored for a long period?  
b) The mixture of single super phosphate and urea is stored for a long period?  
B) Write down the types of super phosphate manufactured in the industry.  
C) Write down the principles involved in the manufacturing process of single super phosphate.  
D) What is the chief chemical constituent of single super phosphate?  
E) Why sulphuric and hydrochloric acid is not used for production of Single Super phosphate in Industry?      (1.5+1.5)+2+2+1+2=10
5. Write down the synthesis of the following pesticides. (*any five*)      5×2=10  
i) Carbendazim    ii) Captan    iii) Dithane-Z 78    iv) Hinosan    v) Propiconazole  
vi) Carbaryl    vii) Paraquat
6. Discuss briefly different methods of composting. Write a short account on 'waste products of plant and animal origin' used for manuring.      8+2=10
7. Write short notes (*any five*)      5×2=10  
a) Sources of nitrogen and hydrogen for ammonia synthesis.  
b) Factors determining the efficiency of liming materials  
c) Triazine herbicides  
d) Biogas plant  
e) Partially acidulated rock phosphate  
f) Secondary nutrient fertilizers  
g) Characteristics of an Ideal Fungicide  
h) Micronutrient fertilizers
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