

B.Sc. (Ag.) Honours Semester-III Examination, 2014
Course No: SSC-211 (Manures, Fertilizers and Agro-chemicals)
(New Syllabus)

Signature of Centre Superintendent

Roll No. : (in figure) _____ (in words) _____

Student Index No. _____ **Regn. No.** _____ **of** _____

Time : Two Hours

Questions are of value as indicated in the margin

Full marks : 40

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 up the blanks with most appropriate words (any ten) :** 10×0.5=5
- (a) Blitox is formed by the reaction of _____ and _____ with water.
 - (b) Two fundamentals units are required in Diles-Alder reaction i.e., _____ and _____.
 - (c) Endosulfan is prepared by treating _____ with _____.
 - (d) Fluor apatite is a rich source of _____.
 - (e) Calcium is taken up by the plants in the form of _____ ion either from the soil or from the clay complex.
 - (f) The method follows for extraction of P in slightly acid soil is _____.
 - (g) Oxidizable organic carbon in soil is determined by _____ method.
 - (h) _____ is the source of all the plant nutrients in soil.
 - (i) Ammonium sulphate contains _____ % Nitrogen.
 - (j) Phorate is oxidized to _____ and _____ compounds in plants.
2. **Tick (✓) the correct alternatives :** 10×0.5=5
- (i) Which one of the following minerals contains S ?
 - (a) Apatite
 - (b) Gypsum
 - (c) Calcite
 - (d) Chlorite
 - (ii) Which one of the following elements is oxidized by *Thiobacillusthiooxidans*?
 - (a) Sulphur
 - (b) Nitrogen
 - (c) Copper
 - (d) Iron

- (iii) Which one is the most soluble phosphatic compound in soil?
- (a) Monocalcium phosphate
 - (b) Dicalcium phosphate
 - (c) Tricalcium phosphate
 - (d) None of them
- (iv) Single super phosphate is produced by the reaction of rock phosphate with
- (a) HNO_3
 - (b) H_3PO_4
 - (c) H_2SO_4
 - (d) HCl
- (v) Which is the 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, is 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 taken up by the plant and translocated within the plant system is known as
- (a) Contact fungicide
 - (b) Systemic fungicide
 - (c) Fumigants
 - (d) None of these

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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? Draw their structure.
(ii) Write down the properties of Single Super Phosphate fertilizer in respect to Composition, Hygroscopicity and storage capacity.
(iii) What happens when
(a) Calcium carbonate is applied to an acidic soil
(b) Gypsum is applied to alkaline soil
(iv) How adduct is formed in the Diels-Alder Reaction? (1.5+1.5)+3+2+2=10
4. 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?
(c) Sodium benzothiolate condensed with o,o-diisopropyl phosphorochloride?
(d) Methyl amine reacts with CS₂ in presence of HCHO in an acid medium?
(e) Oxidation of phenol with hydrochloric acid in presence of potassium chlorate? (1.5+1.5)+2+2+1+2=10
5. (a) Write down the properties in respect of hygroscopicity and chemical formula of the following fertilizers (any three) (3×2)+(2×2)=10
(i) Ammonium sulphate (ii) Ammonium nitrate (iii) Ammonium sulphate nitrate (iv) Urea
(b) Write down the synthesis of the following pesticides (**any two**)
(i) Carbendazim (ii) Captan (iii) Dithane Z-78 (iv) Hinosan
6. Briefly discuss the role of organic matter. What is composting? Discuss briefly different methods of composting. What are the difference between Indore method and Bangalore methods of composting? 2+1+6+1=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) Quality of rock phosphate for SSP production
(g) Characteristics of Ideal Fungicides
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