M.Sc. (Agriculture) – I

AGRONOMY AND SOIL SCIENCES

General Instructions for Students

Name of Candidate_____ **Roll No.**_____

1. Every candidate should carry his/her valid Roll No. cum Admit Card to the Entrance Test. No candidate without the valid Roll No. cum Admit Card will be allowed to enter the Examination Centre.
2. Please fill in all particulars properly and legibly.
3. The paper will be of Two Hour duration.
4. The question paper will comprise of three parts. Part A will comprise of Twenty five Multiple Choice Type questions of General Agriculture of One mark each. Part B will be of Fifty Multiple Choice Question of Elective of One mark each.
5. Part C will be of Subjective Type Questions.
6. The candidate has to fill in the right option against the question number in the OMR sheet with BLUE/BLACK pen.
7. There will be no negative marking.
8. The OMR and Answer Sheet must be handed over to the Room Supervisor even if candidate has not written anything.
9. No candidate will be allowed to leave the examination hall before Two hours.
10. Do not write/make any identification marks(s)/religious symbols/slogan(s) on the OMR/Answer Sheet.
11. The candidate must ensure that his OMR and Answer Sheet have been duly stamped.
12. Please ensure that you have signed the attendance sheet for the day.
13. Mobile Phones and other electronic gadgets such as Bluetooth etc. are strictly prohibited in the Examination Centre.

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Time: Two Hours **Max Marks: 100**

Multiple Choice Questions

PART-A
General Agriculture (Common for all)

1. Hormones used for inducing lactation in sterile cows is
   (A) Relaxin (B) Estrogen (C) Progasterone (D) Stilbestrol
2. Florigen is produced in the region of
   (A) Leaves (B) Fruits (C) Roots (D) Trunk
3. Sustainable agriculture can be achieved by:
   (A) More resources (B) More Subsidies
   (C) More technological support (D) Better prices of the produce
4. The all-round development of Indian rural people can be achieved by means of
   (A) Extension education (B) Adult extension
   (C) More money distribution (D) All of the above
5. In extension education communication is a
   (A) Process (B) Method (C) Idea (D) Expression of thoughts
6. Black heart of potato is caused by:
   (A) Bacteria (B) Fungi (C) Poor Ventilation in Storage (D) Algae
7. Solar energy treatment of wheat seed is recommended for the control of
   (A) Loose smut (B) Karnal bunt (C) Hill bunt (D) Black rust
8. Ranikhet disease of fowl is spread through
   (A) Bacteria (B) Fungi (C) MLO's (D) Virus
9. Self-incompatibility promotes:
   (A) Autogomy (B) Allogomy (C) Homogeny (D) None
10. Termite, one of the most damaging pest of wheat belong to order
    (A) Neuroptera (B) Thysanoptera (C) Isoptera (D) Diptera
11. Insecta is featured with
    (A) Body divided into three segments (B) Have three pairs of legs
    (C) Pair of Antenna (D) All the above
12. Insecticide act was passed in
    (A) 1986 (B) 1968 (C) 1972 (D) 1962
13. Insect feeding on plant of several Genera within a family are called as
    (A) Phytophagus (B) Polyphagus (C) Oligophagus (D) Monophagus
14. Which bee called as "Rock Bee or Giant Bee?"
    (A) Apis Mellifera (B) Apis dorsata (C) Apis Indica (D) Apis Florea
15. Total geographical area of India
    (A) 320 Mha (B) 329 Mha (C) 339 Mha (D) 359 Mha
16. Cropping Intensity of India
    (A) 126% (B) 130% (C) 136% (D) 142%

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17. A certain part of energy received from the sun, is reflected back to space by the earth known as
(A) Diffused (B) Transitional (C) Albedo (D) El. Nino

18. The science which deals with study of Rocks known as
(A) Pedology (B) Geology (C) Meteorology (D) None of these

19. ..... is the value of next best alternative foregone
(A) Minimum cost (B) Opportunity cost (C) Isoquant (D) Marginal cost

20. The middle value of an ordered array of numbers is the
(A) Mode (B) Mean (C) Median (D) Midpoint

21. Write seed rate of Barseam in kg per hectare
(A) 10 kg (B) 15 kg (C) 20 kg (D) 25 kg

22. Instrument measure solar radiations
(A) Pyreno meter (B) Lux meter (C) Albedometer (D) All of these

23. Spacing of Rice during transplanting is
(A) 15 x 15cm (B) 20 x 20 cm (C) 15 x 20 cm (D) 10 x 15 cm

24. New variety of Barseam is
(A) BL12 (B) BL 22 (C) BL32 (D) BL42

25. Choose the mismatch among the following
(A) Conservation tillage ..... Erosion control
(B) Luxury consumptive by plants ..... Potassium
(C) Ammonium Sulphate ..... Basic fertilizer
(D) Gibberellins ..... Poly cyclic terpenoids

PART-B
Elective
(Agronomy, Soil Science and Agro forestry)

26. 2,4-D Atrazine and PMA at low concentration act as antitranspirant as
(A) Reflectant (B) Film Farming (C) Stamatal closing (D) Growth retardant

27. Excess of Ca causes deficiency of
(A) Nitrogen (B) Potassium (C) Phosphorous (D) Zinc

28. Which herbicide is not prone to photodecomposition?
(A) 2, 4- D Na salt (B) Monusin (C) Trifluraline (D) Chloramben

29. Cypreous rotundus weed belong to ..... family/category
(A) Grass (B) Broad leaf (C) Sedges (D) None of these

30. Which group of herbicide inhibits mitosis?
(A) Uracil (B) Phenoxy (C) Thio carbonate (D) All the three

31. Which herbicide is most prone to valatilization losses?
(A) Topic (B) 2, 4-D (C) Butachlore (D) Trifluraline

32. In Mechanical analysis, dispersion of soil particles is achieved by shaking the soil with
(A) Na_2Co_3 (IN) (B) Na_2So_4 (IN) (C) NaOH (IN) (D) Nacl (IN)

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33. The most important cementing agent in laterite soil is .....
(A) Organic matter (B) $CaCo_3$ (C) Hydrous oxide of Fe and Al (D) Clay particles

34. The most desirable type of soil structure for field crops is
(A) Plate like (B) Block like (C) Prism like (D) Spheroidal

35. Bulk density of a soil clod whose weight is 100 gm and volume is 75 cm^3 is ....
(A) 1.30 g/cm^3 (B) 1.35 g/cm^3 (C) 1.40 g/cm^3 (C) None of these

36. Different forms of soil consistency were suggested by
(A) E.W Russel (B) L-D Bowes (C) A. Atterby (D) N.C. Brady

37. Neutron moisture probe estimates moisture in soil by detecting molecules of
(A) Water (B) Oxygen (C) Hydrogen (D) Carbon

38. The surface of soil of a waterlogged puddled paddy field usually have
(A) Massive type structure (B) No structure
(C) Crumby structure (D) Granular structure

39. Khaira disease of rice is caused by .....
(A) Bacteria (B) Zinc deficiency (C) Virus (D) Fungus

40. NH_4^+ fixation takes place in .....
(A) Vermiculite and illite (B) Montmosillonte
(C) Chloritc and Kaolinite (D) None of these

41. Pedology- concept and application was written by
(A) D.K. Das (B) J.L. Sehgil (C) V.N. Sahai (D) N.C. brady

42. The cationic micronutrient react with certain organic molecules to form organometallic complexes called.....
(A) Chitins (B) Catinas (C) Cherngens (D) Chelates

43. To apply 23 kg Nitrogen and 23kg P_2O5 through urea (46% N) and DAP (18% N and 46% P_2O5) we need
(A) 50 kg urea and 50 kg DAP (B) 30 kg urea and 50 kg DAP
(C) 30 kg urea and 30 kg DAP (D) 50 kg urea and 30 kg DAP

44. Very poor infiltration due to adverse soil physical properties is found in
(A) Acid soils (B) Saline soils (C) Saline alkali soils (D) Alkali soils

45. Father of soil microbiology is .....
(A) Leeuwenhook (B) Winagrasky (C) Beizirinck (D) Louis Pasteur

46. Which of the following is not related with plant growth/plant nutrients
(A) Mitscherlich law of Diminishing return (B) Liebij law of minimum
(C) Stokes law (D) Spillman's equation

47. To prepare 500 ml of 2N NaoH solution, the salt required is
(A) 400g (B) 40g (C) 4g (D) 0.4gm

48. Dispersion ratio is a criterion to evaluate
(A) Erodibility of soil (B) Infiltration rate of soil
(C) Bulk density of soil (D) Particle density of soil

49. Which soil colour chart are used to study colour as morphological charactertics of soil
(A) Milne (B) Marbut (C) Munsell (D) Dimarscony

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50. Non symbiotic nitrogen fixation capacity is of
(A) Clostridium (B) Rhodospollium (C) Azotobactor (D) All of these

51. Maximum area of Aromatic crops in India is under
(A) Mentha (B) Lemongrass (C) Palmasosa (D) Geranium

52. Plantago ovate is an example of
(A) Spice crop (B) Aromatic crop (C) Plantation crop (D) Medicinal crop

53. Which state is leading in Turmeric cultivation in India?
(A) Andhra Pradesh (B) Utter Pradesh (C) Punjab (D) Madhya Pradesh

54. The practice of brown manuring is followed in
(A) Rice (B) Wheat (C) Potato (D) Sugarcane

55. ..... Combination require 100 percent population of component crops
(A) Sorghum + red gram (B) Toria + Gobhi Sarson
(C) Both (A) and (B) (D) None of these

56. In the intercrop system total nitrogen requirement is ..... than sale base crop.
(A) 25% more (B) 50% more (C) 75% more (D) No difference

57. Land equivalent ratio (LER) is ..... when yield of groundnut in groundnut + red gram intercrop system is 1200 kg and red gram is 500 kg and their yield in pure stand is 1500 and 1000 kg respectively.
(A) 1.60 (B) 1.30 (C) 1.90 (D) 1.15

58. Relative yield total (RYT) is_____ when wheat and mustard yield in intercrop was 10Qt and 4 Qt respectively compared to 18 Qt and 6 Qt in sale/ pure stand respectively.
(A) 1.16 (B) 1.06 (C) 1.26 (D) 1.36

59. Luxary consumption by plants is usually of _____ element
(A) Potassium (B) Sulphur (C) Phosphorous (D) Nitrogen

60. Alley cropping for arable lands is also known as_____
(A. Shifting Cultivation (B) Hedge row intercropping
(C) Agroforestry (D) Silvipastural System

61. Central Research institute of Dry land Agriculture is in
(A) Pune (B) Hyderabad (C) Patna (D) Junagarh

62. When rainfall is less than 75cm per annum in rain fed area, which cropping system should be followed
(A) Mono Cropping (B) Intercropping (C) Multiple Cropping (D) Intensive Cropping

63. In India, research work on agroforestry was started by
(A) Indian Grass Land institute, Jhansi
(B) Central Soil and Water Conservation Research Institute, Dehradun
(C) Central Arid Zone – Jodhpur
(D) All of the above

64. Which plant species are recommended for Saline Soils?
(A) Atriplex, prosopis (B) Tesminalia arjuna
(C) Acacia Auriculiformis (D) All of the above.

65. Agro forestry trees for acid soils.
(A) Tamarix (B) Pongamin pinnata (C) Acacia Auriculiformis (D) All of the above.

66. Forest Cover in India is about_____ of geographical are
(A) 10 % (B) 20% (C) 30% (D) 40%

67. Calculate duly of water for rice crop of 120 days having a water requirement of 100 cm.
(A) 1036.8 ha (B) 1236.8 ha (C) 836.8 ha (D) None of these

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68. Cultivation of Berseem instead of wheat control_____
(A) Swank (B) Itsit (C) Gulli Danda (D) Motha

69. Yield of wheat per acre _____ Qt when number of ears per meter square were 400, test wt 40g, grain per ear =50
(A) 3.2 Qt (B) 32 Qt (C) 32 Qt (D) None of these

70. To raise nursery of popular optimum size, length and spraying of cutting should be

	Size (cm)	Length (cm)	Spacing (cmxcm)
(A)	1.5-2.5	10-15	40 x 40
(B)	2.0-3.0	15-20	50 x 50
(C)	2.0-3.0	20-25	60 x 60
(D)	2.0-3.0	20-25	70 x 70

71. Major constraint to direct seeding of rice is
(A) Seedling establishment (B) Water availability
(C) Nitrogen deficiency (D) Micronutrient deficiency

72. Capillary water is that when which present between
(A) 0.33 - 31 Atm (B) 0.33- 15 Atm (C) 0.33-1Atm (D) None of these

73. Lysimeter is used to measure .....
(A) Solar radiation (B) Evaporation water loss
(C) Evapo transpiration waterless (D) Leaching

74. Highest seed production capacity is of ..... weed plant.
(A) Amaran thus (B) Chenopodium album (C) Phylarous minor (D) Trianthema

75. If the bulk density of soil is 1.6 g/cc and moisture content is 20%. The moisture would be
(A) 16cm/metre (B) 32cm/metre (C) 8cm/metre (D) None of these

PART C
Subjective Type Questions

Note : Attempt all questions. Each question carries FIVE marks.

1. Differentiate dry, dry land and rain fed farming. Also discuss the means of reducing transpiration losses.
2. Give the brief account on major features of Diagnostic Horizons used in Soil Taxonomy.
3. Briefly explain the constraints in bio fertilizer use.
4. (A) Differentiate mode of action and mechanism of action in herbicides
   (B) Give detail of weed control in Rice nursery.
5. (A) Write about production technology of popular.
   (B) Discuss features of water and nutrient management in intercropping system.

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