Paper – **Agriculture**

PART – I : OBJECTIVE / MCQ

Each question carries 2 marks: (75X2= 150 Marks)

PAPER - I

1. (AxB)XC is
   a. Test cross
   b. Double cross
   c. Three way cross
   d. Top cross

2. …….. the physical methods used for controlling nematodes.
   a. Heat treatment
   b. Radiation
   c. Osmotic pressure
   d. All of the above

3. 'Ascent of cell sap' from root to the tree top is exercised by
   a. Cambium cell
   b. Xylem
   c. Phloem
   d. Cuticle

4. 'Queen' is the variety of
   a. Sapota
   b. Guava
   c. Pine apple
   d. Mango

5. Cause of deterioration of variety is
   a. Mendelian variation
   b. Mutation
   c. Mechanical mixture
   d. All of the above

6. Conversion of nitrate nitrogen to molecular nitrogen is known as
   a. Denitrification
   b. Nitrification
   c. Nitrogen release
   d. None of the above

7. Cytogenetic male sterility is utilized in
   a. Pure line selection
   b. Hybrid seed production
   c. Back cross method
   d. Progeny test

8. Edible banana fruit is seedless because of
   a. Embryo abortion
   b. Absence of stigma
   c. Vegetative parthenocarpy
   d. Stimulated parthenocarpy

9. Genetically the purest seed is
   a. Breeder's seed
   b. Registered seed
   c. Certified seed
   d. Nucleus seed

10. Mendael's laws of inheritance operate during
    a. Mitosis
    b. Meiosis
    c. Gametogenesis
    d. Pollination

11. Pure line may be defined as the progeny of
    a. Any two individuals
    b. A homozygous individual
    c. A self fertilized individual
    d. A homozygous and self-fertilized individual

12. Rock phosphate can be safely used in
    a. Lateritic soil
    b. Alkali soil
    c. Calcarious soil
    d. Acid soil

13. Splitting of pods is caused by
    a. Hydrotropic movement
    b. Hydration movement
    c. Phototropic movement
    d. Photoperiodic movement

14. Solubility of rock phosphate can be improved by
    a. Nitrosomonas
    b. Nitrobacter

c. Azotobacter
d. Bacillus polymexa

15. The electron transport carriers are located in the
    a. Mitochondrial membrane
    b. Granum membrane
    c. Stroma
    d. Thylakoid

16. The initial acceptor of the carbon dioxide molecule is
    a. Ribulosedinucletide
    b. Ribulose1,5 biphosphate
    c. Formaldehyde
    d. Phosphoglycerate

17. Most difficult problem in the production of seed potato is the production of
    a. Good variety
    b. Virus free seed
    c. Cold resistant variety
    d. Fungi resistance seed

18. The photolysis of water takes place in the
    a. Thylakoid
    b. Granum
    c. Stromata
    d. None of the above

19. The pathogen of loose smut of wheat is
    a. Soil borne
    b. Internally seed borne
    c. Both a and b
    d. Not seed borne

20. Which of the following is controlled by gibberellic acid?
    a. Fruit development
    b. Ripening of fruits
    c. Vegetative growth
    d. Prevention of the loss of flowers

21. Which of the following is ethylene absorbent?
    a. $KMnO_4$
    b. KNO_2
    c. K_2SO_4
    d. KCl

22. When a gene hides the effect of a second gene when both are present, it is called as
    a. Modifying action
    b. Epistasis
    c. Inhibiting
    d. Additive dominance

23. When a segment of a chromosome is missing, the condition is known as
    a. Translocation
    b. Inversion
    c. Deletion
    d. Transportation

24. 'V' notch is a
    a. Parshall flume
    b. Orifice set
    c. Weir
    d. Submerged orifice

25. Arrowing refers to
    a. Flower primordial initiation in maize
    b. Flowering of cotton
    c. Flowering of maize
    d. Flowering of sugarcane

26. A weed that spreads Asthma is
    a. Colotropis
    b. Parthenium
    c. Cynodon
    d. Cyperus

27. Application of nitrogen in cowpea at the time of planting is known as
    a. Basal dose
    b. Synergistic dose
    c. Starter dose
    d. Additional dose

28. Black soils are deficient in
    a. Potash
    b. Calcium

c. Nitrogen
d. Lime

29. Broadcast potassium is ..... than banded.
    a. Highly efficient
    b. As efficient as
    c. Less efficient
    d. None of these

30. Dwarfing gene in rice is
    a. Norin- 10
    b. Branchytic-2
    c. Dee-gee-woo-gen
    d. Opaque-21

31. Embryo seed dormancy is mainly found in
    a. Tropical climate seeds
    b. Temperate climate seeds
    c. Sub-tropical seeds
    d. None of these

32. Field water use efficiency is calculated by
    a. WUE=Y/WR
    b. WUE= Y/ET
    c. WUE= Y/CU
    d. None of these

33. High yielding dwarf varieties of wheat was developed by
    a. Dr. B. P. Pal
    b. Dr. N. E. Borlaug
    c. Dr. E. W. Burton
    d. Dr. M. S. Swaminathan

34. If there is 500 kg seed then how much samples should be taken for testing?
    a. 8
    b. 3
    c. 5
    d. 10

35. IFFCO is a
    a. Farmers club organization
    b. Private Fertilizer Company
    c. Farmer's Fertilizer Co-operative
    d. Farmer's Core Society

36. In a predominantly biological system, mineralization of phosphorus from organic matter of crop residues is dependent on soil ..... activity.
    a. Chemical
    b. Physical
    c. Physio-chemical
    d. Biological

37. Maize protein is deficient in
    a. Betadine
    b. Tryptophane and lysine
    c. Lysine
    d. Tryptophane

38. Name a cereal with maximum protein content
    a. Basmati Rice
    b. Maize
    c. Sorghum
    d. Whole wheat

39. Removal of a uniform thin layer of soil by the action of water is referred as
    a. Splash erosion
    b. Sheet erosion
    c. Rill erosion
    d. Gully erosion

40. Seed plot technique of potato is used to produce
    a. Insect free seeds
    b. Nematode free seeds
    c. Virus free seeds
    d. Large size tubers

41. Sesamum belongs to the family
    a. Leguminoseae
    b. Papilionaceae
    c. Pedaliaceae
    d. Chenopodeaceae

42. Maize- potato- wheat- green gram is an example of
    a. Tetra cropping
    b. Multistoried cropping

c. Relay cropping
d. Inter cropping

43. The best green manuring crop is
    a. Napier
    b. Sunhemp
    c. Dhaincha
    d. None of these

44. The first irrigation in wheat is normally recommended at
    a. Tillering stage
    b. Crown root initiation stage
    c. Flowering stage
    d. Seeding stage

45. The major part of nitrogen uptake by the maize is over by the
    a. Knee high stage
    b. Tasselling stage
    c. Silking stage
    d. Grain maturing stage

46. The most critical stage for irrigation in potato is
    a. Root formation
    b. Tuberization
    c. 25% tuber formation
    d. All of these

47. Wheat protein is called as
    a. Lutein
    b. Gluten
    c. Dhurin
    d. Ricin

48. Which of the mulch is best and cheap to minimize wind erosion?
    a. Paper mulch
    b. Straw mulch
    c. Stubble mulch
    d. Saw dust mulch

49. Banana suckers arise from
    a. Underground rhizomes
    b. Underground corms
    c. Stolons
    d. Pseudostems

50. Browning of cauliflower is caused by the deficiency of

a. Potassium
b. Manganese
c. Iron
d. Boron

51. Kinnow is a cross between
a. King and Willow leaf
b. Mandarin and Sweet orange
c. Willow leaf and Wilking
d. King and Queen

52. Spacing between fruit plant is determined on the basis of
a. Choice of planer
b. Spreading behavior of plants
c. Availability of land
d. All of these

53. Which one of the following fruits is cured in smoke for ripening?
a. Mango
b. Guava
c. Jackfruit
d. Banana

54. Which one of the following is not a self incompatible fruit crop?
a. Pear
b. Mango
c. Apple
d. Guava

55. French merogold is
a. Diploid
b. Tetraploid
c. Triploid
d. Aneuploid

56. First 15 cm layer of land which is ploughed for cultivation of crop is called
a. Furrow slice
b. Rhizosphere soil
c. Soil horizon
d. Soil profile

57. Dominant organisms found in a compost pit are
a. Thermophilic
b. Psychrophilic

c. Mesophilic
d. All of these

58. The direct exchange of ions between the roots and clay colloids called
    a. Soil solution theory
    b. Contact exchange theory
    c. Diffusion theory
    d. None of the above

59. Phosphorus is essential for
    a. Cell division
    b. Development of meristematic tissues
    c. Both of these
    d. None of these

60. Hybrid seeds can be produced through open pollination with the use of
    a. Inbreds
    b. Clones
    c. Pure lines
    d. Male fertile lines

61. In C_4 pathway CO_2 combines with
    a. Ribulose monophosphate
    b. Phosphoglyceric acid
    c. Ribulosediphosphate
    d. Phosphoenol pyruvate

62. Wilt disease takes place in
    a. Guava
    b. Papaya
    c. Mango
    d. Ber

63. Diphenyl amine is an indicator which is used in determination of
    a. Organic carbon
    b. Phosphorus
    c. Potassium
    d. Boron

64. Humus colloids are composed basically of
    a. Carbon
    b. NPK
    c. Ozone
    d. Helium

65. The first passage through which nutrients enters into the leaves
    a. Intercuticular passage
    b. Mesophyll tunnel
    c. Cell wall plasmic membrane
    d. None of the above

66. In RNA, nitrogen bases are same as in DNA except
    a. Uracil instead of Thymine
    b. Cytosin instead of Thymine
    c. Adenine instead of Guanine
    d. Thymine instead of Adenine

67. Which is citrus nematode?
    a. Hoplolaimus
    b. Pratylenchus
    c. Rotylenchulus
    d. Tylenchus

68. Taphrina causes the disease
    a. Chillies leaf curl
    b. Tomato leaf curl
    c. Peach leaf curl
    d. Brinjalleaf curl

69. Breeder seed is the progeny of
    a. Foundation seed
    b. Registered seed
    c. Nucleus seed
    d. Certified seed

70. The number of functional plant nutrients are
    a. 26
    b. 20
    c. 16
    d. 10

71. The fruit of linseed is known as
    a. Pod
    b. Canum
    c. Seedball
    d. Knob

72. If a dihybrid is test crossed, the phenotypic ratio of progeny will be

a. 9:3:3:1
b. 9:3:4
c. 1:1:1:1
d. 15:1

73. Golden Acre is a variety of
    a. Cabbage
    b. Radish
    c. Potato
    d. Tomato

74. Which of the following disease is caused by mycoplasma –like – organisms?
    a. Papaya ringspot
    b. Banana bunchy top
    c. Chillileaf curl
    d. Brinjal little leaf

75. Potometer is used to measure.
    a. Rate of respiration
    b. Rate of transpiration
    c. Growth
    d. Rate of ripening

PART – II

Subjective / conventional : Marks: 150

This paper consists of : A - 10 question of 5 marks each.....50 Marks
B - 5 question of 10 marks each.....50 Marks
C - 2 question of 25 marks each.....50 Marks

A. <u>Attempt only 10 questions, each question carries 5 marks.</u>

1. Applications of Remote Sensing in Agriculture.
2. General functions of nitrogen in plant
3. Contrasting features of vertical and horizontal resistance
4. Comparison between Organic and natural farming
5. Comparison between chemical fertilizers and bio-fertilizers
6. Maize based cropping system

7. Advantages of Integrated Farming System.
8. Stages of micro-propagation.
9. Procedure of development of multiline varieties.
10. Asexual reproduction in crop plants.
11. Determination of mode of reproduction.
12. C: N ration on decomposition process of green manure
13. Biological pest management.
14. General functions of potassium in plant nutrition.

B. Attempt only 5 questions, each question carries 10 marks.

1. Package for hybrid seed production in rice with its constraints.
2. Comparison between lowland and upland rice cultures.
3. Ills of green revolution.
4. Decomposition of green manure with special reference to aerobic and anaerobic decomposition.
5. Different kinds of soil problems and their reclamation method.
6. Cross-inoculation groups and *Rhizobium*-legume associations.
7. Role of organic matter in soil fertility.
8. Harnessing vermiculture biotechnology.

C. Attempt only 2 questions, each question carries 25 marks.

1. Objectives, salient achievements, challenges ahead and agencies in plant breeding.
2. Conservation and utilization of plant genetic resources.
3. Integration of subsystem in Farming system and Integrated Farming System under different situations.
4. Package of production practices of irrigated and rainfed wheat with special reference to tillage, seed and seedling, irrigation schedules, nutrient management, weed management, harvesting and yield.