

**M.Sc. (Agriculture) – I**  
**HORTICULTURE**  
**(Fruit Science and Vegetable Science)**

**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.

## 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) Progesterone (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) Autogamy (B) Allogamy (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%
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

#### (Fruit Science and Vegetable Science)

26. Type of incompatibility in Mango is:  
 (A) Sporophytic (B) Gametophytic (C) None (D) Both (A) and (B)
27. Which one of the following crops is best suited as intercrop in banana?  
 (A) Papaya (B) Persimmon (C) Ginger (D) Plum
28. Which one of the following is a mono-embryonic citrus?  
 (A) Sweet Orange (B) Acid lime (C) Mandarin (D) Pummelo
29. The recommended storage temperature to extend the shelf life of banana is  
 (A) 10<sup>0</sup>-12<sup>0</sup>C (B) 12<sup>0</sup>-14<sup>0</sup>C (C) 15<sup>0</sup>-16<sup>0</sup>C (D) 8<sup>0</sup>-10<sup>0</sup>C
30. Panama disease of banana is prevented by  
 (A) Spraying copper fungicide (B) Spraying Zinc carrier  
 (C) Application of lime to the soil (D) Providing adequate irrigation.
31. The most commonly used method of breeding in unexploited fruit crop is  
 (A) Clonal selection (B) Mutation breeding  
 (C) Hybridization (D) Polyploidy breeding
32. Incidence of heavy premature fruit drop in mango occurs because of  
 (A) Sooty mould (B) Anthrac nose (C) Leaf blight (D) Powdery mildew
33. Which fruit earns highest foreign exchange?  
 (A) Mango (B) Apple (C) Chestnut (D) Walnut

34. The most suitable C/N ratio for the growth and fruiting is concerned  
 (A) CCC/NN (B) CCC/N (C) C/NNN (D) CC/NNN
35. Calyx end rot is a disorder due to deficiency of calcium and is observed in  
 (A) Pecan (B) Apple (C) Guava (D) Persimmon
36. The type of fruit of coffee is  
 (A) Aggregate of berry (B) Berry (C) Drupe (D) None
37. The optimum temperature for growing tea is  
 (A) 15<sup>0</sup>-22<sup>0</sup>C (B) 20<sup>0</sup>-27<sup>0</sup>C (C) 28<sup>0</sup>-35<sup>0</sup>C (D) 32<sup>0</sup>-40<sup>0</sup>C
38. Seeds of which crop lost their viability if exposed to hot sun:  
 (A) Guava (B) Muskmelon (C) Citrus (D) Ridge gourd
39. American grape varieties are resistant to  
 (A) Phylloxera (B) Powdery mildew (C) Chinch bug (D) Woolly aphid
40. 'Dashehari' Mango is planted at a distance of 10 m, but 'Amarpali' is planted at a distance of  
 (A) 2.8 m (B) 3.8 m (C) 3.5 m (D) 4.0 m
41. Which of following fruits is available in the market for least period.  
 (A) Pineapple (B) Litchi (C) Mosambi (D) Papaya
42. National Horticulture Board (NHB) was established in  
 (A) 1984 (B) 1985 (C) 1986 (D) 1987
43. Fruit of Aegle marmelos is botanically  
 (A) Hard shelled berry (B) Drupe (C) Hesperidium (D) Stone
44. A dwarf rootstock of apple is  
 (A) M13 (B) M12 (C) M9 (D) M25
45. St. George is a rootstock of ..... and resistant to .....  
 (A) Grape, Powdery mildew (B) Grape, Wilt  
 (C) Grape, Phylloxera pest (D) Guava, Anthracnose
46. 'Surinam Cherry' is used as rootstock for  
 (A) Sweet Cherry (B) Sour Cherry (C) Longan (D) Jamun
47. Chloride containing fertilizers are toxic to which fruit crop  
 (A) Citrus (B) Cashew (C) Mango (D) Banana
48. Which variety of grape is a hybrid between vinifera and labrusca  
 (A) Perlette (B) Bangalore Blue (C) Arkavati (D) Pusa Seedless
49. Recommended spacing for Pusa Nanha  
 (A) 1 x 1 m<sup>2</sup> (B) 2 x 2 m<sup>2</sup> (C) 1.5 x 1.5 m<sup>2</sup> (D) 1.25 x 1.25 m<sup>2</sup>
50. Gynodioecious variety of Papaya is  
 (A) Pusa Dwarf (B) Pusa Nanha (C) Pusa Majesty (D) All of the above
51. Sharad seedless is the clonal selection from which variety of grape  
 (A) Anab-e-Shahi (B) Thompson Seedless (C) Cheema Sahebi (D) Kishmish Charni
52. Yellow heart is the variety of  
 (A) Loquat (B) Bread fruit (C) Almond (D) Apple
53. 'Bodless Altofort' a tetraploid banana is a result of controlled crossing between  
 (A) Gros Michel and Pisiang Lilin (B) Gros Michel and Ney Poovan  
 (C) Gros Michel and Kadali (D) None of the above

54. The micronutrient essential for the synthesis of auxin is  
 (A) Cu (B) Zn (C) Mn (D) Mo
55. Glycolysis take place in  
 (A) Chloroplast (B) Cytoplasm (C) Nucleus (D) None of above
56. Round hand type of cabbage cultivar are of which maturity type  
 (A) Early (B) Mid (C) Late (D) None of these
57. Whiptail in cauliflower is caused by  
 (A) Excess of boron (B) Deficiency of boron  
 (C) Excess of molybdenum (D) Deficiency of molybdenum
58. The most common sex expression in cucurbit is  
 (A) Dioecism (B) Monoecism (C) Androdioecism (D) None of these
59. Pusa Barsati is the variety of  
 (A) French beans (B) Cowpea (C) Pea (D) None of these
60. The pigment present in water melon is  
 (A) Carotenoid (B) Anthocyanin (C) Lycopene (D) Both (B) and (C)
61. Optimum night temperature for fruit set in tomato  
 (A) 8°C (B) 13°C (C) 17°C (D) 21°C
62. According to ISI tomato has been graded into  
 (A) 4 grades (B) 3 grades (C) 2 grades (D) 1 grade
63. Heterostyly condition is observed in  
 (A) Tomato (B) Brinjal (C) Potato (D) Chilli
64. The optimum temperature for seed germination in case of pea is  
 (A) 10°C (B) 14°C (C) 18°C (D) 22°C
65. Little leaf disease of brinjal is spread by  
 (A) Aphid (B) Leaf hopper (C) White fly (D) None of these
66. Spinach produces seed stalks in about  
 (A) 45 days (B) 55 days (C) 65 days (D) 75 days
67. Sprouting of onion can be checked in storage by the application of MH-40 @  
 (A) 2500 ppm (B) 2000 ppm (C) 1500 ppm (D) 1000 ppm
68. For longer storage of cucumber fruits the temperature should be kept at  
 (A) 5°C (B) 10°C (C) 15°C (D) None of these
69. Anthracnose in Cowpea is transmitted through  
 (A) Seed (B) Insect (C) Soil (D) None of these
70. *Paurus nobilis* (Bay leaf) belongs to family  
 (A) Lauraceae (B) Labiatae (C) Legumonasae (D) Moringaceae
71. Which of following crops has the highest respiration rate  
 (A) Brocoli (B) Cabbage (C) Onion (D) Leek
72. Edible part of most of the summer season vegetable crops is  
 (A) Stem (B) Leaf (C) Root (D) Fruit
73. Type of self-incompatibility observed in cole crops is  
 (A) Sporophytic (B) Gametophytic (C) Both (A) and (B) (D) None of these

74. Toughening effect of canned beans is due to  
 (A) Fe (B) Cu (C) Ca (D) Tannin
75. Processing temperature for canning of vegetables is  
 (A) 80<sup>0</sup>-85<sup>0</sup>C (B) 100<sup>0</sup>-115<sup>0</sup>C (C) 110<sup>0</sup>-115<sup>0</sup>C (D) 115<sup>0</sup>-121<sup>0</sup>C

**PART C**  
**Subjective Type Questions**

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

1. What is the principle of budding? Also discuss the various stages which take place while successful bud union
2. What are the factors responsible for the unfruitfulness in fruit crops?
3. Which criteria is used to select the breeding method for particular vegetable crops. Discuss along with suitable examples.
4. (a) How a farmer can enhance the crop productivity.  
 (b) Why soil sterilization is needed. Discuss it.
5. (a) Fill in the blanks:
  - i) Fruit of strawberry is called as .....
  - ii) ..... is a serious pest of chiku
  - iii) Callistemon lenceolatus makes a ..... growth.
  - iv) Little leaf of a brinjal is transmitted through .....
  - v) Arka Navneet is a hybrid variety of .....
- (b) True/ False
  - i) Candytuft is a shade tolerant annual
  - ii) Whiptail in cauliflower occurs due to Boron deficiency
  - iii) Colour development in tomato occurs due to accumulation of Iron.
  - iv) Winter banana is a variety of diploid banana
  - v) The lightest form of pruning in tea is called as skiffing.