

**MIZORAM PUBLIC SERVICE COMMISSION**  
**COMPETITIVE EXAMINATIONS FOR RECRUITMENT TO THE POST OF**  
**JR. GRADE OF MIZORAM HORTICULTURE SERVICE**  
**UNDER HORTICULTURE DEPARTMENT,**  
**GOVERNMENT OF MIZORAM. OCTOBER, 2023**

**TECHNICAL SUBJECT PAPER-I**

Time Allowed : 2 hours

Full Marks : 200

*All questions carry equal mark of 2 each.*  
*Attempt all questions.*

1. As per the agroclimatic zones of India recognized by ICAR, the hill regions of NE falls under the
  - (a) Humid Western Himalayan region
  - (b) Humid Bengal-Assam region
  - (c) Humid Eastern Himalayan region
  - (d) Sub-humid to humid eastern and south-eastern islands
2. This system of orchard planting is same as the square system, but additional/filler tree is planted at the center of each square.
  - (a) Rectangular system
  - (b) Triangular system
  - (c) Hexagonal system
  - (d) Diagonal system
3. This system of orchard planting accomodates 15% more trees compared to the square system
  - (a) Hexagonal system
  - (b) Diagonal system
  - (c) Triangular system
  - (d) Rectangular system
4. Which of the following is the primary objective for High Density Planting?
  - (a) To increase production of newly developed varieties
  - (b) To obtain maximum yield in a year
  - (c) To develop maximum bearing surface in minimum time and space
  - (d) To have maximum utilization of water resources
5. Compactly planted orchard results in
  - (a) Increased photosynthesis
  - (b) Reduced photosynthesis
  - (c) Photosynthesis remains the same
  - (d) More vegetative growth
6. Orchard training in which Tree limbs or branches are allowed to grow in opposite directions, and the shoots will retain imposed shapes when lignification sets in, is the case of
  - (a) Cordon system
  - (b) Tatura trellis
  - (c) Pyramid orchard
  - (d) Hedgerow system
7. The type of tree pruning in which the terminal part of the shoot is removed to the desired level, and encourages development of secondary branches, is
  - (a) Thinning out
  - (b) Heading back
  - (c) Dehorning
  - (d) Pollarding

8. Tree pruning in which the lower branches in the crown are removed, to allow more light is known as  
(a) Crown lifting (b) Crown Thinning  
(c) Crown reduction (d) Pollarding
9. In the process of training and pruning, one should not remove more than \_\_\_\_\_ live foliage from the tree at once.  
(a) 15% (b) 30%  
(c) 45% (d) 50%
10. This phase of growth is restricted to apical meristem of root and stem  
(a) formative phase (b) elongation phase  
(c) maturation phase (d) tissue differentiation
11. Which of the following statement is true?  
(a) mature branchroot easily as compared to juvenile branches  
(b) juvenile branches root easily as compared to mature branch  
(c) juvenile branches do not root at all  
(d) mature branches do not root at all
12. The transition of vegetative buds to flower buds is  
(a) Reversible (b) Irreversible  
(c) Reversible under favourable environment (d) Reversible only in certain species
13. This case leads to lessened vegetative growth but abundant flowering and fruiting.  
(a) High C/N ratio (b) Low C/N ratio  
(c) Very high C/N ratio (d) Very low C/N ratio
14. Which of the following is true for short day plants?  
(a) The length of day effects flowering regardless of the dark period  
(b) Flowering continues even if a very weak intensity of light is given to the plant for some time during dark period.  
(c) They require relatively long period of uninterrupted light for flowering,  
(d) Flowering is suppressed, if the dark period is interrupted midway by even a single flush of light.
15. Vernalization is the promotive effect of \_\_\_\_\_ on flowering.  
(a) High temperature (b) Low temperature  
(c) Light intensity (d) Daylength
16. The effect of vernalization in horticulture crops is  
(a) Reversible (b) Irreversible  
(c) Reversible only in certain species (d) Irreversible if exposed to chilling
17. Leaf area index is the ratio of leaf area to that of the \_\_\_\_\_.  
(a) plant height (b) total dry matter accumulation  
(c) soil area it occupies (d) total leaf weight
18. The most important factor for fruit set to occur, among the following, is  
(a) receptivity of the ovary (b) presence of gibberellins  
(c) sufficient pollination by bees (d) favourable environmental conditions

19. This hormone is known for its anti-ageing effects in plants.
- (a) Auxin (b) Gibberellins  
(c) Cytokinin (d) Ethylene
20. The only gaseous hormone that plays an important role in ripening of fruits is
- (a) ABA (b) Cytokinin  
(c) Gibberellins (d) Ethylene
21. This plant hormone plays an important role in root formation, apical dominance, tropism and senescence.
- (a) Auxin (b) Gibberellins  
(c) ABA (d) Cytokinins
22. Which of the following factors is responsible for textural change in fruits during ripening?
- (a) chlorophyll degradation  
(b) conversion of starch to sugar  
(c) breakdown of insoluble protopectin to soluble pectin  
(d) decrease in organic acids
23. Which of the following fruits is non-climacteric?
- (a) Banana (b) Pineapple  
(c) Mango (d) Kiwifruit
24. Fruit drop consisting of shrivelled floral organs, male flowers, abnormal flower and small pin head like fruits below 4mm in diameter, is categorised as
- (a) pin head drop (b) post setting drop  
(c) summer drop (d) pre-mature fruit drop
25. Only a proportion of radiation incident on the plant canopy is used to carry out photosynthesis. The photosynthetically active radiation ranges between
- (a) 300 - 500 nm (b) 400 - 700 nm  
(c) 600 - 800 nm (d) above 800 nm
26. Bearing habit in case of jackfruit is
- (a) terminal (b) axillary  
(c) lateral (d) adventitious
27. Growth occurs in a region of growing points called \_\_\_\_\_.
- (a) Lamella (b) Axillary buds  
(c) Meristem (d) Plumule
28. High density planting of fruit trees are successful with fruits such as \_\_\_\_\_.
- (a) citrus (b) papaya and banana  
(c) avocado and ber (d) dragon fruit
29. Which of the following is a characteristic for climacteric fruits?
- (a) Harvested mature and ripened  
(b) Fruits cannot be ripened artificially  
(c) Ethylene levels remains constant  
(d) Ripening is accompanied by a rapid rise in respiration rate till it reaches respiratory peak

30. Organic farming avoids or largely exclude the use of
- (a) off-farm organic waste
  - (b) crop rotation
  - (c) biofertilizers
  - (d) synthetic inputs
31. The scientific name of Tiger worm is
- (a) *Eisenia fetida*
  - (b) *Euedrilus eugeniae*
  - (c) *Eisenia andrei*
  - (d) *Lumbricus rubellus*
32. Which of the following is commonly used for green leaf manuring?
- (a) *Amorphophallus companulatus*
  - (b) *Azadirachta indica*
  - (c) *Murraya koenigii* Linn. Sprengal
  - (d) *Mentha virides*
33. Which of the following is essential for composting of worms in vermicompost preparation?
- (a) A good intensity of light
  - (b) Day temperature between 30 - 35°C
  - (c) Adequate aeration and adequate moisture above 50%
  - (d) Green manure crops for their food source
34. This biopesticide can control lepidopteran insects of cultivated crops like potato, cabbage, etc.
- (a) Nuclear Polyhedrosis virus
  - (b) *Trichoderma viridae*
  - (c) *Trichoderma harziarum*
  - (d) *Cryptolaemus montrouzieri*
35. These organic manures are relatively slow acting and supply available nitrogen for longer period.
- (a) Green manures
  - (b) Concentrated organic manures
  - (c) Farmyard manures
  - (d) Goat manures
36. Castor oil smeared yellow colour empty tins or plates are kept in the field and \_\_\_\_\_ get trapped on these sticky traps.
- (a) Termites
  - (b) White flies
  - (c) Ants
  - (d) Army worms
37. These are example of bulky organic manure.
- (a) Fish manure and raw bone meal
  - (b) Neem cake and sheep manure
  - (c) FYM and green manure
  - (d) Poultry manure and groundnut cake
38. Scientific name of purple passion fruit is \_\_\_\_\_.
- (a) *Passiflora quadrangularis*
  - (b) *Passiflora ligularis*
  - (c) *Passiflora edulis* Sims.
  - (d) *Passiflora flavicarpa*
39. \_\_\_\_\_ is a cracking resistant litchi variety.
- (a) Ajghauli
  - (b) Gandaki Sampada
  - (c) Dehradun
  - (d) Shahi
40. \_\_\_\_\_ variety of papaya is rich in papain.
- (a) Pusa Delicious
  - (b) Pusa Majesty
  - (c) Pusa Giant
  - (d) Pusa Nanha
41. Papaya is very much sensitive to
- (a) Frost and water stagnation
  - (b) Dry warm climate
  - (c) Excessive sunlight
  - (d) Sandy loam soil

42. This is an ultra dwarf apple rootstock.  
(a) M-27 (b) M-106  
(c) M-9 (d) M-125
43. \_\_\_\_\_ is a wine grape variety of India.  
(a) Thompson seedless (b) Manjri Naveen  
(c) Flame seedless (d) Bangalore blue
44. Custard apple belongs to the botanical family \_\_\_\_\_.  
(a) Rosaceae (b) Annonaceae  
(c) Myrtaceae (d) Punicaceae
45. Durian is believed to have originated from \_\_\_\_\_.  
(a) Southern China (b) Borneo island  
(c) Brazil (d) Guatemala
46. Nuts and stone fruits are mostly grown in the  
(a) Temperate region (b) Tropical region  
(c) Coastal region (d) Arid region
47. Fruits with yellowish pulp such a mango, papaya, jackfruits, etc are rich sources of  
(a) Vitamin 'A' (b) Vitamin 'B'  
(c) Vitamin 'C' (d) Vitamin 'D'
48. Tree size control can be achieved by using  
(a) TIBA (b) GA<sub>3</sub>  
(c) 2,4-D (d) IBA
49. In mango, the ratio of fruit set from flower is  
(a) 1 : 500 (b) 1 : 800  
(c) 1 : 1500 (d) 1 : 2500
50. The variety of mango seriously affected by spongy tissue is  
(a) Neelum (b) Dashehari  
(c) Amrapalli (d) Alphonso
51. A physiological problem of citrus especially under North Indian conditions, where the affected juice sacs become hard and dry, fruits become grey in colour, enlarged in size, have flat and insipid taste.  
(a) Boron deficiency (b) Granulation  
(c) Black tip (d) Kottavazhai
52. This pest of banana is a vector of bunchy top disease.  
(a) Rhizome weevil (b) Castor hairy caterpillar  
(c) Hard scale (d) Banana aphid
53. Causal organism of Apple scab is  
(a) Venturia inaequalis (b) Podosphaera leucotricha  
(c) Erwinia amylovora (d) Penicillium expansum
54. In kiwi fruit cultivation, one male is planted for every \_\_\_\_\_ female plants for pollination.  
(a) three (b) five  
(c) nine (d) fifteen

55. Immature coconut fruits for tender nut purpose are harvested at  
(a) 5 – 6 months old (b) 7 - 8 months old  
(c) 10 – 12 months old (d) 15 – 18 months old
56. Economic parts of tea plant which are harvested-  
(a) Young leaves and leaf buds (b) Mature leaves  
(c) Stem (d) Bark
57. Which of the following is not a variety of arecanut?  
(a) Mangala (b) Sumangla  
(c) Kaddu (d) Mohitnagar
58. Lodging of cane in sugarcane occurs if rainfall is  
(a) As low as 500 mm (b) Below 1000 mm  
(c) Between 1100- 1500 mm (d) Above 1500 mm
59. Which of the following is a widely cultivated coffee species?  
(a) *Coffea arabica* (b) *Coffea robusta*  
(c) *Coffea charrieriana* (d) *Coffea stenophylla*
60. Cashewnut processing is done in which order?  
(a) Grading - Sweating - Roasting – Shelling – Peeling – Packing  
(b) Roasting – Shelling – Peeling – Sweating – Grading - Packing  
(c) Roasting – Sweating – Grading - Shelling – Peeling – Packing  
(d) Peeling – Sweating – Grading - Roasting – Shelling – Packing
61. In Rubber cultivation, the yield steeply increases year by year, reaching a peak after \_\_\_\_\_ of planting.  
(a) 8 years (b) 10 years  
(c) 14 years (d) 20 years
62. The oilpalm variety having kernels with thick shell is  
(a) Dura (b) Tenera  
(c) Pisifera (d) Srimangala
63. Major coconut producing state in India include  
(a) Rajasthan (b) Orissa  
(c) Bihar (d) Haryana
64. Which among the following is a pre-disposing factor for damping-off in nurseries?  
(a) insufficient watering (b) water logging and poor drainage  
(c) faulty nutrient application (d) poor soil aeration
65. Chilling or low temperature requirement is the major cause of seed dormancy in the case of  
(a) apple, rose, peach (b) leguminaceae, solanaceae, malvaceae  
(c) cocklebur and many grasses (d) papaya and banana
66. Which of the following is known to inhibit seed germination?  
(a) Cytokinin (b) Auxin  
(c) Gibberellic acid (d) Abscisic acid

67. This is commonly found in commercial rooting compounds, and works by being converted to IAA by the plant.
- (a) IBA (b) NAA  
(c) 2,4-D (d) Cytokinin
68. Polyembryony is common in
- (a) Papaya (b) Mango  
(c) Banana (d) Citrus
69. Apomixis is a type of reproduction where sexual organs take part and seeds are formed
- (a) With union of gametes (b) Without union of gametes  
(c) By normal fertilization (d) Through clonal selection
70. In polyembryo, more than one embryo occurred in the seed in which
- (a) All the embryos are sexual embryos  
(b) All the embryos are vegetative embryos  
(c) Most embryos are vegetative, only one is sexual embryo  
(d) Vegetative and sexual embryos are about the same number
71. Which of the following is not true for sexually propagated plants?
- (a) They have long juvenile period  
(b) Plants produced are hardy and have strong root system  
(c) Hybridization work depends upon it  
(d) Multiple clones can be produced through it
72. Most species require \_\_\_\_\_ for germination.
- (a) Light (b) Oxygen  
(c) Low temperature treatment (d) Fertilizer
73. The most commonly used acid for seed scarification purpose is
- (a) Sulfuric acid (b) Acetic acid  
(c) Oxalic acid (d) Citric acid
74. A plant is said to be a chimera when \_\_\_\_\_ are found growing adjacent in the tissues of that plant.
- (a) Different pigments (b) Various forms of tissues  
(c) Cells of more than one genotype (d) Chlorophyll and carotenoids
75. Which of the following is not true for graft hybrids?
- (a) They originate at the graft union  
(b) The seeds of graft hybrids will give rise to hybrid offspring  
(c) Genetics of the plant remains unaltered  
(d) It sometimes occur naturally
76. Rhizomes are modified underground
- (a) Stem (b) Root  
(c) Leaf (d) Bulbs

77. In \_\_\_\_\_, a mutually compatible interstock overcomes the incompatibility of the scion and rootstock.
- (a) translocated incompatibility (b) localized incompatibility  
(c) delayed incompatibility (d) pathogen induced incompatibility
78. Which among the following, is known to have greatest effect on root formation in cuttings?
- (a) Auxins (b) Cytokinins  
(c) Gibberellins (d) Abscisic acids
79. Root initiation process in cuttings is usually favoured by this condition, and hence should be maintained in the stock plants before taking cuttings from them.
- (a) High nitrogen and low carbohydrate (b) Low nitrogen and high carbohydrate  
(c) Equal ratio of nitrogen and carbohydrate (d) Abundant minerals and vitamins
80. Which among the following, will root quickly?
- (a) Softwood cutting (b) Hardwood cutting  
(c) Semi-hardwood cutting (d) Hardwood under mist chamber
81. Which of the following does not apply in selection of elite mother trees?
- (a) It should be sourced from consistently high yield mother plant  
(b) It should be free from major pest and disease  
(c) Choose a plant that appear rather short & bushy  
(d) Choose a plant that appear rather tall and skinny
82. The scion wood in this condition is not usable as a source of scion
- (a) Hardwood (b) Semi-hardwood  
(c) Softwood (d) 1-2 years old wood
83. In a stock and scion relationship, there occurs more cases of the effect of
- (a) Scion on the stock plants (b) Stock on the scion cultivars  
(c) They never effect each other (d) Environmental effects on scion
84. Which of the following types describe water as a resource?
- (a) Capital resource (b) Biotic resource  
(c) Non-renewable resources (d) Cyclic resource
85. Which of the following figures in cubic kilometres correctly shows the total annual precipitation in India?
- (a) 2000 (b) 3000  
(c) 4000 (d) 5000
86. The highest proportion of the total water used in the country is in which of the following sectors?
- (a) Irrigation (b) Industry  
(c) Domestic use (d) Aquaculture
87. The water requirement for banana crop as per National Horticulture Board is
- (a) 800 - 1000 mm per annum (b) 1800 - 2000 mm per annum  
(c) 2500 - 3000 mm per annum (d) 3400 - 3800 mm per annum
88. In potato cultivation, the critical growth period in which it is most sensitive to water stress, is
- (a) Tillering (b) Flowering  
(c) Early tuber development (d) Tuber maturation



89. Which of the following is not a method for irrigation scheduling?  
(a) Soil indicator (b) Plant indices  
(c) Climatological (d) Groundwater potential
90. The most suitable method for irrigation in hilly terraces is  
(a) Rainfed irrigation (b) Furrow irrigation  
(c) Border irrigation (d) Basin irrigation
91. In \_\_\_\_\_ irrigation, water moves over and across the land by simple gravity.  
(a) Drip (b) Surface  
(c) Manual (d) Sub-surface
92. In a bee colony, the difference between workers and queens is the quality and quantity of  
(a) honey produced (b) the larval diet  
(c) pollen collected (d) royal jelly
93. A small colony of bees with a queen is called the \_\_\_\_\_.  
(a) breeder colony (b) nucleus or nuc colony  
(c) drone brood (d) miller cage
94. In beekeeping, the 'brood' does not consists of  
(a) eggs (b) larvae  
(c) pupae (d) mature worker bees
95. The \_\_\_\_\_ is a part of inside furniture of the hive, made up of four strips of wood fastened at the corner to hold the combs.  
(a) Frames (b) Foundation mill  
(c) Bee box (d) Queen gate
96. For this purpose, a small colony of bees is required, but must not contain eggs and young larvae, and a queenless colony is selected.  
(a) Finishing colony (b) Breeder colony  
(c) Starter colony (d) Nucleus colony
97. The American foulbrood disease is bees caused by  
(a) Bacillus larvae (b) Streptococcus pluton  
(c) Ascospaera apis (d) Aspergillus sp.
98. This type of honey is also known as 'forest honey' as the honeybees collect sap droplets left on the trees by sugar/sac sucking insects.  
(a) nectar honey (b) honey-dew honey  
(c) toxic honey (d) comb honey
99. Beeswax is obtained by melting the  
(a) royal jelly (b) pollens  
(c) honey combs (d) venom
100. The Indian bee which is a good pollinator and honey producer, is  
(a) Apis peroni (b) Apis cerana indica  
(c) Apis mellifera mellifera (d) Apis laborosia