

# MIZORAM PUBLIC SERVICE COMMISSION

## TECHNICAL COMPETITIVE EXAMINATIONS FOR RECRUITMENT TO THE POST OF GRADE-V OF MIZORAM HORTICULTURE SERVICE UNDER GOVERNMENT OF MIZORAM. MAY, 2014

### TECHNICAL SUBJECT PAPER – I

Time Allowed : 2 hours

Full Marks : 200

*All questions carry equal marks of 2 each.*

*Attempt all questions.*

- Which of the following is a function of Gibberellic acid ( $GA_3$ )?
  - Stimulates stem elongation by cell division and elongation
  - Stimulates bolting/flowering in response to long days
  - Breaks seed dormancy which require light or stratification to induce germination
  - All of these
- Which of the following soil type is not suitable for horticultural crops?
  - Porous, well aerated and rich in organic matter
  - Uniform textured with high water holding capacity
  - Saline and saline sodic soils
  - Water table 4m below the surface
- On the basis of photoperiod, tomato and brinjal are examples of
  - Short day plant
  - Long day plant
  - Day neutral plant
  - None of these
- A close-planting system for tree fruits, in which trees are trained to form a 'V' shaped canopy, is called
  - Fruit bush system
  - Tatura trellis
  - Open centre
  - Central leader
- The system of orchard layout, where plants are planted as in square system and the 5<sup>th</sup> plant is inserted in the centre of the square is
  - Hexagonal
  - Triangular
  - Quincunx
  - Contour
- The type of pruning in which the terminal part of the shoot is removed to the desired level, and development of secondary branches is encouraged, is
  - Heading back
  - Thinning out
  - Dehorning
  - None of these
- The type of cropping, where, shorter duration subsidiary crops are grown in a long duration main crop is
  - Parallel cropping
  - Multistoried cropping
  - Synergetic cropping
  - Companion cropping

8. Grapes are pruned only once in North India while twice in Southern India. This is because grapes
- (a) are early in bearing in Northern India while late in Southern India
  - (b) bear lightly in Northern India while they bear heavily in Southern India
  - (c) are less prone to disease in Northern India while they are more prone to disease in Southern India
  - (d) shed leaves in winter in Northern India while they remain evergreen in Southern India
9. Fruit growth follows triple sigmoid curve in
- (a) Aonla
  - (b) Mango
  - (c) Chinese gooseberry
  - (d) Orange
10. The type of parthenocarpy found in Thompson seedless grapes is
- (a) Vegetative parthenocarpy
  - (b) Stenospermocarpy
  - (c) Embryo abortion
  - (d) None of these
11. Fruit drop consisting of shriveled floral organs, male flowers, abnormal flowers and fruits below 4mm in diameter are usually referred to as
- (a) Pin-head drop
  - (b) Post-setting drop
  - (c) Summer drop
  - (d) Pre-mature fruit drop
12. Fruit thinning is done in order to
- (a) maintain the vigour and productivity of the tree
  - (b) improve the size of remaining fruits
  - (c) reduce limb breakage of the tree
  - (d) all of these
13. The lower C/N ratio, i.e., lower carbon will
- (a) induce flowering and inhibit vegetative growth
  - (b) inhibit flowering and induce vegetative growth
  - (c) induce flowering and vegetative growth
  - (d) inhibit flowering and vegetative growth
14. The type of fruit drop, when atmospheric temperature are 42°C to 45°C accompanied with hot, dry wind and low humidity is
- (a) Pin Head Drop
  - (b) Summer Drop
  - (c) June Drop
  - (d) Post Setting Drop
15. Which of the following is not an objective of fruit thinning?
- (a) To obtain uniform sized fruit for processing and canning or for table purpose
  - (b) To help in maintaining the vigour and productivity of the tree
  - (c) To improve size of remaining fruits on the tree and increases marketable yield
  - (d) To increase limb breakage of the tree
16. Which of the following is a climacteric fruit?
- (a) Papaya
  - (b) Litchi
  - (c) Grape
  - (d) Orange
17. Seedlessness of Banana is due to
- (a) Vegetative parthenocarpy
  - (b) Stimulative parthenocarpy
  - (c) Stenospermocarpy
  - (d) Mutation

18. The precursor of 'auxin' in plant tissues is
- (a) Tryptophane
  - (b) Mevalonic acid
  - (c) Methionine
  - (d) Purine
19. Tea is commonly propagated by
- (a) Stem cutting
  - (b) Leaf cutting
  - (c) Leaf bud cutting
  - (d) Root cutting
20. Removal of cambium layer is an essential practice in
- (a) Wedge grafting
  - (b) Budding
  - (c) Air layering
  - (d) Hard wood cutting
21. Which of the following is a monoembryonic species of citrus?
- (a) *Citrus limon*
  - (b) *C. sinensis*
  - (c) *C. grandis*
  - (d) *C. aurantium*
22. High auxin:cytokinin ratio in callus favours the
- (a) Shoot formation
  - (b) Flowering
  - (c) Root formation
  - (d) Embryo development
23. The growing of fruit plant in permanent grasses without tillage is known as
- (a) Cover cropping
  - (b) Sod culture
  - (c) Grass mulch
  - (d) Zero tillage
24. The following PGR is used to induce femaleness in fruits
- (a) GA<sub>3</sub>
  - (b) IAA
  - (c) Cytokinin
  - (d) MH
25. Which of the following is not a component of organic farming?
- (a) Rock Phosphate
  - (b) Vermicompost
  - (c) Bone Meal
  - (d) MOP
26. Sustainable soil fertility can be attained through organic farming in ways that this system of farming provides for
- (a) protecting long-term fertility of the soil by maintaining organic matter levels
  - (b) judicious use of lime to control soil acidity
  - (c) limited use of fertilizer coupled with higher doses of bio-fertilizers
  - (d) all of these
27. The technique of growing legumes and ploughing back into the soil is known as
- (a) Symbiotic fixation
  - (b) Nitrification
  - (c) Green manuring
  - (d) Fertilization
28. The practice of attracting pests to small plantings of crops, which are then destroyed or sprayed with a toxicant is referred to as
- (a) Strip farming
  - (b) Trap cropping
  - (c) Bird perches
  - (d) None of these
29. Water hyacinth contains NPK composition of
- (a) 2.0-1.0-2.3
  - (b) 0.5-0.2-0.5
  - (c) 1.5-1.0-1.5
  - (d) 5.0-5.0-5.0

30. An organic label indicates to the consumer that a product was produced using certain
- (a) organic fertilizers
  - (b) organic pest and disease management
  - (c) quality planting materials
  - (d) production methods (process claim)
31. Which of the following is not a bio control agent?
- (a) *Trichoderma harzianum*
  - (b) *Candida oleophila*
  - (c) *Aspergillus niger*
  - (d) *Rhizoctonia solani*
32. African Merigold is used as Trap crop to trap the adults of
- (a) *Helicoverpa armigera*
  - (b) *Trichogramma spp.*
  - (c) *Chrysoperla carnea*
  - (d) *Apanteles plutella*
33. In integrated weed management, chemical weed control is done by soil fumigation with
- (a) Methyl Bromide
  - (b) Ethyl Bromide
  - (c) Petrol
  - (d) None of these
34. Nuclear Polyhedrosis Virus (NPV) is most effective against
- (a) Hemiptera
  - (b) Cockroaches
  - (c) Lepidopterous insects
  - (d) Thrips
35. Citrus greening virus is transmitted by the vector
- (a) *Toxoptera citricida*
  - (b) *Phyllocnistis citrella*
  - (c) *Planococcus citri*
  - (d) *Diaphorina citrii*
36. Mango is commercially propagated by
- (a) Inarching
  - (b) Vaneer grafting
  - (c) Tongue grafting
  - (d) Cleft grafting
37. 'Cricket ball' is a variety of
- (a) Mangosteen
  - (b) Durian
  - (c) Sapota
  - (d) Litchi
38. The edible portion of litchi fruit is
- (a) Endocarp
  - (b) Mesocarp
  - (c) Bracts and perianth
  - (d) Fleshy aril
39. Botanically, pineapple fruit is
- (a) Sorosis
  - (b) Drupe
  - (c) Berry
  - (d) Syconium
40. Banana Streak Virus (BSV) disease is transmitted through
- (a) Aphid
  - (b) White fly
  - (c) Beetle
  - (d) Mealy bug
41. Causal organism of sigatoka disease of banana is
- (a) *Mycosphaerella musicola*
  - (b) *Macrophomina musae*
  - (c) *Fusarium oxysporum*
  - (d) *Gleosporium musarim*
42. Amrapalli variety of mango is a cross between:
- (a) Dashehari x Neelum
  - (b) Kaveri x Ganga
  - (c) Alphonso x Fazli
  - (d) Rajapuri x Neelum

43. Kinnow mandarin is a hybrid between  
(a) Khasi mandarin x coorg mandarin (b) King mandarin x willow leaf mandarin  
(c) Sweet orange x Acid lime (d) Nagpur mandarin x Sikkim mandarin
44. Sunscald and multiple crown are physiological disorders in  
(a) Papaya (b) Pineapple  
(c) Litchi (d) Loquat
45. The rootstock for apple trees that needs staking throughout their lives is  
(a) M-9 (b) M-26  
(c) M-27 (d) All of these
46. Sapota belongs to the family  
(a) Sapotaceae (b) Myrtaceae  
(c) Sapindaceae (d) Rutaceae
47. Which spectrum of light has direct influence on the colour development of apple fruit?  
(a) Infra red (b) Ultra violet  
(c) Visible (d) Far red
48. Spongy tissue is a physiological disorder affecting following mango variety  
(a) Neelum (b) Dashehari  
(c) Langra (d) Alphonso
49. The modified stem of banana plant is  
(a) Sword sucker (b) Water sucker  
(c) Rhizome (d) Corn
50. Among the three basic sex forms in papaya, the stable one is  
(a) Staminate (b) Pistillate  
(c) Hermaphrodite (d) None of these
51. The most prevailing nematode in banana cultivation is  
(a) *Meloidogyne incognita* (b) *Tylenchulus semipenetrans*  
(c) *Globodera rostochiensis* (d) *Radopholus similis*
52. Which of the following is an example of hill banana?  
(a) Virupakshi (b) Lalkela  
(c) Safed Velchi (d) Nendran
53. The type of flowers present in mango panicles are  
(a) Male only (b) Female only  
(c) Male and hermaphrodite (d) Male and female
54. Which of the following is a dwarfing rootstock of apple?  
(a) M-9 (b) M-13  
(c) M-21 (d) M-27
55. Arecanut is propagated through  
(a) Seeds (b) Cuttings  
(c) Grafting (d) Budding

56. The pre-bearing age for tall varieties of coconut is  
(a) 2 to 3 years (b) 4 to 5 years  
(c) 6 to 10 years (d) 8 to 12 years
57. Coffee species suitable for higher elevations, producing superior quality coffee is  
(a) Arabica (b) Robusta  
(c) Arabica x Robusta (d) Robusta x Arabica
58. Which of the following is a seedless variety of grape?  
(a) Arka Shyam (b) Arka hans  
(c) Arka Vati (d) Arka kanchan
59. 'Charelle wilt' is a physiological disorder affecting young fruit of  
(a) Coconut (b) Coffee  
(c) Tea (d) Cocoa
60. Botanical name of *hatkara fruit* is  
(a) *Citrus limmetoides* (b) *Citrus macroptera*  
(c) *Citrus pseudolimon* (d) *Citrus latifolia*
61. 'Skiffing' is a form of pruning practiced in  
(a) Coffee (b) Tea  
(c) Rubber (d) Betelvine
62. The most widely cultivated variety of oil palm is  
(a) Dura (b) Tenera  
(c) Phoenix (d) Pisifera
63. 'Ablation' is the removal of male and female flowers produced in early stages of plantation, commonly practiced in  
(a) Coconut (b) Cocoa  
(c) Oil palm (d) Rubber
64. In rubber, the latex produced in the bark tissues is harvested through a process called  
(a) Tapping (b) Canning  
(c) Bleaching (d) Steaping
65. Berry blotch of coffee is caused by  
(a) *Cercospora spp* (b) *Colletrotichum*  
(c) *Koleroga spp* (d) *Hemileia spp*
66. 'Vengurla 3', 'Vengurla 4' and 'Vengurla 5' are hybrid varieties of the crop  
(a) Coconut (b) Cocoa  
(c) Cashewnut (d) Coffee
67. Chandralakhsa, a coconut hybrid, is a cross between  
(a) LO X COD (b) LO X GB  
(c) ECT X DG (d) WCT X COD
68. In Oil palm, the Palm oil is extracted from  
(a) Kernel (b) Mesocarp  
(c) Endocarp (d) Epicarp

69. Vertical mulching is mostly practiced in
- (a) Tea gardens
  - (b) Coffee gardens
  - (c) Cocoa gardens
  - (d) Rubber plantation
70. In Tea, TV 21 is
- (a) Yield clone
  - (b) Quality clone
  - (c) Both
  - (d) None of these
71. Which of the following is not a grade of Tea?
- (a) Flowery pekoe
  - (b) Broken Orange Pekoe
  - (c) Super fine dust
  - (d) Super Black dust
72. A small, pointed iron to which a metal core is attached to a wooden handle, used in nurseries for making holes for sowing seeds and planting seedlings
- (a) Digging fork
  - (b) Hand trowel
  - (c) Dibbler
  - (d) Crow bar
73. The process of breaking or softening the seed coat to make it permeable to gas and water is known as
- (a) Stratification
  - (b) Scarification
  - (c) Hormone treatment
  - (d) Freezing treatment
74. A plant that is composed of a mixture of tissues with different genotypes
- (a) Bud Sports
  - (b) Chimera
  - (c) Periclinal meristem
  - (d) Inversion
75. A term commonly applied to graft hybrids and to similar phenomena occurring naturally
- (a) Chimeras
  - (b) Matrix
  - (c) Cybrids
  - (d) Graftwood
76. The practice of formation of roots from stems while still attached to the parent plant is called
- (a) Budding
  - (b) Grafting
  - (c) Layering
  - (d) Cutting
77. The part of a plant that shows morphological differences from the rest of the plant is known as
- (a) Chimera
  - (b) Bud sports
  - (c) Apomixis
  - (d) Polyembryny
78. Monoembryony is found in
- (a) *Citrus medica* and *Citrus grandis*
  - (b) *Citrus reticulata* and *Citrus unshiu*
  - (c) *Citrus deliciosa* and *Citrus nobilis*
  - (d) *Citrus sinensis* and *Citrus aurantium*
79. In budding and grafting, the union between stock and scion takes place through
- (a) Phloem
  - (b) Xylem
  - (c) Cortex
  - (d) Cambium
80. In Kalanchou and Begonia, the commonly used propagation method is
- (a) Root cutting
  - (b) Stem cutting
  - (c) Leaf cutting
  - (d) Grafting
81. The layering in which one year old branch is alternatively covered and exposed is known as
- (a) Tip Layering
  - (b) Trench layering
  - (c) Mound layering
  - (d) Compound layering

82. The outer layer of papaya seed which hinders germination is called
- (a) Integument (b) Testa  
(c) Sarcotesta (d) Embryo
83. Which of the following is the most preferred range of day and night temperature for rooting of cutting
- (a) 21-30°C and 15-16°C (b) 15-20°C and 10-15°C  
(c) 30-35°C and 20-15°C (d) 11-20°C and 10-15°C
84. The success of grafting depends on
- (a) Compatibility of graft union (b) Closeness of fit  
(c) Cambial content (d) All of these
85. Graft incompatibility occurs due to
- (a) Anatomical difference (b) Physiological incompatibility  
(c) Various disease (d) All of these
86. The type of budding, where a transverse cut and two vertical cuts joining the transverse cut are given on the stock and the bark is carefully peeled along these cuts but remain attached on lower is known as
- (a) Forkert Budding (b) Flute Budding  
(c) Chip Budding (d) Patch Budding
87. In fertigation, fertilizer is applied alongwith irrigation water mainly through
- (a) Basins (b) Sprinklers  
(c) Drip system (d) Manually
88. In micro-sprinkler irrigation, water is applied
- (a) to the entire field (b) as foliar spray  
(c) around the root zone (d) alternatively on the plants
89. Which of the following is known as Gravity irrigation?
- (a) Sprinkler (b) Surface  
(c) Sub-surface (d) Drip
90. The small levelled plots surrounded by low earth dikes, within which water can be impounded to irrigate is called
- (a) Basin (b) Check basin  
(c) Border strip (d) Furrow
91. The water particle that is available to the plant roots for absorption is called
- (a) Hygroscopic water (b) Gravitational water  
(c) Capillary water (d) Ground water
92. Which of the following methods delivers small but frequent amount of water to root area of each plant?
- (a) Trickle (b) Sprinkler  
(c) Border Strip (d) Check Basin
93. The critical stage for irrigating potato crops is
- (a) seedling stage (b) seed development  
(c) sprouting and tuberization (d) flowering



94. The ill-effect of submergence of roots of deciduous fruit plants in water for long time is primarily due to
- (a) excess of moisture (b) lack of aeration  
(c) lack of nutrition (d) poor absorption of moisture
95. Among the following honeybee species commonly found in India, the species which was not indigenous to India is
- (a) *Apis dorsata* (b) *Apis mellifera*  
(c) *Apis cerana* (d) *Apis florea*
96. A valuable product of apiculture that can be used for manufacturing various items such as candles, ointments, paints, pharmaceuticals, etc is
- (a) Honey (b) Bees wax  
(c) Bee-venom (d) Royal jelly
97. In bee-keeping, rearing of queens are required for
- (a) division of colonies (b) replacing old exhausted queens  
(c) either (a) or (b) (d) none of these
98. In the honey bee population, which of the following is the smallest among all types?
- (a) Worker (b) Drone  
(c) Queen (d) None of these
99. Nosema disease of bees is caused by
- (a) Protozoa (b) Fungus  
(c) Bacteria (d) Virus
100. In order to prevent bee-loss due to pesticide toxicity, chemical spraying of crops should be avoided at the time of
- (a) flower bud stage (b) flower blooming stage  
(c) petal fall stage (d) fruit bud stage

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