

MIZORAM PUBLIC SERVICE COMMISSION

TECHNICAL COMPETITIVE EXAMINATIONS FOR RECRUITMENT TO THE POST OF SERICULTURE EXTENSION OFFICER UNDER SERICULTURE DEPARTMENT GOVERNMENT OF MIZORAM, OCTOBER, 2020

TECHNICAL PAPER - III

Time Allowed : 2 hours

Full Marks : 150

All questions carry equal mark of 2 each.

Attempt all questions.

1. Define silkworm seed grainage.
 - (a) Centre for disease free seeds
 - (b) Systematic production of disease free seeds under favourable conditions
 - (c) P1 seed station for the farmers
 - (d) P2 seed station for the farmers
2. "One way system of multiplication" was introduced in India under JICA programme since :
 - (a) 1969
 - (b) 1972
 - (c) 1997
 - (d) 2007
3. Average fecundity of Bivoltine P1 moth is :
 - (a) 350
 - (b) 400
 - (c) 450
 - (d) 600
4. In Mulberry silkworm diapause occurs in the _____ stage.
 - (a) pupal
 - (b) egg
 - (c) moth
 - (d) larval
5. What is oviposition?
 - (a) Laying of eggs by a female moth
 - (b) Preparing to lay eggs by a female moth
 - (c) Number of eggs laid by a moth
 - (d) Method of egg laying
6. Optimum temperature and relative humidity during oviposition is :
 - (a) $26 \pm 1^\circ \text{C}$ and $70 \pm 5\% \text{RH}$
 - (b) $25 \pm 1^\circ \text{C}$ and $75 \pm 5\% \text{RH}$
 - (c) $27 \pm 1^\circ \text{C}$ and $80 \pm 5\% \text{RH}$
 - (d) $26 \pm 1^\circ \text{C}$ and $80 \pm 5\% \text{RH}$
7. What is diapause?
 - (a) The arrest of metabolism either during the egg stage or the pupal stage of a silkworm
 - (b) The period of hibernation
 - (c) The period of rest
 - (d) No metabolism
8. What are the four tiers of seed organization in Karnataka?
 - (a) P4, P3, P2 and P1
 - (b) K4, K3, K2 and K1
 - (c) S1, S2, S3 and S4
 - (d) P1, P2, P3 and P4

9. What is the main purpose of incubation of eggs?
- (a) To have uniform hatching under optimum temperature and relative humidity
 - (b) To have synchronise moth emergence
 - (c) To have regular and timely hatching of eggs
 - (d) For successful rearing
10. Transport cocoons _____
- (a) during the hot
 - (b) during the hot
 - (c) during the cool hours of the day
 - (d) during anytime
11. What is the equipment used for preservation of cocoons?
- (a) bamboo tray
 - (b) plastic tray
 - (c) wooden box
 - (d) polythene wrap
12. How many types of moth examination are there?
- (a) one
 - (b) two
 - (c) three
 - (d) four
13. Individual examination of moth is found _____ effective.
- (a) not
 - (b) most
 - (c) more
 - (d) partial
14. _____ is used for termination of diapausing eggs.
- (a) Hcl acid/H₂SO₄
 - (b) Boric acid
 - (c) H₂O₄
 - (d) Phosphoric acid
15. Plastic trays with lids are used for transportation of :
- (a) raw silk
 - (b) cocoons
 - (c) silkworm eggs
 - (d) pupae
16. An ideal temperature of incubation of Tasar silkworm egg is :
- (a) 24 – 25 °C
 - (b) 26 – 27 °C
 - (c) 28 – 30 °C
 - (d) 30 – 31 °C
17. Mid emergence period of moth is :
- (a) midnight
 - (b) evening
 - (c) morning
 - (d) night
18. Muga private graineurs usually prefer _____ grainage house.
- (a) brick walled
 - (b) mud walled
 - (c) straw walled
 - (d) asbestos walled
19. In muga, regular emergence of moth starts from _____ days after pupation.
- (a) 25 - 27
 - (b) 20 - 25
 - (c) 24 - 26
 - (d) 28 - 30
20. In the case of eri, grainage room of 34' x 18' x 12' with all round verandah is required to produce _____ dfls.
- (a) 8000
 - (b) 10000
 - (c) 12000
 - (d) 15000

21. What is disinfection?
- (a) The process in which diseases are destroyed
 - (b) The act of destruction of diseases causing pathogen by application of certain chemicals
 - (c) All methods of killing diseases
 - (d) Washing of eggs
22. Early harvest of cocoons may cause :
- (a) larval death
 - (b) pupal death
 - (c) moth death
 - (d) less fecundity
23. Eri cocoons should not be harvested before _____ days during summer.
- (a) 4 - 5
 - (b) 5 - 6
 - (c) 6 - 7
 - (d) 7 - 8
24. Induced mating in Muga silk moth is successful during :
- (a) in the night
 - (b) 5 – 7 am
 - (c) evening
 - (d) mid night
25. Maximum coupling percentage of eri silk moth take place when the temperature and relative humidity is :
- (a) 25 ° C – 26 ° C and 70 – 80% RH
 - (b) 26 ° C – 28 ° C and 80 – 85 % RH
 - (c) 24 ° C – 25 ° C and 75 – 80% RH
 - (d) 24 ° C – 27 ° C and 70 – 80% RH
26. Eri moth lays eggs on kharika in _____ position.
- (a) horizontal
 - (b) vertical
 - (c) head down side
 - (d) slanting
27. In Muga the larval body usually has _____ tubercles.
- (a) 20
 - (b) 21
 - (c) 22
 - (d) 23
28. What is the average ERR in the case of eri rearing?
- (a) 85%
 - (b) 75%
 - (c) 80%
 - (d) 90%
29. Mating of female and male moth for further reproduction is called :
- (a) mating
 - (b) coupling
 - (c) pairing
 - (d) doubling
30. The average fecundity of Muga silk moth is :
- (a) 350
 - (b) 300
 - (c) 250
 - (d) 200
31. Which one is grainage equipment used both in Eri and Muga seed grainage :
- (a) dhar
 - (b) kharika
 - (c) jhali
 - (d) plastic mountage
32. What is the minimum _____ hour during of coupling Eri silkworm?
- (a) 6 – 10 hours
 - (b) 5 – 6 hours
 - (c) 6 - 8 hours
 - (d) 8 – 10 hours

33. Muga silkworms are vulnerable mainly to _____ types of diseases.
- (a) 1 (b) 2
(c) 3 (d) 4
34. What is the mechanical disinfection in grainage appliances?
- (a) Sun drying in hot sun for 6 – 8 hours (b) Dry in hot air oven
(c) Wash with hot water (d) Clean with soap and brush
35. In Muga sector P2 layings are prepared by the :
- (a) CSB (b) the state govt.
(c) private rearer (d) private graineurs
36. In some states there are licensed seed preparers. Why?
- (a) Rearers want to have their own prepared seed.
(b) Farmers dont rely upon then government.
(c) When the demand of seed cannot be met by the government.
(d) The government cannot produce seeds for the farmers.
37. Studies on *P. ricini* on the inheritance of larval body colour, spotting pattern and cocoon colour shown that all these characteristics are :
- (a) monogenic (b) polygenic
(c) transgenic (d) triple genic
38. Optimum condition for incubation of Mulberry eggs is :
- (a) $24 \pm 1^\circ\text{C}$ with 70% RH (b) $25 \pm 1^\circ\text{C}$ with 75% RH
(c) $26 \pm 1^\circ\text{C}$ with 80% RH (d) $27 \pm 1^\circ\text{C}$ with 80 - 85% RH
39. In India loose eggs are prepared mostly in :
- (a) Univoltine hybrid (b) Bivoltine hybrid
(c) Mutivoltine hybrid (d) Trivoltine hybrid
40. Black boxing aims at :
- (a) To get uniform hatching on a single day
(b) Faster development of eggs
(c) To avoid mortality in the egg stage
(d) To protect from ants and predators before hatching
41. Oak tasar seed cocoons are preserved in garland and the cocoons are subjected to 16 hours photoperiodic treatment. Why?
- (a) To synchronise the emergence of moth and to break untimely pupal diapauses
(b) To shorten the period of pupal stage
(c) To lengthen the period of pupal stage
(d) To sharten the period of moth stage
42. Second crop of Tasar cocoons are preserved at high altitude where the temperature remains below 15°C . Why?
- (a) To prevent untimely emergence and to lengthen the period of pupal diapauses for the next spring crop
(b) To stop metabolism of silkworm
(c) To prevent from many of the predators for cocoons attack
(d) To refrain from pollution

43. Why moth examination is required?
- (a) To detect/determine the presence of pebrine spores
 - (b) To have healthy silkworm eggs
 - (c) To avoid disease infection
 - (d) To detect the presence of tukra
44. Optimum condition for incubation of Oak tasar eggs is :
- (a) $18 \pm 2^\circ \text{C}$ and 70% RH
 - (b) $22 \pm 2^\circ \text{C}$ and 80% RH
 - (c) $25 \pm 1^\circ \text{C}$ and 85% RH
 - (d) $24 \pm 1^\circ \text{C}$ with 70% RH
45. Location of grainage building in Tropical tasar should be :
- (a) low lying area
 - (b) well elevated
 - (c) as found convenient
 - (d) very high altitude
46. Daba cocoon is produced by :
- (a) *Anthereae mytta*
 - (b) *Anthereae assamensis*
 - (c) *Anthereae proylei*
 - (d) *Anthereae pernei*
47. The grainage building of Tropical tasar silkworm should have _____ width all round verandah.
- (a) 2.00 m
 - (b) 2.5 m
 - (c) 3.00 m
 - (d) 4.0 m
48. A mud walled with high ceiling is a low cost grainage building of :
- (a) Muga grainage
 - (b) Eri grainage
 - (c) Tropical tasar grainage
 - (d) Mulberry grainage
49. The most common disinfectants in all varieties is :
- (a) 0.1 Rogor
 - (b) 2 – 5 % Formalin
 - (c) 1% Bavistin
 - (d) Sulphuric acid
50. Define Micorbial disease.
- (a) A relationship between two organism that is not beneficial to one or to both of them
 - (b) A saprophytic disease
 - (c) A parasytic disease
 - (d) Both saprophytic and parasytic diseases
51. What are the two procedures of moth examination?
- (a) Dry moth examination & Green moth examination
 - (b) Live moth examination of male & female
 - (c) Preserved moth examination of male & female
 - (d) Just before emergence of moth in male & female
52. Only _____ of twenty six carbohydrates constituents are utilized by the eri silkworm.
- (a) 15
 - (b) 16
 - (c) 17
 - (d) 18
53. For surface sterilization of eggs, the egg sheets are dipped in 2% formalin solution for :
- (a) 8 – 10 mins
 - (b) 10 – 15 mins
 - (c) 15 – 20 mins
 - (d) 2 – 3 mins

54. _____ seed cocoon batches should not be produced.
- (a) Defective (b) Flimsy
(c) Oval (d) Elongated
55. Male moth should not be cold stored for more than :
- (a) 5 times (b) 6 times
(c) 7 times (d) 8 times
56. Male moth can be used for coupling _____ if required.
- (a) Thrice (b) twice
(c) four times (d) fifth times
57. The study of the nature of disease/micro organism is known as :
- (a) Pathogenic (b) Pathology
(c) Pathologist (d) Oncologist
58. Antherea proylei is silkworm race from crossing of Antherea _____ and Antherea _____.
- (a) pernyi and roylei (b) mylitta and pernyi
(c) roylei and polyphemus (d) cynthia and mylitta
59. What is the use of Chakaripera?
- (a) It is coupling cage specially made for Muga silk moth
(b) It is used for coupling cage of Eri
(c) It is used for coupling cage of Mulberry
(d) Tasar cocoon preservation cage
60. Eri silk worm is characterised by low sericin content of _____ as compared with 10% in mulberry silk, 8.62% in tasar and 7.88% in Muga.
- (a) 4.96% (b) 4.70%
(c) 5.96% (d) 5.50%
61. In Mulberry silkworm the optimum climatic condition is :
- (a) $24 \pm 1^\circ \text{C}$ and $70 \pm 5\% \text{ RH}$ (b) $25 \pm 1^\circ \text{C}$ and $75 \pm 5\% \text{ RH}$
(c) $26 \pm 1^\circ \text{C}$ and $80 \pm 5\% \text{ RH}$ (d) $27 \pm 1^\circ \text{C}$ and $70 \pm 5\% \text{ RH}$
62. What is the chemical used to break the diapausing bivoltine eggs :
- (a) Hydrochloric acid with 1.072 Specific gravity
(b) Sulphuric acid
(c) Hydrochloride acid
(d) Sodium hypochloride
63. Optimum temperature for hot acid treatment is :
- (a) 40°C (b) 46°C
(c) 50°C (d) 45°C
64. What is quality bivoltine seed?
- (a) Cross between Bi x Bivoltine
(b) Bi x Multivoltine
(c) Quality bivoltine seed is a cross between two unrelated bivoltine silkworm breed parent seed cocoons.
(d) Uni x Bivoltine

65. One of the method for synchronization of emergence of Muga is :
- (a) To preserve early emerge male moth upto 48 hours at 10° C
 - (b) To preserve early emerge male moth upto 45 hours at 15° C
 - (c) To preserve early emerge male moth upto 40 hours at 20° C
 - (d) To preserve early emerge male moth upto 43 hours at 10° C
66. Fresh tender, high nutritious, succulent mulberry leaves for feeding of newly hatch larvae should contain _____ moisture.
- (a) 60 – 65 %
 - (b) 70 – 75 %
 - (c) 80 – 85 %
 - (d) 70 – 80 %
67. Mulberry chawki worms consume only _____ % of total feeds but increase 400 times in its body weight, 300 times in body size and 500 times in silk gland weight if the condition are ideal.
- (a) 6%
 - (b) 7%
 - (c) 8%
 - (d) 9%
68. After disinfectants are sprayed inside the grainage, let it be closed for _____ hours before use.
- (a) 24
 - (b) 48
 - (c) 56
 - (d) 72
69. Use perforated plastic basket of 565 mm x 365 mm x 215 mm which may contain around _____ cocoons.
- (a) 5 kgs
 - (b) 10 kgs
 - (c) 12 kgs
 - (d) 20 kgs
70. The Optimum temperature and relative humidity required for bivoltine seed cocoon preservation is :
- (a) $24 \pm 1^\circ \text{C}$ and 70 % RH
 - (b) $26 \pm 3^\circ \text{C}$ and 75 % RH
 - (c) $25 \pm 3^\circ \text{C}$ and 75 % RH
 - (d) $29 \pm 1^\circ \text{C}$ and 75 % RH
71. Under optimum rearing condition, mulberry silkworm takes _____ days to settle for 1st moult.
- (a) 3 to 3.5 days
 - (b) 4 days
 - (c) 2 to 3 days
 - (d) 4 to 4.5 days
72. How many types of acid treatments are there?
- (a) One
 - (b) Two
 - (c) Three
 - (d) Four
73. What is the _____ specific gravity used in cold acid treatment when the temperature is 25°C?
- (a) 1.100 sp.gr
 - (b) 1.108 sp.gr
 - (c) 1.105 sp.gr
 - (d) 2.105 sp.gr
74. Diapausing eggs should pass through moderately low temperature (20° C, 15° C, 10° C) before starting of cold storage at _____ to reduce cold injury.
- (a) 5° C/2.5° C
 - (b) 2.5° C/5° C
 - (c) 6.5° C /3.0° C
 - (d) 5° C / 3.0° C
75. What is seed technology?
- (a) The technology involved in production of commercial seeds
 - (b) The production of high yielding silkworm seeds
 - (c) The technology involved in production of healthy seeds
 - (d) Preparation of silkworm seed