

# MIZORAM PUBLIC SERVICE COMMISSION

## GENERAL COMPETITIVE EXAMINATIONS FOR RECRUITMENT TO THE POST OF SERICULTURE EXTENSION OFFICER UNDER SERICULTURE DEPARTMENT SEPTEMBER, 2018

### PAPER - II

Time Allowed : 2 hours

Full Marks : 200

*All questions carry equal marks of 2 each.*

*Attempt all questions.*

1. After 24hrs of moulting Muga worms along with the leaves should be sprayed
  - (a) 3% Bleaching powder
  - (b) 0.3% Slaked lime
  - (c) 0.02% Sodium Hypochloride
  - (d) 2% Formalin
2. Pupal diapause is found in
  - (a) Mulberry Silkworm
  - (b) Eri Silkworm
  - (c) Tasar Silkworm
  - (d) Both (b) & (c)
3. Which of the followings is a bivoltine pure race
  - (a) Nistari, NB4D2, Pure Mysore
  - (b) Kalimpong-A, NB18, NB4D2
  - (c) Pure Mysore, NB18, CSR2
  - (d) CSR2, Kalimpong-A, Nistari
4. Young silkworms are more resistant to
  - (a) High temperature, high humidity and bad ventilation
  - (b) High temperature, low humidity and bad ventilation
  - (c) Low temperature, low humidity and good ventilation
  - (d) Low temperature, high humidity and good ventilation
5. Silkworms are fond of dim light
  - (a) 15-20 lux
  - (b) 15-30 lux
  - (c) 10-30 lux
  - (d) 20-30 lux
6. Silkworm settle for first moults in \_\_\_\_\_ from the date of brushing
  - (a) 4 days
  - (b) 2 days
  - (c) 3 days
  - (d) 4-5 days
7. What is the best method of late age rearing
  - (a) Box rearing
  - (b) Shoot rearing
  - (c) Stand rearing
  - (d) All of these
8. When the temperature is \_\_\_\_\_ the spinning process is slow.
  - (a) Lower than 20°C
  - (b) Below 30°C
  - (c) Between 25°-27°C
  - (d) Lower than 25°C
9. The urine excreted by the larvae increases the \_\_\_\_\_ of the rearing bed.
  - (a) Temperature
  - (b) Humidity
  - (c) Air current
  - (d) Both (a) & (b)

10. Highest ripening day of mature worms in Muga Rearing is
  - (a) Bhorpak
  - (b) Jhali
  - (c) Kharika
  - (d) Chaloni
11. Muga worms should be transferred from one plant to another even when there is still \_\_\_\_\_ foliage on plants to avoid starvation
  - (a) 10%
  - (b) 30%
  - (c) 25%
  - (d) 20%
12. Jhali is used for \_\_\_\_\_ of muga silkworm.
  - (a) Transfer of worms
  - (b) Mounting
  - (c) Egg laying
  - (d) Bed cleaning
13. In Oak Tasar culture, worms are reared in indoor for
  - (a) 5-10 days
  - (b) 10 days
  - (c) 10-12 days
  - (d) None of these
14. Which is not a part of silkworm egg?
  - (a) Chorion
  - (b) Yolk
  - (c) Spinneret
  - (d) Vitelline membrane
15. Hormone produced by corpus allatum in silkworm is
  - (a) Juvenile hormone
  - (b) Ecdysone hormone
  - (c) Diapause hormone
  - (d) None of these
16. The number of spiracles in silkworm larvae is
  - (a) 7 pairs
  - (b) 6 pairs
  - (c) 10 pairs
  - (d) 9 pairs
17. The abdominal segments of a silkworm larva has
  - (a) 3 segment
  - (b) 6 segment
  - (c) 11 segment
  - (d) 9 segment
18. The diapausing stage in the life cycle of *Bombyx mori* is
  - (a) Egg
  - (b) Pupa
  - (c) Larva
  - (d) Moth
19. Ideal temperature and humidity required for preservation of seed cocoon is
  - (a) 25°C and 70-80%RH
  - (b) 20°C and 90%RH
  - (c) 14±1°C and 60%RH
  - (d) 10±2°C and 65%RH
20. Female pupae can be identified by
  - (a) Small spot on the ventral surface of 9<sup>th</sup> abdominal segment
  - (b) Small body structure
  - (c) X-shaped mark in the centre of 8<sup>th</sup> abdominal segment
  - (d) Narrow slit on the abdomen
21. When moths are allowed to emerge in a natural way a kind of digestive fluid secreted is known as
  - (a) Scricin
  - (b) Morin
  - (c) Proline
  - (d) Cocoonase
22. What is the valve which regulates the passage of food from foregut to the midgut and prevents regurgitation?
  - (a) Pyloric valve
  - (b) Cardiac valve
  - (c) Spiracles
  - (d) Spinneret

23. External openings of the respiratory system in *Bombyx mori* are known as  
(a) Ostia (b) Rectum  
(c) Spiracles (d) Spinneret
24. The female silkworm larvae can be identified by the presence of  
(a) Silk glands (b) Scent gland  
(c) Ischiwatta's gland (d) Herold glands
25. Which portion of the silk gland secretes fibrion  
(a) Anterior region (b) Middle region  
(c) Middle section of middle region (d) Posterior region
26. Filippi's or Lyonnet's gland is found in  
(a) Silk gland (b) Digestive system  
(c) Excretory system (d) Respiratory system
27. The larval duration of Oak Tasar silkworm is  
(a) 30-35 days (b) 10-11 days  
(c) 20-25 days (d) 40 days
28. Muga silkworm belongs to the genus  
(a) Antheraea (b) Philosomia  
(c) Eriogyna (d) None of these
29. Tubercles colour of 3<sup>rd</sup> instar Muga silkworm is  
(a) Blue (b) Pale yellow  
(c) Violet (d) Brick-red
30. The scientific name of Oak Tasar silkworm is  
(a) Antheraea proylei (b) Antheraea assama  
(c) Bombyx mori (d) Quercus acutissima
31. Voltinism referred on the basis of  
(a) Geographical distribution (b) Number of larval moulting  
(c) Number of generation per year (d) None of these
32. Where do you find diapausing eggs of silkworm?  
(a) Tasar (b) Muga  
(c) Eri (d) Mulberry
33. The process of casting off exoskeleton in silkworm is called  
(a) Moulting (b) Mounting  
(c) Mulching (d) Brushing
34. Diploid number of chromosomes in somatic cells of *Bombyx mori* is  
(a) 28 (b) 56  
(c) 84 (d) 112
35. The gene responsible for producing the moulting hormone ecdysone was located on  
(a) 6 chromosome (b) 10 chromosome  
(c) 8 chromosome (d) 7 chromosome
36. The female sex chromosome in *Bombyx mori* is  
(a) ZZ (b) XY  
(c) ZW (d) XX

37. List of sex limited breeds in India by hybridization is  
(a) ZPN (SL), CSR3, CSR8 (b) MC4, CSR2, CSR4  
(c) CSR4, CSR3, NB4D2 (d) CSR2, CSR8, ZPN (SL)
38. Female cocoon colour of sex limited breed CSR8 is  
(a) White (b) Yellow  
(c) Green (d) Pink
39. In silkworm the major gene for resistance to *B. bassiana* pathogen is located on the  
(a) 7<sup>th</sup> and 11<sup>th</sup> chromosome (b) 9<sup>th</sup> and 10<sup>th</sup> chromosome  
(c) 7<sup>th</sup> and 8<sup>th</sup> chromosome (d) 10<sup>th</sup> chromosome
40. The duration of light and darkness to be provided during incubation of silkworm egg is  
(a) 8 hours light and 16 hours darkness (b) 14 hours light and 7 hours darkness  
(c) 12 hours light and 8 hours darkness (d) 16 hours light and 8 hours darkness
41. Black boxing of silkworm eggs during incubation is done for  
(a) 48-72 hrs (b) Synchronized hatching  
(c) Uniform growth of larvae (d) All of these
42. Requirement of temperature and relative humidity conditions for Chawki rearing are  
(a) 25°C and 60-70%RH (b) 26-28°C and 80-85%RH  
(c) 25-26°C and 85-95%RH (d) 25-30°C and 80-85%RH
43. The larval stage of *Bombyx mori* passes through \_\_\_\_\_ number of moults before spinning of cocoons  
(a) Three (b) Four  
(c) Five (d) None of these
44. The ideal time for brushing of silkworm is  
(a) 7 A.M (b) 9 A.M  
(c) 7-8 A.M (d) 10 A.M
45. What is the minimum gap required between two consecutive rearing?  
(a) 5 days (b) 25 days  
(c) 10 days (d) 1 month
46. The success of silkworm rearing mainly depends on  
(a) Good quality leaves (b) Brushing  
(c) Mounting (d) None of these
47. Photoecdysone (Plant extract) is a hormone used for  
(a) Uniform mounting and ripening (b) Foliar spray for mulberry  
(c) Bed disinfectants to prevent silkworm disease (d) None of these
48. The frequency of feeding of silkworm is  
(a) 3 feeding/day (b) 5 feeding/day  
(c) 4 feeding/day (d) 6 feeding/day
49. Bed disinfectant should be applied  
(a) During moulting (b) 30 minutes before feeding  
(c) 1 hour before feeding (d) 30 minutes after feeding

50. How many plastic tray are required for rearing of 100 dfls of mulberry silkworm eggs?  
(a) 120 (b) 150  
(c) 80 (d) 100
51. A silkworm completes spinning of cocoon within  
(a) 2-3 days (b) 5-6 days  
(c) 4-5 days (d) 1-2 days
52. One plastic collapsible moutage can accommodate  
(a) 200 larvae (b) 350-400 larvae  
(c) 1200 larvae (d) 80-150 larvae
53. Ideal temperature and relative humidity required during spinning are \_\_\_\_\_ respectively.  
(a) 25-27°C and 60-70%RH (b) 24-25°C and 70-80%RH  
(c) 26-27°C and 60-70%RH (d) 26°C and 55-65%RH
54. No. of cocoon in 1kg is 560. Pierce cocoon-5, double cocoon-15, flimsy cocoon-8, malformed cocoon-4. Calculate the good cocoon percentage.  
(a) 5.7% (b) 90.4%  
(c) 85% (d) 94.3%
55. The total life span of Eri silkworm is  
(a) 50 days (b) 50-120 days  
(c) 30-35 days (d) 50-55 days
56. Which silkworm produces open end cocoon  
(a) Muga silkworm (b) Mulberry silkworm  
(c) Eri silkworm (d) Tasar silkworm
57. Aherua crop in Muga culture is a  
(a) Seed crop (b) Second commercial crop  
(c) Main commercial crop (d) Pre seed crop
58. Appliances used to transfer of Muga silkworm from one plant to another  
(a) Chaloni (b) Jhali  
(c) Khora (d) Bamboo pole
59. Given below is a sequence of steps in the processing of reeling. Fill in the blank the missing sequence steps.  
Stifling \_\_\_\_\_ reeling \_\_\_\_\_  
(a) Cooking, re-reeling (b) Lacing, cooking  
(c) Sorting, brushing (d) Lacing, skeining
60. Dupian silk is obtained from  
(a) Calcified cocoon (b) Good cocoon  
(c) Pre-mature cocoon (d) Double cocoon
61. pH of reeling water required for quality raw silk production is  
(a) 8.8 (b) 10-12  
(c) 6.6-7.8 (d) 8.2-9
62. Filament length of bivoltine cocoon is  
(a) 300-500 (b) 700-1500  
(c) 500-700 (d) 2000-2500

63. Number of ends per basin in multi-end reeling machine  
(a) 20 (b) 5  
(c) 1 (d) 10
64. Types of Croissure in multi-end reeling machine is  
(a) Chambon type (b) Tavellette type  
(c) Standard type (d) All of these
65. Serigraph test is  
(a) To determine the neatness of raw silk  
(b) To determine the degree of agglutination of filaments  
(c) To find the tenacity and elongation of raw silk  
(d) To determine the number of breaks
66. In India the purity of silk ensures through the  
(a) ISI mark (b) Agmark  
(c) Silkmark (d) Serimark
67. The unit used to measure the thickness of silk filament  
(a) Denier (b) Renditta  
(c) Micron (d) MM
68. Calculate the shell ratio where cocoon and pupal weight are 1.9 and 1.7 gms respectively  
(a) 11% (b) 15%  
(c) 10.5% (d) 12%
69. Silk are divided into three categories according to their size and their grades expressed in order of  
(a) A,B,2A,3A,4A (b) 4A,3A,2A,A,B  
(c) B,A,2A,3A,4A (d) B,4A,3A,2A,A
70. Process of separation of cocoon according to their size is called  
(a) Stifling (b) Deflossing  
(c) Riddling (d) Skeining
71. Number of kg of cocoon required to produce 1kg of raw silk is called  
(a) Shell ratio (b) Denier  
(c) Renditta (d) Kakame
72. In Raw Silk classification category II is the size of  
(a) 18 denier and below (b) 15 to 30 denier  
(c) 20 denier and above (d) 19 to 33 denier
73. Ahimsa silk is naturally obtained from  
(a) Tasar silk (b) Mulberry silk  
(c) Muga silk (d) Eri silk
74. In which year Indian Silk is first published?  
(a) 1953 (b) 1962  
(c) 1964 (d) 1949
75. One of the popular oxidising agents used for bleaching of silk is  
(a) Sulphur dioxide (b) Sodium hypochlorite  
(c) Hydrogen peroxide (d) Bleaching powder

76. In the process of Soupling the gum removal percentage is  
(a) 10-15% (b) 20-25%  
(c) 2-5% (d) 15-20%
77. The fibroin composition in mulberry raw silk is  
(a) 20-30% (b) 70-80%  
(c) 40-50% (d) 35-55%
78. A solution of acid dye contain  
(a) 2-4% acetic acid + 10% glauber salt (b) 5-6% acetic acid + 5% glauber salt  
(c) 4% acetic acid + 8% glauber salt (d) 3% acetic acid + 10% glauber salt
79. In weaving the longitudinal threads are called  
(a) Weft (b) Bave  
(c) Warp (d) Braid
80. The only country that produces Muga Silk is  
(a) China (b) Japan  
(c) Korea (d) India
81. The top three silk producing countries are  
(a) China, India, Japan (b) China, India, Uzbekistan  
(c) China, India, USA (d) China, India, Germany
82. The ratio of Vanya and Mulberry silk production in India is around  
(a) 26:74 (b) 20:80  
(c) 15:85 (d) 18:82
83. The number of cocoon required to produced 1kg of muga raw silk is  
(a) 3000-4000 (b) 4500-5000  
(c) 6000 (d) 3500-4500
84. In India, there is a three tiers silkworm seed/egg multiplication system  
(a) P<sub>3</sub>, P<sub>2</sub>, P<sub>1</sub> (b) P<sub>2</sub>, P<sub>1</sub>, P<sub>3</sub>  
(c) P<sub>1</sub>, P<sub>2</sub>, P<sub>3</sub> (d) P<sub>3</sub>, P<sub>1</sub>, P<sub>2</sub>
85. In Mizoram the basic seed farm was located at  
(a) Zemabawk (b) Zobawk  
(c) Lengpui (d) Rangvamual
86. The 'Silkworm Seed Act' was first promulgated in  
(a) 1949 (b) 1959  
(c) 1960 (d) 1962
87. In great grand parent (P3) rearing are conducted in  
(a) 25 laying per batch (b) 10 laying per batch  
(c) 1 laying per batch (d) 5 laying per batch
88. In P3 station only————bivoltine cocoons are selected for P2 laying preparation  
(a) 40% (b) 20%  
(c) 60% (d) 30%

89. Number of grainage centres in Mizoram is  
(a) 8 (b) 9  
(c) 2 (d) 4
90. Central Silk Board started Race Authorization Programme in  
(a) 1990 (b) 1985  
(c) 1995 (d) 1992
91. The full genome of silkworm was published by International Silkworm Genome Consortium in  
(a) 2004 (b) 2008  
(c) 2007 (d) 2006
92. A DNA strand copied from mRNA using reverse transcriptase is known as  
(a) zDNA (b) Humidifier  
(c) cDNA (d) None of these
93. Analytical technique used to detect specific proteins in a given sample tissue homogenate  
(a) Western blotting (b) Northern blotting  
(c) Southern blotting (d) Agarose gel electrophoresis
94. Role of restriction enzymes in the recombinant DNA technology is  
(a) Cut the DNA (b) Join the DNA  
(c) Match the DNA (d) All of these
95. Colchicine is a  
(a) Pesticides (b) Chemical mutagens  
(c) Fungicide (d) Nematicide
96. Germplasm bank is a  
(a) Fertilizer storage centre (b) Place where water is stored  
(c) Place where gene pool is maintained (d) Agricultural development bank
97. Central Sericultural Germplasm Resource Centre was located in  
(a) Bangalore (b) Mysore  
(c) West Bengal (d) Hosur
98. An individual carrying the gametic chromosome number 'n' is known as  
(a) Diploid (b) Haploid  
(c) Tetraploid (d) Polyploidy
99. Back crossing is used for induction of  
(a) Inbreeding (b) Disease resistance  
(c) Mutation breeding (d) Polyploidy breeding
100. Oak Tasar silkworm *Antheraea proylei* is the hybrid between *Antheraea roylei* and  
(a) *Antheraea mylitta* (b) *Antheraea asama*  
(c) *Antheraea pernyi* (d) *Antheraea jolly*