



UNIVERSITY OF MYSORE
Ph.D. Entrance Examination, October - 2017

SUBJECT CODE :

55

QUESTION BOOKLET NO.

04367

Entrance Reg. No.

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QUESTION BOOKLET

(Read carefully the instructions given in the Question Booklet)

SUBJECT :

SERICULTURE

MAXIMUM MARKS : 100

MAXIMUM TIME : THREE HOURS

(Including initial 10 minutes for filling O.M.R. Answer sheet)

INSTRUCTIONS TO THE CANDIDATES

1. The sealed questions booklet containing 50 questions enclosed with O.M.R. Answer Sheet is given to you.
2. Verify whether the given question booklet is of the same subject which you have opted for examination.
3. Open the question paper seal carefully and take out the enclosed O.M.R. Answer Sheet outside the question booklet and fill up the general information in the O.M.R. Answer sheet. If you fail to fill up the details in the form of alphabet and signs as instructed, you will be personally responsible for consequences arising during scoring of your Answer Sheet.
4. During the examination:
 - a) Read each question carefully.
 - b) Determine the Most appropriate/correct answer from the four available choices given under each question.
 - c) Completely darken the relevant circle against the Question in the O.M.R. Answer Sheet. For example, in the question paper if "C" is correct answer for Question No.8, then darken against Sl. No.8 of O.M.R. Answer Sheet using Blue/Black Ball Point Pen as follows:

Question No. 8. (A) (B) ● (D) (Only example) (Use Ball Pen only)

5. Rough work should be done only on the blank space provided in the Question Booklet. Rough work should not be done on the O.M.R. Answer Sheet.
6. If more than one circle is darkened for a given question, such answer is treated as wrong and no mark will be given. See the example in the O.M.R. Sheet.
7. The candidate and the Room Supervisor should sign in the O.M.R. Sheet at the specified place.
8. Candidate should return the original O.M.R. Answer Sheet and the university copy to the Room Supervisor after the examination.
9. Candidate can carry the question booklet and the candidate copy of the O.M.R. Sheet.
10. The calculator, pager and mobile phone are not allowed inside the examination hall.
11. **If a candidate is found committing malpractice, such a candidate shall not be considered for admission to the course and action against such candidate will be taken as per rules)**

INSTRUCTIONS TO FILL UP THE O.M.R. SHEET

1. There is only one most appropriate/correct answer for each question.
2. For each question, only one circle must be darkened with BLUE or BLACK ball point pen only. Do not try to alter it.
3. Circle should be darkened completely so that the alphabet inside it is not visible.
4. Do not make any stray marks on O.M.R. Sheet.

ಗಮನಿಸಿ : ಸೂಚನೆಗಳ ಕನ್ನಡ ಆವೃತ್ತಿಯು ಈ ಪುಸ್ತಕದ ಹಿಂಭಾಗದಲ್ಲಿ ಮುದ್ರಿಸಲ್ಪಟ್ಟಿದೆ.

M-3682

SEAL

SEAL

PART - A

Chose the most Appropriate answer for the following Questions.[50 × 1 = 50]

- 1) The mulberry variety which is comparatively high yielding and responds to optimum agronomic practices is
 - (A) S54
 - (B) Vishwa
 - (C) Victory - I
 - (D) S36

- 2) Somatic hybridization techniques in mulberry crop improvement helps in increasing
 - (A) High Biomass production
 - (B) Regeneration of tropical genotypes
 - (C) Superior nutritional quality of Temperate genotypes
 - (D) All of these

- 3) The leaf biomass production in mulberry is increased by utilization of
 - (A) Diploids
 - (B) Polyploids
 - (C) Haploids
 - (D) Double haploids

- 4) The genome size of Mulberry plant is
 - (A) 5×10^8 bp/haploid cells
 - (B) 10×10^8 bp/haploid cells
 - (C) 15×10^8 bp/haploid cells
 - (D) 20×10^8 bp/haploid cells

- 5) The complete nucleotide sequence of mulberry variety *Morus indica* chloroplast genome is
 - (A) 108484 bp
 - (B) 158484 bp
 - (C) 58484 bp
 - (D) 208484 bp

- 6) The two amino acids that enhances the micropropagation of mulberry plant are
- (A) Glycine & Proline (B) Serine & Threonine
(C) Glutamine & Asparagine (D) None
- 7) Phylloplanemycroflora are
- (A) Organisms multiplied on leaf lamina (B) Organisms multiplied on stem
(C) Organism multiplied on root (D) Organism multiplied in soil
- 8) Papaya mealybug belongs to the family
- (A) Coccidae (B) Pseudococcidae
(C) Pentatomidae (D) Cicadellidae
- 9) *Paraputus sp.* attacks _____ portions of muga silkworm host plants.
- (A) Leaves (B) Axillary buds
(C) Apical buds (D) Roots
- 10) In silkworms, the male larva is identified from female larva based on the presence of
- (A) .Ishiwata's glands (B) Herold's glands
(C) "X" mark (D) Lateral shiny spot
- 11) The process of shedding down of exoskeleton in silkworm is called as
- (A) Brushing (B) Melting
(C) Moulting (D) Mounting

- 12) 'Sampoorna', a plant based formulation is used for
- | | |
|-----------------------------------|--------------------------------------|
| (a) Leaf feeding of silkworms | (b) Uniform maturation of silkworms |
| (c) Uniform moulting of silkworms | (d) Developing tolerance to diseases |

Which of the above is / are correct?

- | | |
|------------------|------------------|
| (A) Only a | (B) Only b |
| (C) Both a and b | (D) Both c and d |
- 13) Match the diseases of silkworms in coloumn 'A' with their characteristic symptoms mentioned under coloumn 'B'.

| A | B |
|-----------------------------|---|
| a) Cytoplasmic Polyhedrosis | i) Paralysis |
| b) Nuclear Polyhedrosis | ii) Red pigmentation |
| c) Muscardine | iii) Rectal protrusion |
| d) Rangi diseases | iv) Swelling of inter-segmental regions |
| e) Sotto diseases | v) Chalk like body |
| (A) i, iii, iv, v, ii, | (B) iv, ii, v, i, iii |
| (C) iii, iv, v, ii, i | (D) v, ii, i, iii, iv |

- 14) Which of the silkworm hybrid's is / are sex-limited ones?

- | | |
|-------------------------------|-------------------------------|
| a) $CSR_2 \times CSR_4$ | b) $CSR_2 \times CSR_5$ |
| c) $CSR_{18} \times CSR_{19}$ | d) $CSR_{19} \times CSR_{18}$ |

Which of the above is / are correct?

- | | |
|-------------|-------------------|
| (A) a only | (B) a, b and c |
| (C) c and d | (D) a, b, c and d |
- 15) A triangular bamboo sieve, which is used for transferring muga silkworms form one tree to another is known as a
- A) Chaloni
 B) Jaali
 C) Kharika
 D) Mountage

- 16) The enzyme secreted by the galeae of the silk moth of *Bombyx mori* L. during emergence is
- (A) Amylase (B) Cocoonase
(C) Inulinase (D) Maltase

- 17) The silk gland region/s wherein the silk protein 'Sericin' is synthesized is/are
- a) Anterior region b) Anterior middle region
c) Middle middle region d) Posterior middle region
e) Posterior region

Which of the above is / are correct?

- (A) a and b (B) a, b and c
(C) b, c and d (D) c, d and e
- 18) Match the R&D institutions in sericulture under column 'A' with their location mentioned under column 'B'

- | A | B |
|---|--------------|
| a) Central Sericulture Research & Training Institute | i) Bengaluru |
| b) Central Tasar Research & Training Institute | ii) Hosur |
| c) Central Muga and Eri Research & Training Institute | iii) Ranchi |
| d) Central Sericultural Germplasm Resource Centre | iv) Jorhat |
| e) Central Silk Technological Research & Training Institute | v) Pampore |
- (A) i, ii, iv, iii and v (B) i, v, iii, iv and ii
(C) iv, i, ii, v and iii (D) v, iii, iv, ii and i

- 19) The virus based vector which is most commonly used for the silkworm transgenesis is
- (A) SV 40 virus (B) Papiloma virus
(C) Baculovirus (D) Bovine virus

- 20) The biotechnological approach which is used for development of transgenic silkworm for the control of NPV infection is
- (A) RNA-Inference (B) Gene therapy
(C) Gene Mutation (D) None
- 21) Silkworm gene transfer efficiency depends on
- (A) DNA concentration & DNA Delivery technique
(B) Site of injection into the silkworm egg and Ratio of helper to Selection vector
(C) Both A & B
(D) None
- 22) The promoter used for construction of PiggyBac transposons vectors for the development of transgenic silkworm is
- (A) Cytoplasmic actin A₃ promoter (B) CMV 35 S Promoter
(C) Ubiquitine promoter (D) hsp promoter
- 23) Silk encoding gene fibroin is secreted in
- (A) Anterior Silk gland (B) Middle Silk gland
(C) Posterior Silk gland (D) None
- 24) The most commonly used selection marker genes in silkworm transgenesis is
- (A) *npt-II* gene (B) *hpt-II* gene
(C) Gus gene (D) GFP gene
- 25) The natural host of BmNPV is
- (A) *Bombyx mori* (B) *Drosophila* sp.
(C) Bollworm (D) Cutworm

- 26) Rectal protrusion in silkworm is due to the infection of
(A) *BmNPV* (B) *BmCPV*
(C) *BmDENV1* (D) *BmIFV*
- 27) The total number of segmental ganglion in silkworm is
(A) 8 (B) 9
(C) 11 (D) 7
- 28) Peritropic membrane is found in
(A) Integument (B) Midgut
(C) Hindgut (D) Foregut
- 29) In *B. mori*, the caudal horn is found on _____ abdominal segment.
(A) 8th dorsal (B) 8th Ventral
(C) 8th Pleural (D) 8th Medio lateral
- 30) Number of compound eyes in female silkworm
(A) Two (B) Four
(C) Eight (D) Six
- 31) *Terminalia arjuna* is the primary host of _____ silkworm.
(A) Temperate tasar (B) Tropical tasar
(C) Japanese tasar (D) Chinese temperate tasar
- 32) Forced eclosion for mother moth examination is done at
(A) 25°C (B) 28°C
(C) 32°C (D) 35°C

- 33) Generally, the double cocoons are not common in
- (A) Hosa Mysore (B) CSR2
(C) Pure Mysore (D) CSR4
- 34) Bacterial toxicosis in silkworm is caused by bacteria that belong to
- (A) Streptococci sp. (B) Staphylococci sp.
(C) Serratia sp. (D) Bacillus sp.
- 35) Compared to late age silkworm larvae, young age larvae (chawki) require
- (A) Higher temperature and lower relative humidity
(B) Lower temperature and lower relative humidity
(C) Lower temperature and higher relative humidity
(D) Higher temperature and higher relative humidity
- 36) Considering the world silk scenario. India is
- (A) Largest silk producer and the second largest silk consumer
(B) Second largest silk producer and the third largest silk consumer
(C) Second largest silk producer and the largest silk consumer
(D) Second largest silk producer and the second largest silk consumer
- 37) The equipment, 'seriplane' is used for testing the properties of raw silk such as
- a) Evenness b) Cleanness
c) Tenacity d) Size
- Which of the above are correct?
- (A) a and b only (B) b and c only
(C) a, b and c only (D) a, b, c and d

- 38) Regain of raw silk of *Bombyx moryi* is
(A) 10% (B) 11%
(C) 12% (D) 13%
- 39) Natural protein fibre is
(A) Cotton (B) Linen
(C) Wool (D) Nylon
- 40) SMOI refers to
(A) Silk Marketing Organisation of India (B) Silk Mark Organisation of India
(C) Sericulture Mills of India (D) Silk Making of India
- 41) Each standard book contains skeins of
(A) 8 kg (B) 6 kg
(C) 4 kg (D) 2 kg
- 42) Standard conditions for silk conditioning and testing is
(A) 20°C and 65% RH (B) 20°C and 60% RH
(C) 25°C and 60% RH (D) 25°C and 65% RH
- 43) 'Natwa' is commonly employed in reeling of
(A) Muga cocoons (B) Eri cocoons
(C) Mulberry silk cocoons (D) Tasar cocoons
- 44) Peanut shaped cocoons are spun by _____ breeds.
(A) Japanese (B) Chinese
(C) Korean (D) Indian
- 45) Strong peduncle with ring is found in cocoon spun by
(A) Tasar silkworm (B) *B. mandarina*
(C) Muga silkworm (D) Eri silkworm

- 46) Cluster of cocoons floating on water during silk reeling is referred to as
- (A) Balloon (B) Bunch
(C) Rose (D) Group
- 47) The circumference of the standard reel is
- (A) 160 cm (B) 150 cm
(C) 250 cm (D) 200 cm
- 48) Mejankhori silk is obtained from
- (A) Tropical tasar silkworm
(B) Oak tasar silkworm
(C) Muga silkworm
(D) Eri silkworm
- 49) By using multi-end reeling machine for cross breed cocoons it is possible to get silk of
- (A) C grade (B) F grade
(C) A grade (D) B grade
- 50) Silk yarn spun out of tasar cocoon peduncle is called as
- (A) Gicha (B) Katia
(C) Balkal (D) Jhori

PART - B

Answer all the following questions.

[5 × 10 = 50]

- 1) Write on package of practices for mulberry cultivation under rainfed conditions.
- 2) What are the objectives of mulberry breeding? Explain the protocol of polyploidy breeding with flow chart.
- 3) List out the important pests of mulberry with scientific names. Write on period of occurrence, type of damage and symptoms, life-cycle and IPM measures of mulberry leaf-roller.
- 4) Write on three tier seed multiplication programme, norms for maintenance of P_3 , P_2 and P_1 stocks.
- 5) List out the major silkworm diseases. Write on causative agent, symptoms, seasonal occurrence, source and spread of infection, and management measures of nuclear



ಅಭ್ಯರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು

1. ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯ ಜೊತೆಗೆ 50 ಪ್ರಶ್ನೆಗಳನ್ನು ಹೊಂದಿರುವ ಮೊಹರು ಮಾಡಿದ ಪ್ರಶ್ನೆ ಪುಸ್ತಕವನ್ನು ನಿಮಗೆ ನೀಡಲಾಗಿದೆ.
2. ಕೊಟ್ಟಿರುವ ಪ್ರಶ್ನೆ ಪುಸ್ತಕವು, ನೀವು ಪರೀಕ್ಷೆಗೆ ಆಯ್ಕೆ ಮಾಡಿಕೊಂಡಿರುವ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದ್ದೇ ಎಂಬುದನ್ನು ಪರಿಶೀಲಿಸಿರಿ.
3. ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯ ಮೊಹರು ಜಾಗತೆಯಿಂದ ತೆರೆಯಿರಿ ಮತ್ತು ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯಿಂದ ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯನ್ನು ಹೊರಗೆ ತೆಗೆದು, ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಸಾಮಾನ್ಯ ಮಾಹಿತಿಯನ್ನು ತುಂಬಿರಿ. ಕೊಟ್ಟಿರುವ ಸೂಚನೆಯಂತೆ ನೀವು ನಮೂನೆಯಲ್ಲಿನ ವಿವರಗಳನ್ನು ತುಂಬಲು ವಿಫಲರಾದರೆ, ನಿಮ್ಮ ಉತ್ತರ ಹಾಳೆಯ ಮೌಲ್ಯಮಾಪನ ಸಮಯದಲ್ಲಿ ಉಂಟಾಗುವ ಪರಿಣಾಮಗಳಿಗೆ ವೈಯಕ್ತಿಕವಾಗಿ ನೀವೇ ಜವಾಬ್ದಾರರಾಗಿರುತ್ತೀರಿ.
4. ಪರೀಕ್ಷೆಯ ಸಮಯದಲ್ಲಿ:
 - a) ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಯನ್ನು ಜಾಗತೆಯಿಂದ ಓದಿರಿ.
 - b) ಪ್ರತಿ ಪ್ರಶ್ನೆಯ ಕೆಳಗೆ ನೀಡಿರುವ ನಾಲ್ಕು ಲಭ್ಯ ಆಯ್ಕೆಗಳಲ್ಲಿ ಅತ್ಯಂತ ಸರಿಯಾದ/ ಸೂಕ್ತವಾದ ಉತ್ತರವನ್ನು ನಿರ್ಧರಿಸಿ.
 - c) ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯಲ್ಲಿನ ಸಂಬಂಧಿಸಿದ ಪ್ರಶ್ನೆಯ ವೃತ್ತಾಕಾರವನ್ನು ಸಂಪೂರ್ಣವಾಗಿ ತುಂಬಿರಿ. ಉದಾಹರಣೆಗೆ, ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯಲ್ಲಿ ಪ್ರಶ್ನೆ ಸಂಖ್ಯೆ 8ಕ್ಕೆ "C" ಸರಿಯಾದ ಉತ್ತರವಾಗಿದ್ದರೆ, ನೀಲಿ/ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಬಳಸಿ ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯ ಕ್ರಮ ಸಂಖ್ಯೆ 8ರ ಮುಂದೆ ಈ ಕೆಳಗಿನಂತೆ ತುಂಬಿರಿ:
 ಪ್ರಶ್ನೆ ಸಂಖ್ಯೆ 8. Ⓐ Ⓑ ● Ⓓ (ಉದಾಹರಣೆ ಮಾತ್ರ) (ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಮಾತ್ರ ಉಪಯೋಗಿಸಿ)
5. ಉತ್ತರದ ಪೂರ್ವಸಿದ್ಧತೆಯ ಬರವಣಿಗೆಯನ್ನು (ಚಿತ್ತು ಕೆಲಸ) ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯಲ್ಲಿ ಒದಗಿಸಿದ ಖಾಲಿ ಜಾಗದಲ್ಲಿ ಮಾತ್ರವೇ ಮಾಡಬೇಕು (ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಮಾಡಬಾರದು).
6. ಒಂದು ನಿರ್ದಿಷ್ಟ ಪ್ರಶ್ನೆಗೆ ಒಂದಕ್ಕಿಂತ ಹೆಚ್ಚು ವೃತ್ತಾಕಾರವನ್ನು ಗುರುತಿಸಲಾಗಿದ್ದರೆ, ಅಂತಹ ಉತ್ತರವನ್ನು ತಪ್ಪು ಎಂದು ಪರಿಗಣಿಸಲಾಗುತ್ತದೆ ಮತ್ತು ಯಾವುದೇ ಅಂಕವನ್ನು ನೀಡಲಾಗುವುದಿಲ್ಲ. ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯಲ್ಲಿನ ಉದಾಹರಣೆ ನೋಡಿ.
7. ಅಭ್ಯರ್ಥಿ ಮತ್ತು ಕೊಠಡಿ ಮೇಲ್ವಿಚಾರಕರು ನಿರ್ದಿಷ್ಟಪಡಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯ ಮೇಲೆ ಸಹಿ ಮಾಡಬೇಕು.
8. ಅಭ್ಯರ್ಥಿಯು ಪರೀಕ್ಷೆಯ ನಂತರ ಕೊಠಡಿ ಮೇಲ್ವಿಚಾರಕರಿಗೆ ಮೂಲ ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆ ಮತ್ತು ವಿಶ್ವವಿದ್ಯಾನಿಲಯದ ಪ್ರತಿಯನ್ನು ಹಿಂದಿರುಗಿಸಬೇಕು.
9. ಅಭ್ಯರ್ಥಿಯು ಪ್ರಶ್ನೆ ಪುಸ್ತಕವನ್ನು ಮತ್ತು ಓ.ಎಂ.ಆರ್. ಅಭ್ಯರ್ಥಿಯ ಪ್ರತಿಯನ್ನು ತಮ್ಮ ಜೊತೆ ತೆಗೆದುಕೊಂಡು ಹೋಗಬಹುದು.
10. ಕ್ಯಾಲ್ಕುಲೇಟರ್, ಪೇಜರ್ ಮತ್ತು ಮೊಬೈಲ್ ಫೋನ್‌ಗಳನ್ನು ಪರೀಕ್ಷಾ ಕೊಠಡಿಯ ಒಳಗೆ ಅನುಮತಿಸಲಾಗುವುದಿಲ್ಲ.
11. ಅಭ್ಯರ್ಥಿಯು ದುಷ್ಕೃತ್ಯದಲ್ಲಿ ತೊಡಗಿರುವುದು ಕಂಡುಬಂದರೆ, ಅಂತಹ ಅಭ್ಯರ್ಥಿಯನ್ನು ಕೋರ್ಸ್‌ಗೆ ಪರಿಗಣಿಸಲಾಗುವುದಿಲ್ಲ ಮತ್ತು ನಿಯಮಗಳ ಪ್ರಕಾರ ಇಂತಹ ಅಭ್ಯರ್ಥಿಯ ವಿರುದ್ಧ ಕ್ರಮ ಕೈಗೊಳ್ಳಲಾಗುವುದು.
 ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯನ್ನು ತುಂಬಲು ಸೂಚನೆಗಳು
 1. ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೆ ಒಂದೇ ಒಂದು ಅತ್ಯಂತ ಸೂಕ್ತವಾದ/ಸರಿಯಾದ ಉತ್ತರವಿರುತ್ತದೆ.
 2. ಪ್ರತಿ ಪ್ರಶ್ನೆಗೆ ಒಂದು ವೃತ್ತವನ್ನು ಮಾತ್ರ ನೀಲಿ ಅಥವಾ ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ನಿನಿಂದ ಮಾತ್ರ ತುಂಬತಕ್ಕದ್ದು. ಉತ್ತರವನ್ನು ಮಾರ್ಪಡಿಸಲು ಪ್ರಯತ್ನಿಸಬೇಡಿ.
 3. ವೃತ್ತದೊಳಗಿರುವ ಅಕ್ಷರವು ಕಾಣದಿರುವಂತೆ ವೃತ್ತವನ್ನು ಸಂಪೂರ್ಣವಾಗಿ ತುಂಬುವುದು.
 4. ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯಲ್ಲಿ ಯಾವುದೇ ಅನಾವಶ್ಯಕ ಗುರುತುಗಳನ್ನು ಮಾಡಬೇಡಿ.

Note : English version of the instructions is printed on the front cover of this booklet.