

Roll No. ....

Question Booklet Number

O. M. R. Serial No.

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Question Booklet Number
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**M. Sc. (Fourth Semester)**  
**(NEP) EXAMINATION, 2025-26**  
**ZOOLOGY**

**(Applied Entomology) (Elective)**

Paper Code						
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Questions Booklet Series
<b>D</b>

Time : 1:30 Hours ]

[ Maximum Marks : 75

**Instructions to the Examinee :**

1. Do not open the booklet unless you are asked to do so.
2. The booklet contains 100 questions. Examinee is required to answer 75 questions in the OMR Answer-Sheet provided and not in the question booklet. All questions carry equal marks.
3. Examine the Booklet and the OMR Answer-Sheet very carefully before you proceed. Faulty question booklet due to missing or duplicate pages/questions or having any other discrepancy should be got immediately replaced.

**परीक्षार्थियों के लिए निर्देश :**

1. प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाए।
2. प्रश्न-पुस्तिका में 100 प्रश्न हैं। परीक्षार्थी को 75 प्रश्नों को केवल दी गई OMR आन्सर-शीट पर ही हल करना है, प्रश्न-पुस्तिका पर नहीं। सभी प्रश्नों के अंक समान हैं।
3. प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा OMR आन्सर-शीट को सावधानीपूर्वक देख लें। दोषपूर्ण प्रश्न-पुस्तिका जिसमें कुछ भाग छपने से छूट गए हों या प्रश्न एक से अधिक बार छप गए हों या उसमें किसी अन्य प्रकार की कमी हो, तो उसे तुरन्त बदल लें।

(Remaining instructions on the last page)

(शेष निर्देश अन्तिम पृष्ठ पर)

***(Only for Rough Work)***

1. Which one is a molting hormone ?
  - (A) Juvenile hormone
  - (B) Insulin
  - (C) Ecdysone
  - (D) Secretin
  
2. Toxicity classification of pesticide is generally based on :
  - (A) Crop yield
  - (B) LD<sub>50</sub>
  - (C) Half life
  - (D) Colour
  
3. Selective insecticides are preferred because they :
  - (A) Kill all insects
  - (B) Spare beneficial insects
  - (C) Persist longer
  - (D) Increase resistance
  
4. Pyrethroids affect :
  - (A) Digestive system
  - (B) Excretory system
  - (C) Nervous system
  - (D) Reproductive system
  
5. Organophosphates act by inhibiting :
  - (A) Chitin synthesis
  - (B) Acetylcholinesterase
  - (C) DNA replication
  - (D) All of the above
  
6. Quarantine is related to :
  - (A) Crop rotation
  - (B) Biological control
  - (C) Introduction of exotic pests
  - (D) Soil fertility
  
7. Economic Threshold is always .....  
Economic Injury Level.
  - (A) Lower than
  - (B) Higher than
  - (C) Equal to
  - (D) Unrelated to
  
8. A pest which becomes problematic only under certain environmental conditions is called :
  - (A) Major pest
  - (B) Minor pest
  - (C) Occasional pest
  - (D) Key pest
  
9. Sampling in IPM is important for :
  - (A) Estimating pest population density
  - (B) Eliminating predators
  - (C) Applying maximum pesticide
  - (D) Harvest timing

10. Crop rotation reduces pest incidence mainly by :
- (A) Enhancing pest reproduction
  - (B) Breaking life cycle
  - (C) Increasing humidity
  - (D) None of the above
11. Mosquito larva breathes through :
- (A) Gills
  - (B) Tracheae
  - (C) Spiracles
  - (D) Siphon
12. Sandfly transmits :
- (A) *Trypanosoma*
  - (B) *Salmonella*
  - (C) *Leishmania*
  - (D) None of the above
13. Plague is transmitted by :
- (A) Louse
  - (B) Sandfly
  - (C) Rat flea
  - (D) Mosquito
14. Tsetse fly transmits :
- (A) Malaria
  - (B) Sleeping sickness
  - (C) Dengue
  - (D) Plague
15. Vector of filariasis is commonly :
- (A) *Aedes*
  - (B) *Culux*
  - (C) *Musca*
  - (D) *Anopheles*
16. Malaria is transmitted by :
- (A) *Culex*
  - (B) *Anopheles*
  - (C) *Aedes*
  - (D) Sandfly
17. Housefly belongs to genus :
- (A) *Anopheles*
  - (B) *Aedes*
  - (C) *Musca*
  - (D) *Glossina*

18. *Callosobruchus chinensis* infests :
- (A) Pulses
  - (B) Rice
  - (C) Oilseeds
  - (D) Vegetation
19. *Trogoderma granarium* is commonly called as :
- (A) Khapra beetle
  - (B) Pulse beetle
  - (C) Gram pod borer
  - (D) Red flour beetle
20. Fumigation of stored grains is commonly done using :
- (A) Malathion
  - (B) Neem oil
  - (C) Carbonyl
  - (D) Phosphine gas
21. *Sitophilus oryzae* primarily infests :
- (A) Stored pulses
  - (B) Stored cereals
  - (C) Fresh vegetables
  - (D) Cotton bolls
22. Egg parasitoids are preferred because they :
- (A) Attack adults
  - (B) Increase resistance
  - (C) Work before damage starts
  - (D) All of the above
23. Main limitation of biological control is :
- (A) Low cost
  - (B) Slow action
  - (C) Environmental safety
  - (D) Target specificity
24. Microbial pesticides are :
- (A) Non-specific
  - (B) Host specific
  - (C) Highly persistent
  - (D) Chemically synthesized
25. Main advantage of biocontrol agents is :
- (A) Immediate result
  - (B) High toxicity
  - (C) Long-term sustainability
  - (D) Broad spectrum killing

26. Hyperparasitoids :
- (A) Parasitize predators
  - (B) Feed on crops
  - (C) Parasitize other parasitoids
  - (D) Infect plants
27. Mating disruption technique works by :
- (A) Killing larvae
  - (B) Destroying eggs
  - (C) Confusing male insects by pheromones
  - (D) All of the above
28. Predator-prey dynamics is explained by :
- (A) Hardy-Weinberg Law
  - (B) Mendelian inheritance
  - (C) Lotka-Volterra model
  - (D) All of the above
29. Example of Entomopathogenic fungus is :
- (A) *Beauveria bassiana*
  - (B) *E. coli*
  - (C) *Rhizobium*
  - (D) *Aspergillus niger*
30. Mode of infection of Entomopathogenic fungi is :
- (A) Ingestion
  - (B) Water contamination
  - (C) Direct penetration
  - (D) Oviposition
31. Sterile Insect Technique (SIT) is based on :
- (A) Release of sterile males
  - (B) Chemical sterilants
  - (C) Release of predators
  - (D) Hormones
32. Chitin synthesis inhibitors affect :
- (A) Digestive enzymes
  - (B) Cuticle formation
  - (C) Reproductive organs
  - (D) Nervous transmission
33. Baculoviruses are effective against :
- (A) Beetles
  - (B) Dipteran adults
  - (C) Lepidopteran larvae
  - (D) Nymphs
34. Trichogramma is useful against :
- (A) Aphids
  - (B) Insect eggs
  - (C) Mites
  - (D) Nematodes

35. Parasitoids differ from predators because they :
- (A) Depend on a single host for development
  - (B) Feed on plant sap
  - (C) Are always vertebrates
  - (D) Kill multiple hosts
36. Persistent insecticides give rise to the problem of :
- (A) Biomagnification
  - (B) Biodegradation
  - (C) Greenhouse effect
  - (D) Bioremediation
37. Bioinsecticides are :
- (A) Synthetic chemicals
  - (B) Living organisms
  - (C) Heavy metals
  - (D) Petroleum products
38.  $LD_{50}$  refers to :
- (A) Maximum permissible residue
  - (B) Safe dose
  - (C) Half life of pesticide
  - (D) Lethal dose killing 50% of test organisms
39. Major disadvantage of organophosphates is :
- (A) High mammalian toxicity
  - (B) Low toxicity
  - (C) High persistence
  - (D) Slow action
40. Stomach poisons are effective mainly against :
- (A) Soil insects
  - (B) Aquatic insects
  - (C) Sucking insects
  - (D) Chewing insects
41. Malathion is :
- (A) Organochlorine
  - (B) Carbamate
  - (C) Organophosphate
  - (D) Pyrethroids
42. DDT is an example of :
- (A) Pyrethroids
  - (B) Carbamate
  - (C) Organochlorines
  - (D) Organophosphates

43. Overuse of pesticides leads to :
- (A) Increases soil fertility
  - (B) Pest resistance
  - (C) Increased crop yield
  - (D) None of the above
44. Example of Ecofriendly pest control is :
- (A) Chemical control
  - (B) Dusting
  - (C) Fumigation
  - (D) Biological control
45. Which of the following insects has a different feeding mode ?
- (A) Grasshopper
  - (B) Aphid
  - (C) Beetle
  - (D) Caterpillar
46. Secondary pests become serious due to :
- (A) Balanced predator population
  - (B) Pesticide induced elimination of primary pest
  - (C) High rainfall
  - (D) Low temperature
47. Which of the following is a destructive pest ?
- (A) Honeybee
  - (B) Silkworm
  - (C) Skin borer
  - (D) Lady bird beetle
48. Economic Injury Level (EIL) refers to :
- (A) maximum insect population in a crop
  - (B) level of pesticide toxicity
  - (C) minimum pest population causing economic damage
  - (D) stage of crop maturity
49. IPM stands for :
- (A) Internal Pest Method
  - (B) Integrated Pest Management
  - (C) Insect Population Model
  - (D) Insect Protection Mechanism
50. Locust is an example of :
- (A) Social Insect
  - (B) Solitary Insect
  - (C) Migratory Insect
  - (D) Aquatic Insect

51. DDT affects insect's :  
(A) Respiratory system  
(B) Nervous system  
(C) Digestive system  
(D) Excretory system
52. Vector of Dengue is :  
(A) *Culex*  
(B) *Aedes*  
(C) *Anopheles*  
(D) Housefly
53. The insect producing tussar silk is :  
(A) *Bombyx mori*  
(B) *Kerria lacca*  
(C) *Antheraea mylitta*  
(D) *Apis mellifera*
54. Termites mainly feed on :  
(A) Seed  
(B) Leaves  
(C) Wood and Cellulose  
(D) Fruits
55. The main product obtained from lac insect is :  
(A) Silk  
(B) Honey  
(C) Wax  
(D) Resin
56. The mosquito transmits malaria during :  
(A) Egg stage  
(B) Larval stage  
(C) Pupal stage  
(D) Adult stage
57. Rice weevil damages the grain during :  
(A) Flowering stage  
(B) Germination stage  
(C) Storage period  
(D) Transplantation
58. Larval stage of *Spodoptera litura* is commonly called :  
(A) Cut worm  
(B) Army worm  
(C) Boll worm  
(D) Leaf miner
59. Most stored grain pests are included in order :  
(A) Diptera  
(B) Lepidoptera  
(C) Odonata  
(D) Coleoptera

60. Organochlorines interact with :
- (A) Nervous system
  - (B) Chitin synthesis
  - (C) JH secretion
  - (D) ATP production
61. Bt toxin used in pest control is derived from :
- (A) Bacteria
  - (B) Virus
  - (C) Fungi
  - (D) Nematodes
62. The larval stage of mosquito is called :
- (A) Maggot
  - (B) Nymph
  - (C) Caterpillar
  - (D) Wiggler
63. Rice stem borer belongs to order :
- (A) Coleoptera
  - (B) Hemiptera
  - (C) Lepidoptera
  - (D) Diptera
64. *Trichogramma* species are :
- (A) Predators of larvae
  - (B) Pollinators
  - (C) Egg parasitoids
  - (D) Defoliators
65. Contact insecticides act by :
- (A) Inhibiting oviposition
  - (B) Blocking spiracles
  - (C) Disrupting growth hormones
  - (D) Entering through cuticle
66. Active ingredient of Neem based biopesticide is :
- (A) Nicotine
  - (B) Rotenone
  - (C) Azadirachtin
  - (D) Pyrethrin
67. While performing waggle dance, forager bee makes a figure of :
- (A) Three
  - (B) Five
  - (C) Six
  - (D) Eight

68. Which legs of honeybee are adapted for pollen collection ?
- (A) Prothoracic legs  
(B) Mesothoracic legs  
(C) Metathoracic legs  
(D) All of the above
69. Drones in the colony of honeybee are :
- (A) Fertile males  
(B) Sterile males  
(C) Fertile workers  
(D) Sterile workers
70. Largest species of honeybee is :
- (A) *A. dorsata*  
(B) *A. mellifera*  
(C) *A. florea*  
(D) *A. indica*
71. Cantharidin is obtained from :
- (A) Scale insects  
(B) Butterfly  
(C) Blister beetle  
(D) None of the above
72. Silk is produced by :
- (A) Male insect  
(B) Female insect  
(C) Caterpillar  
(D) All of the above
73. Product(s) of Beekeeping is/are :
- (A) Propolis  
(B) Bee pollen  
(C) Honey  
(D) All of the above
74. Antifeedants inhibit :
- (A) Respiration  
(B) Mating  
(C) Locomotion  
(D) Feeding
75. Fumigants are :
- (A) Contact poison  
(B) Stomach poison  
(C) Protoplasmic poison  
(D) Respiration poison
76. Which is popularly known as 'Gundhi Bug' ?
- (A) *Hieroglyphus*  
(B) *Heliothis armigera*  
(C) *Leptocorisa acuta*  
(D) *Leucinodes*

77. Nymphs of *Pyrilla perpusilla* are easily identified due to presence of :
- (A) Large wings
  - (B) Body spots
  - (C) Anal tufts
  - (D) All of the above
78. 'Dead Hearts' is a result of infestation of :
- (A) *Tryporyza nivella*
  - (B) *Pyrilla perpusilla*
  - (C) *Dysdercys koenigii*
  - (D) *Earias vittella*
79. *Pectinophora gossypiella* is a pest of :
- (A) Paddy
  - (B) Cotton
  - (C) Mustard
  - (D) All of the above
80. Pollination in Fig is caused out by :
- (A) Butterfly
  - (B) Bee
  - (C) Wasp
  - (D) Aphids
81. Azadirachtin is isolated from :
- (A) Neem
  - (B) Tulsi
  - (C) Chrysanthemum
  - (D) Giloy
82. Forest Research Institute is situated at :
- (A) New Delhi
  - (B) Dehradun
  - (C) Kolkata
  - (D) Coimbatore
83. Biological control of stored grain pests using parasitoids is limited because :
- (A) Lack of hosts
  - (B) High humidity
  - (C) Closed storage conditions
  - (D) Low oxygen
84. Ecdysone secretion is stimulated by :
- (A) Corpora allata
  - (B) PTTH
  - (C) Brain ganglia
  - (D) None of the above

85. Kairomones benefit :
- (A) The emitter
  - (B) The receiver
  - (C) Both
  - (D) None of the above
86. Semiochemicals used in pest management include :
- (A) Herbicides
  - (B) Pheromones and Kairomones
  - (C) Fungicides
  - (D) Nematicides
87. Diapause in insects is primarily regulated by :
- (A) Soil pH
  - (B) Photoperiod and hormones
  - (C) Rainfall
  - (D) Wind velocity
88. Chronic toxicity :
- (A) causes immediate death
  - (B) is always lethal
  - (C) appears after long term exposure
  - (D) is reversible
89. Density-dependent factors in pest regulation include :
- (A) Temperature
  - (B) Humidity
  - (C) Predation
  - (D) Wind
90. Outbreaks in monoculture are mainly due to :
- (A) Continuous food availability
  - (B) Genetic diversity
  - (C) Predator abundance
  - (D) Soil microbes
91. Knock down effect of pyrethroids results from :
- (A) Sodium channel disruption
  - (B) DNA damage
  - (C) Cuticle degradation
  - (D) Hormone imbalance
92. Host plant resistance mechanisms include :
- (A) Antibiosis
  - (B) Tolerance
  - (C) Antixenosis
  - (D) All of the above

93. K-selected pests are characterized by :
- (A) Stable population near carrying capacity
  - (B) Small body
  - (C) High reproductive rate
  - (D) Short life cycle
94. A univoltine insect completes ..... generation(s) per year.
- (A) One
  - (B) Two
  - (C) Many
  - (D) 3-4
95. Life cycle of butterfly shows ..... metamorphosis.
- (A) No
  - (B) Incomplete
  - (C) Gradual
  - (D) Complete
96. Housefly larva is called :
- (A) Grub
  - (B) Nymph
  - (C) Caterpillar
  - (D) Maggot
97. *Aedes* mosquitoes are characterized by :
- (A) Plain body
  - (B) Striped legs
  - (C) Large size
  - (D) All of the above
98. *Anopheles* larvae rest :
- (A) Parallel to water surface
  - (B) At bottom
  - (C) Perpendicular to surface
  - (D) On soil
99. Ecological advantage of pheromone traps is that they :
- (A) Kill all insects
  - (B) Target specific species
  - (C) Pollute soil
  - (D) Increase resistance
100. Parasitoids mainly belong to order :
- (A) Diptera
  - (B) Hymenoptera
  - (C) Orthoptera
  - (D) Hemiptera

***(Only for Rough Work)***

4. Four alternative answers are mentioned for each question as—A, B, C & D in the booklet. The candidate has to choose the correct answer and mark the same in the OMR Answer-Sheet as per the direction :

**Example :**

**Question :**

Q. 1 (A) ● (C) (D)

Q. 2 (A) (B) ● (D)

Q. 3 (A) ● (C) (D)

Illegible answers with cutting and over-writing or half filled circle will be cancelled.

5. Each question carries equal marks. Marks will be awarded according to the number of correct answers you have.
6. All answers are to be given on OMR Answer Sheet only. Answers given anywhere other than the place specified in the answer sheet will not be considered valid.
7. Before writing anything on the OMR Answer Sheet, all the instructions given in it should be read carefully.
8. After the completion of the examination candidates should leave the examination hall only after providing their OMR Answer Sheet to the invigilator. Candidate can carry their Question Booklet.
9. There will be no negative marking.
10. Rough work, if any, should be done on the blank pages provided for the purpose in the booklet.
11. To bring and use of log-book, calculator, pager and cellular phone in examination hall is prohibited.
12. In case of any difference found in English and Hindi version of the question, the English version of the question will be held authentic.

**Impt. :** On opening the question booklet, first check that all the pages of the question booklet are printed properly. If there is any discrepancy in the question Booklet, then after showing it to the invigilator, get another question Booklet of the same series.

4. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार सम्भावित उत्तर—A, B, C एवं D हैं। परीक्षार्थी को उन चारों विकल्पों में से सही उत्तर छँटना है। उत्तर को OMR आन्सर-शीट में सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है :

**उदाहरण :**

**प्रश्न :**

प्रश्न 1 (A) ● (C) (D)

प्रश्न 2 (A) (B) ● (D)

प्रश्न 3 (A) ● (C) (D)

अपठनीय उत्तर या ऐसे उत्तर जिन्हें काटा या बदला गया है, या गोले में आधा भरकर दिया गया, उन्हें निरस्त कर दिया जाएगा।

5. प्रत्येक प्रश्न के अंक समान हैं। आपके जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
6. सभी उत्तर केवल ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर ही दिये जाने हैं। उत्तर-पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
7. ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाये।
8. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी OMR Answer Sheet उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें। परीक्षार्थी अपने साथ प्रश्न-पुस्तिका ले जा सकते हैं।
9. निगेटिव मार्किंग नहीं है।
10. कोई भी रफ कार्य, प्रश्न-पुस्तिका के अन्त में, रफ-कार्य के लिए दिए खाली पेज पर ही किया जाना चाहिए।
11. परीक्षा-कक्ष में लॉग-बुक, कैलकुलेटर, पेजर तथा सेल्युलर फोन ले जाना तथा उसका उपयोग करना वर्जित है।
12. प्रश्न के हिन्दी एवं अंग्रेजी रूपान्तरण में भिन्नता होने की दशा में प्रश्न का अंग्रेजी रूपान्तरण ही मान्य होगा।

**महत्वपूर्ण :** प्रश्नपुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्न-पुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्षनिरीक्षक को दिखाकर उसी सिरीज की दूसरी प्रश्न-पुस्तिका प्राप्त कर लें।