

Set No. : 1

Question Booklet No.

RET/16/TEST-B

743

Entomology & Ag. Zoology

(To be filled up by the candidate by blue/black ball point pen)

Roll No.

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Roll No. (Write the digits in words) .....

Serial No. of OMR Answer Sheet .....

Day and Date .....

( Signature of Invigilator )

### INSTRUCTIONS TO CANDIDATES

(Use only blue/black ball-point pen in the space above and on both sides of the Answer Sheet)

1. Within 10 minutes of the issue of the Question Booklet, Please ensure that you have got the correct booklet and it contains all the pages in correct sequence and no page/question is missing. In case of faulty Question Booklet, Bring it to the notice of the Superintendent/Invigilators immediately to obtain a fresh Question Booklet.
2. Do not bring any loose paper, written or blank, inside the Examination Hall except the Admit Card without its envelope.
3. A separate Answer Sheet is given. It should not be folded or mutilated. A second Answer Sheet shall not be provided.
4. Write your Roll Number and Serial Number of the Answer Sheet by pen in the space provided above.
5. On the front page of the Answer Sheet, write by pen your Roll Number in the space provided at the top, and by darkening the circles at the bottom. Also, wherever applicable, write the Question Booklet Number and the Set Number in appropriate places.
6. No overwriting is allowed in the entries of Roll No., Question Booklet No. and Set No. (if any) on OMR sheet and Roll No. and OMR sheet no. on the Question Booklet.
7. Any change in the aforesaid entries is to be verified by the invigilator, otherwise it will be taken as unfair means.
8. This Booklet contains 40 multiple choice questions followed by 10 short answer questions. For each MCQ, you are to record the correct option on the Answer Sheet by darkening the appropriate circle in the corresponding row of the Answer Sheet, by pen as mentioned in the guidelines given on the first page of the Answer Sheet. For answering any five short Answer Questions use five Blank pages attached at the end of this Question Booklet.
9. For each question, darken only one circle on the Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.
10. Note that the answer once filled in ink cannot be changed. If you do not wish to attempt a question, leave all the circles in the corresponding row blank (such question will be awarded zero marks).
11. For rough work, use the inner back pages of the title cover and the blank page at the end of this Booklet.
12. Deposit both OMR Answer Sheet and Question Booklet at the end of the Test.
13. You are not permitted to leave the Examination Hall until the end of the Test.
14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment as the University may determine and impose on him/her.

Total No. of Printed Pages : 16

**ROUGH WORK**

**रफ़ कार्य**

## Research Entrance Test-2016

**No. of Questions : 50**

**Time : 2 Hours**

**Full Marks : 200**

- Note:** (1) This Question Booklet contains **40** Multiple Choice Questions followed by **10** Short Answer Questions.
- (2) Attempt as many MCQs as you can. Each MCQ carries **3 (Three)** marks. **1 (One)** mark will be deducted for each incorrect answer. **Zero** mark will be awarded for each unattempted question. If more than one alternative answers of MCQs seem to be approximate to the correct answer, choose the closest one.
- (3) Answer only **5** Short Answer Questions. Each question carries **16 (Sixteen)** marks and should be answered in **150-200** words. Blank **5 (Five)** pages attached with this booklet shall only be used for the purpose. Answer each question on separate page, after writing Question No.

**01.** Where is the International Rice Research Institute located ?

- |            |             |
|------------|-------------|
| (1) Manila | (2) Chicago |
| (3) Cairo  | (4) Cuttack |

**02.** Trypsin is basically what ?

- |                      |             |
|----------------------|-------------|
| (1) Fatty acid       | (2) Sugar   |
| (3) Oligo-nucleotide | (4) Protein |

**03.** GMO stands for what ?

- (1) Genetically Modified Organisms
- (2) Genetically Multiplied Organisms
- (3) Green Modified Organisms
- (4) Green Modified Orange

04. Which international treaty was documented in 1987 and implemented in 1989, to avoid deleterious effects of ultra- violet radiation owing to ozone layer depletion ?
- (1) Cartagene protocal
  - (2) Montreal protocol
  - (3) Geneva protocol
  - (4) Antartica Environmental protocol
05. The tissue bearing dead cells is ?
- (1) Collenchyma
  - (2) Parenchyma
  - (3) Xylem
  - (4) Phellogen
06. Sub-cellular components are separated by means of ?
- (1) Chromatography
  - (2) Autoradiography
  - (3) Electrophoresis
  - (4) Differential and density gradient centrifugation
07. Which these is a vertebrate animal ?
- (1) Prawn
  - (2) Snake
  - (3) Mosquito
  - (4) Octopus
08. Which of these is not a  $C_4$  plant ?
- (1) Maize
  - (2) Rice
  - (3) Sorghum
  - (4) Sugarcane
09. Cell theory was first formulated by ?
- (1) Schleiden and Schwann
  - (2) Rudolf Vrichow
  - (3) A.V. Leeuwenhock
  - (4) Ruth Sagar

10. Apple is a ?  
(1) True fruit  
(2) False fruit  
(3) Vegetable  
(4) Parthenocarpic fruit
11. Bunchy top of sugarcane is formed by :-  
(1) *Chilo auricilius*  
(2) *Melananopsis glomerata*  
(3) *Scirpophaga excerptalis*  
(4) *Chilo infuscatellus*
12. Honey bee venom contains :-  
(1) Kinins  
(2) Mellitinin  
(3) Sclerotin  
(4) Arthropodin
13. A novel chitin synthesis inhibitor affecting specifically the whiteflies, plant hoppers and scale insect is :-  
(1) Buprofezin  
(2) Dimilin  
(3) Novaluron  
(4) Flucyclouron
14. Androconia found in wings of certain insects are :-  
(1) Bristles  
(2) Specialized glands  
(3) Spots  
(4) Specialized scales
15. Antennae are innervated by :-  
(1) Tritocerebrum  
(2) Protocerebral  
(3) Protocerebrum  
(4) Deutoceraebrum
16. Directed response shown by an animal in response to touch or contact with solid is called :-  
(1) Thigmotaxis  
(2) Anemotaxis  
(3) Chemotaxis  
(4) Phototaxis

17. Which energy is utilized for making fog, smoke and vapour spray :-  
(1) Centrifugal (2) Thermal  
(3) Gaseous (4) Hydraulic
18. Situation where a pest population after having been suppressed rebounds to numbers greater than that before suppression had occurred is called as :-  
(1) Secondary pest outbreak (2) Pest epidemic  
(3) Pest replacement (4) Pest resurgence
19. The predominant sugar in insect haemolymph is :-  
(1) Glucose (2) Glycogen  
(3) Trehalose (4) Fructose
20. Indian institute of Ecology and Environment is located at :-  
(1) Patna (2) Lucknow  
(3) New Delhi (4) Kolkatta
21. X-Ray method for detection of internal infestation of insect in grain was described by :-  
(1) White et al. (2) Howe and Oxley  
(3) Milner et al. (4) Dennis and Decker
22. The microbes, mostly fungi and sometimes bacteria, that grow entirely within the plant body, inter or intra cellular and spend all or nearly all their life cycle in the host are called :-  
(1) Antibiotics (2) Biotypes  
(3) Parasite (4) Endophytes
23. The "Destructive Insect and Pest Act 1914" was passed on :-  
(1) 3<sup>rd</sup> February (2) 3<sup>rd</sup> March  
(3) 3<sup>rd</sup> April (4) 3<sup>rd</sup> May

24. Who is the father of host plant resistance ?  
(1) V.B. Wigglesworth (2) R.H. Painter  
(3) R.L. Patton (4) Paul DeBach
25. The specific position of a species within a community including utilization of resources both in qualitative and quantitative terms is referred to as :-  
(1) Niche (2) Biome  
(3) Habitat (4) Ecotome
26. The mango variety resistant to fruit fly, *Bactrocera dorsalis* is :-  
(1) Kesar (2) Langra  
(3) Dasheri (4) Alphonso
27. The scientific name of House Rat :-  
(1) *Bandicota indica* (2) *Rattus rattus*  
(3) *Tatera indica* (4) *Bandicota bengalensis*
28. Loopers belong to family :-  
(1) Geometridae (2) Lycaenidae  
(3) Plutellidae (4) Gelechiidae
29. The first instar nymphs of odonata are referred to as :-  
(1) Protonymph (2) Pronymph  
(3) Pseudergate (4) Pseudonymph
30. Resistance in cotton to jassid is :-  
(1) Monogenic (2) Polygenic  
(3) Oligogenic (4) Cross resistance

31. Which one of the following is the first genetically modified plant ?  
(1) Bt tobacco against *Manduca sexta*  
(2) Bt cotton against *Helicoverpa*  
(3) Bt potato against *Leptinotarsa*  
(4) Bt maize against *Ostrinia*
32. Which one of the following is a mite active pyrethroid ?  
(1) Tefluthrin (2) Etofenprox  
(3) Fluvalinate (4) Decamethrin
33. The act of reproduction by a larva that has not achieved physical maturity is termed as :-  
(1) Parthenogenesis (2) Polyembryony  
(3) Paedogenesis (4) Viviparity
34. In the silkworm larvae, silk is produced from :-  
(1) Mandibular glands (2) Maxillary glands  
(3) Endocrine glands (4) Labial glands
35. The specific position occupied by each species within the community is designated as :-  
(1) Ecosystem (2) Biome  
(3) Habitat (4) Niche
36. Biomagnification of pesticides is highest in :-  
(1) Terminal level (2) Lower level  
(3) Middle level (4) All levels
37. Enamectin belongs to the group of :-  
(1) Evermectins (2) Pyrethroid  
(3) Avermectins (4) Nicotinoids

38. Larval and adult diapauses are regulated by :-  
(1) Juvenile hormone (2) Prothoracotropic hormone  
(3) Ecdysone (4) Bursicon
39. Presence of more than one species of parasitoid in the same host is referred to as :-  
(1) Superparasitism (2) Hyperparasitism  
(3) Endoparasitism (4) Multiparasitism
40. Semi ripe fruit drop of mango with decayed spots on the fruits is a characteristic feature of :-  
(1) *Orthaga exvinacea* (2) *Bactrocera dorsalis*  
(3) *Parasa lepida* (4) *Stemochetus mangiferae*

### ***Short Answer Questions***

**Note:** Attempt any **five** questions. Write answer in **150-200** words. Each question carries **16** marks. Answer each question on separate page, after writing Question Number.

1. What is an insect vector ? Give the categories of vectors based on mode transmission.
2. Enlist the major insect pests of pulses and discuss about the nature of Damage, life cycle and eco-friendly management of gram pod borer.
3. Outline the strategies for effective implementation of Integrated Pest Management.
4. Discuss the role of biotic and abiotic factor in distribution and abundance of insects.
5. Discuss the mechanism of plant resistance to insects.
6. Describe the management practices of golden nematode of potato.
7. Explain the classical biological control with the help of at least three examples.
8. Describe the mode of action of organophosphates and carbamates.
9. Describe about the respiratory system of insects.
10. Describe the management of *Rhinoceros* beetle.

**Question No.**

**प्रश्न संख्या**

**Page for Short Answer**

**लघु उत्तरीय के लिए पृष्ठ**

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Question No.

Page for Short Answer

प्रश्न संख्या

लघु उत्तरीय के लिए पृष्ठ

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## अभ्यर्थियों के लिए निर्देश

(इस पुस्तिका के प्रथम आवरण पृष्ठ पर तथा उत्तर-पत्र के दोनों पृष्ठों पर केवल नीली-काली बाल-प्वाइंट पेन से ही लिखें)

1. प्रश्न पुस्तिका मिलने के 10 मिनट के अन्दर ही देख लें कि प्रश्नपत्र में सभी पृष्ठ मौजूद हैं और कोई प्रश्न छूटा नहीं है। पुस्तिका दोषयुक्त पाये जाने पर इसकी सूचना तत्काल कक्ष-निरीक्षक को देकर सम्पूर्ण प्रश्नपत्र की दूसरी पुस्तिका प्राप्त कर लें।
2. परीक्षा भवन में लिफाफा रहित प्रवेश-पत्र के अतिरिक्त, लिखा या सादा कोई भी खुला कागज साथ में न लायें।
3. उत्तर-पत्र अलग से दिया गया है। इसे न तो मोड़ें और न ही विकृत करें। दूसरा उत्तर-पत्र नहीं दिया जायेगा। केवल उत्तर-पत्र का ही मूल्यांकन किया जायेगा।
4. अपना अनुक्रमांक तथा उत्तर-पत्र का क्रमांक प्रथम आवरण-पृष्ठ पर पेन से निर्धारित स्थान पर लिखें।
5. उत्तर-पत्र के प्रथम पृष्ठ पर पेन से अपना अनुक्रमांक निर्धारित स्थान पर लिखें तथा नीचे दिये वृत्तों को गाढ़ा कर दें। जहाँ-जहाँ आवश्यक हो वहाँ प्रश्न-पुस्तिका का क्रमांक तथा सेट का नम्बर उचित स्थानों पर लिखें।
6. ओ० एम० आर० पत्र पर अनुक्रमांक संख्या, प्रश्नपुस्तिका संख्या व सेट संख्या (यदि कोई हो) तथा प्रश्नपुस्तिका पर अनुक्रमांक और ओ० एम० आर० पत्र संख्या की प्रविष्टियों में उपरिलेखन की अनुमति नहीं है।
7. उपर्युक्त प्रविष्टियों में कोई भी परिवर्तन कक्ष निरीक्षक द्वारा प्रमाणित होना चाहिये अन्यथा यह एक अनुचित साधन का प्रयोग माना जायेगा।
8. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार वैकल्पिक उत्तर दिये गये हैं। प्रत्येक प्रश्न के वैकल्पिक उत्तर के लिए आपको उत्तर-पत्र की सम्बन्धित पंक्ति के सामने दिये गये वृत्त को उत्तर-पत्र के प्रथम पृष्ठ पर दिये गये निर्देशों के अनुसार पेन से गाढ़ा करना है।
9. प्रत्येक प्रश्न के उत्तर के लिए केवल एक ही वृत्त को गाढ़ा करें। एक से अधिक वृत्तों को गाढ़ा करने पर अथवा एक वृत्त को अपूर्ण भरने पर वह उत्तर गलत माना जायेगा।
10. ध्यान दें कि एक बार स्याही द्वारा अंकित उत्तर बदला नहीं जा सकता है। यदि आप किसी प्रश्न का उत्तर नहीं देना चाहते हैं, तो संबंधित पंक्ति के सामने दिये गये सभी वृत्तों को खाली छोड़ दें। ऐसे प्रश्नों पर शून्य अंक दिये जायेंगे।
11. रफ कार्य के लिए प्रश्न-पुस्तिका के मुखपृष्ठ के अंदर वाला पृष्ठ तथा उत्तर-पुस्तिका के अंतिम पृष्ठ का प्रयोग करें।
12. परीक्षा के उपरान्त केवल ओ एम आर उत्तर-पत्र परीक्षा भवन में जमा कर दें।
13. परीक्षा समाप्त होने से पहले परीक्षा भवन से बाहर जाने की अनुमति नहीं होगी।
14. यदि कोई अभ्यर्थी परीक्षा में अनुचित साधनों का प्रयोग करता है, तो वह विश्वविद्यालय द्वारा निर्धारित दंड का/की, भागी होगा/होगी।