

Question Booklet No.

(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 changes 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 page 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.

FOR ROUGH WORK

Research Entrance Test – 2013

No. of Questions : 50

Time : 2 Hours

Full Marks : 200

Note : (i) This Questions Booklet contains 40 Multiple Choice Questions followed by 10 Short Answer Questions.

(ii) 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.

(iii) 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.

1. One Horse Power (HP) is expressed in term of watt which is
 (1) 720 (2) 786 (3) 746 (4) None of these
2. Number of segments present in insect head is :
 (1) Two (2) Four (3) Six (4) Seven
3. Deficiency symptom of sulphur first appears an :
 (1) Younger leaves (2) Older leaves
 (3) Middle leaves (4) None of these
4. Protein content in lentil is :
 (1) 18% (2) 25% (3) 16% (4) 20%
5. Demonstration showing how to do things is called
 (1) Method demonstration (2) Result demonstration
 (3) Training (4) Frontline demonstration
6. Dithane M-45 is a :
 (1) Bactericide (2) Insecticide (3) Fungicide (4) Nematicide
7. Jamunapari is a breed of :
 (1) Cow (2) Goat
 (3) Buffalo (4) None of the above
8. Select the correct formula of urea
 (1) $H_2NCO_2NH_2$ (2) $HNCONH$ (3) H_2NCONH_2 (4) H_4NCONH_4
9. The measure of central tendency is
 (1) Median (2) Mode
 (3) Mean (4) All of the above
10. On which of the following plant Gregor Mendal perform his classical experiment ?
 (1) Gram (2) Maize (3) Pea (4) Rice

11. 'Tikka' disease is associated with :

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|--------------------|--------------------|
| (1) Wheat crop | (2) Tobacco crop |
| (3) Groundnut crop | (4) Sugarcane crop |

12. A chromosome which differs either in number or in morphology between male and female of a species is known as :

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|--------------------------|---------------------------|
| (1) Autosome | (2) Sex chromosome |
| (3) Accessory chromosome | (4) Homologous chromosome |

13. Cucurbits in early stage are mainly damaged by :

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|------------|------------------------|
| (1) Aphids | (2) Jassids |
| (3) Borers | (4) Red pumpkin beetle |

14. *Heliothis armigera* is :

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|-----------------|------------------|
| (1) Monophagous | (2) Oligophagous |
| (3) Polyphagous | (4) Saprophyte |

15. Highest milk production dairy breed of India is :

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|-------------|-------------|------------|----------------|
| (1) Haryana | (2) Sahiwal | (3) Ongole | (4) Tharparkan |
|-------------|-------------|------------|----------------|

16. Indian economy is concerned with :

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|------------------|-------------------|
| (1) Capitalistic | (2) Socialistic |
| (3) Mixed | (4) Communalistic |

17. Mendel's law of inheritance operate during :

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|-------------------------|-------------------|
| (1) Mitosis | (2) Meiosis |
| (3) Plant gametogenesis | (4) Fertilization |

18. Largest soil group in India is :
(1) Deserts soils (2) Alluvial soils (3) Black cotton (4) Pod sols
19. One molecule of glucose on complete oxidation yields :
(1) 30 ATP (2) 32 ATP (3) 36 ATP (4) 38 ATP
20. Principle of Extension Education is :
(1) Learning by hearing (2) Learning by seeing
(3) Learning by reading (4) Learning by doing
21. Who for the first time studied Indian insect type :
(1) Linnaeus (2) Koenig (3) Fabricius (4) Lefory
22. The International Code of Zoological Nomenclature consists :
(1) 57 articles (2) 67 articles (3) 77 articles (4) 87 articles
23. Most of the insects have abdominal segments :
(1) 6 to 7 (2) 8 to 9 (3) 10 to 11 (4) 12 to 13
24. The density of pest population at which control measures should be applied :
(1) GEL (2) PBL (3) EIL (4) ETL
25. Which of the fly is pest of cotton :
(1) Fruit fly (2) White fly (3) Stem fly (4) Saw fly
26. Which of the following is pest of apple :
(1) *Sylepta lunalis* (2) *Nodostoma subcostalum*
(3) *Cydia hemidoxa* (4) *Erisoma lanigerum*

27. Which of the following insects are migratory in nature :
- (1) White grubs (2) Mealy bugs
(3) Locusts (4) Red pumpkin beetles
28. The basis of antibiosis in corn against European Corn Borer is :
- (1) Nutritional imbalance
(2) Presence of growth inhibitors MBOA and DIMBOA
(3) Presence of toxins
(4) Nutrition deficiency
29. A typical 'Hopper burn' in rice is caused by feeding of :
- (1) Aphids (2) Gundhi bug
(3) Brown plant hopper (4) Mites
30. *Aphelinus mali* has been a successful parasite in controlling :
- (1) Tobacco caterpillar (2) Apple woolly aphis
(3) Maize stem borer (4) Sugarcane top borer
31. *Bacillus thurigiensis* is most effective at pH :
- (1) 3 to 6 (2) 9 to 10
(3) 11 to 14 (4) all of the above
32. Giving complete coverage to one hectare of crop by spraying 60 to 250 litres of liquid is known as :
- (1) Low volume spray (2) Very low volume spray
(3) Medium volume spray (4) High volume spray

33. If equilibrium population level of a crop damaging insect is above the economic injury level, it is a :
- (1) Potential pest (2) Not a pest
(3) Sporadic pest (4) Regular pest
34. In which of the following insect the spiracles are absent :
- (1) Cecidomyid larvae (2) Chironomid larvae
(3) Mycetophilid larvae (4) Psycodid larvae
35. Johnston's organ is located in most of pterygote insects in :
- (1) Second antennal segment (2) Legs
(3) Wing (4) Maxilla
36. Out of the following poisons which works as an anticoagulant for the control of rats :
- (1) Zinc phosphide (2) Strychmine
(3) Warfarin (4) Parathion
37. Peritrophic membrane is absent in :
- (1) Orthoptera (2) Isoptera (3) Coleoptera (4) Hemiptera
38. Piercing and sucking type of mouth parts are found in :
- (1) Grass hopper (2) House fly (3) Aphids (4) Beetles
39. *Rodolia cardinalis* has been successful in controlling :
- (1) Apple woolly aphid (2) Cottony cushion scale
(3) Sugarcane shoot borer (4) Pink boll worm
40. The legless young of a housefly is known as :
- (1) Caterpillar (2) Maggot (3) Nymph (4) Grub

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. Describe the different kind of mouth parts and antennae found in insects.
2. Classify the insecticides based on mode of entry and, mode of action.
3. What is Integrated Pest Management and describe the cultural and mechanical tools of pest management.
4. Define the term biological control and describe the augmentation technique of biological control.
5. Define the term toxicology and describe the mode of action of pyrethroids & neonicotinoids.
6. What is host plant resistance ? Describe the various mechanisms of plant resistance.
7. Write in brief the nature of damage and management of following insect pests
 - (a) White grubs
 - (b) *Helicoverpa armigera* on pulses
8. Write short notes on :
 - (a) Peritrophic membrane
 - (b) Cryptonephridial system
9. Describe the role of biotechnology in Insect Pest Management.
10. Write the common & scientific names of three phytophagous mites and describe the management of phytophagous mites in general.

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FOR ROUGH WORK

