

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.

Total No. of Printed Pages : 15

FOR ROUGH WORK

Research Entrance Test – 2013

No. of Questions : 50

Time : 2 Hours

Full Marks : 200

Note : (i) This Question 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. The micronutrient involved in chlorophyll formation is :
 (1) Zinc (2) Iron (3) Copper (4) Molybdenum
12. Most commonly and widely cultivated pulse in India is :
 (1) Lentil (2) Redgram (3) Peas (4) Gram
13. Name the country which is pioneer in hybrid rice production is :
 (1) India (2) China (3) Philippines (4) Japan
14. The journal 'Weed Research's is published by :
 (1) Weed science society of America
 (2) European weed research society
 (3) Indian society of weed science
 (4) Australian society of weed science
15. The transgene present in glufosinate resistance maize is :
 (1) bar gene (2) bacterial nitrilase
 (3) CP 4 EPSPS (4) GA21EPSPS
16. The first confirmed case of herbicide resistance in world is reported in the following weed :
 (1) Thatch grass (2) Canary grass
 (3) Common groundsel (4) Witch weed
17. Which of the following is *not* a herbicide safener ?
 (1) Cyometrinil (2) Flurazole (3) Oxabetrinil (4) EPTC
18. *Striga asiatica* is a root parasite weed on :
 (1) Wheat (2) Pea (3) Sorghum (4) Cotton
19. Which one of the following is a C₄ weed ?
 (1) Water hyacinth (2) Common lambsquarter
 (3) Bermuda grass (4) Yellow Nut sedge

20. At field capacity :
- (1) All the macropores and micropores are filled with water
 - (2) All macropores and micropores are filled with air
 - (3) All macropores are filled with air and micropores filled with water
 - (4) All macropores are filled with water and micropores filled with air
21. The soil water in terms of reducing availability is in the sequence of :
- (1) Field capacity, hygroscopic water, permanent wilting point, ultimate wilting point
 - (2) Field capacity, permanent wilting point, hygroscopic water, ultimate wilting point
 - (3) Field capacity, ultimate wilting point, hygroscopic water, permanent wilting point
 - (4) Permanent wilting point, hygroscopic water, ultimate wilting point, field capacity
22. The process of gradually drying a saturated soil sample by applying increasing suction and recording successive measurement of water content is termed as :
- (1) Desorption
 - (2) Hysteresis
 - (3) Sorption
 - (4) Suction potential
23. If a crop is to be irrigated at 0.75 IW/CPE ratio with 60 mm depth, it should be irrigated :
- (1) 60mm CPE
 - (2) 80 mm CPE
 - (3) 70 mm CPE
 - (4) 75 mm CPE
24. A soil having 30 cm/m water content on volumetric basis with a sampling depth of 40 cm will have water depth of :
- (1) 10 cm
 - (2) 12 cm
 - (3) 22 cm
 - (4) 133 cm
25. The irrigation method in which intermittent application of water to field surface under gravity flow is practiced :
- (1) Surge
 - (2) Checkbasin
 - (3) Sprinkler
 - (4) Flooding

26. The ratio between the water stored in the root zone and the amount of water needed in the root zone prior to the irrigation is :

- (1) Water conveyance efficiency
- (2) Water storage efficiency
- (3) Water application efficiency
- (4) Water use efficiency

27. In waterlogged soil ammonia volatilization takes place where :

- (1) pH is high
- (2) Temperature and pH both are high
- (3) CEC is low
- (4) High pH, high temp, low CEC exist

28. Following are the acid forming nitrogenous fertilizers :

- (1) Urea, Ammonium Chloride, Ammonium sulphate
- (2) Ammonium chloride, Ammonium sulphate nitrate, CAN
- (3) Ammonium chloride, Anhydrous ammonia, Ammonium sulphate
- (4) CAN, Nitrophosphate , Ammonium nitrate

29. Grey speck disease in oat is caused by :

- (1) Fe deficiency
- (2) Excess Mg
- (3) Mn deficiency
- (4) Excess Zn

30. Conditioners are materials which are added to fertilizer mixtures for :

- (1) reducing hygroscopicity
- (2) improving physical condition
- (3) making up weight and improving physical condition
- (4) both (1) & (2)

31. An experiment on rice is to be laid out with 6 N doses which are to be repeated 6 times. Calculate the error degree of freedom (df) in ANOVA if it is to be laid out in CRD, RCBD, LSD :

- (1) 30,25,27
- (2) 30,25,20
- (3) 25, 21, 20
- (4) 20,25,30

32. Coefficient of variation (cv) is calculated by the following formula :

(1) $\frac{\text{Error MS}}{\text{Grand mean}} \times 100$

(2) $\frac{2 \text{ Error MS}}{\text{Grand mean}} \times 100$

(3) $\frac{\text{Error MS}}{\text{Grand total}} \times 100$

(4) $\frac{2 \text{ Error MS}}{\text{Grand total}} \times 100$

33. Simple linear correlation coefficient value of 0.9 means ___ % of the variation in the variable Y can be explained by the linear function of variable X.

- (1) 81 (2) 90 (3) 9 (4) 99

34. A field trial was laid out with 4 factors – each having 4 levels and replicated 4 times. The main objective of the trial was to study the interaction effect with greater emphasis. Suggest the suitable design from the following :

- (1) Split plot design (2) Strip plot design
(3) Factorial experimental in RCBD (4) Split-split plot design

35. In reduction reaction cycle of soil under waterlogged condition the minerals which are reduced first are :

- (1) Nitrate and Manganese dioxide
(2) Manganese dioxide and Ferric oxide
(3) Ferric oxide
(4) Sulphate

36. In India pigeonpea ranks..... among pulse crops :

- (1) First (2) Second (3) Third (4) Fourth

37. The main objective of puddling in rice :

- (1) To reduce nutrient losses (2) To reduce water requirement
(3) To reduce percolation losses (4) To increase water use efficiency

38. The term 'luxury consumption' is associated with the nutrition of :
(1) Nitrogen (2) Phosphorus (3) Potassium (4) Sulphur
39. The efficiency of applied phosphatic fertilizers normally ranges between :
(1) 5-10% (2) 10-15% (3) 15-20% (4) 20-25%
40. Which of the following crops responds best to 'S' nutrition :
(1) Rice (2) Wheat (3) Gram (4) Mustard

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. Give a brief account of the low carbon technologies developed in the context of rice-wheat cropping system in India.
2. What is a global warming ? Write briefly about the contribution of agriculture in global warming.
3. What is water productivity ? Suggest appropriate agro-techniques for enhancing water productivity under moisture stress environments.
4. Define watershed. Explain the factors and steps involved in watershed management.
5. What do you understand by Integrated Weed Management ? Describe the weed management practices for rice-wheat sequences.
6. Discuss the mechanism of herbicide resistance in weeds. Suggest the practices to prevent resistance development in weeds.
7. Discuss briefly the losses of applied nitrogen from soil under waterlogged condition.
8. What are the water saving crop establishment methods in rice production. Discuss in brief package of practices for any one of them.
9. Define organic farming. Discuss its constraints and future prospects in Indian agriculture.
10. What are the common sources of phosphatic fertilizers ? Describe efficient use of these sources to enhance the 'P' use efficiency.

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FOR ROUGH WORK

