

Set No. : 1

Question Booklet No.

RET/16/TEST-B

741

Agronomy

(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 protocol
 - (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. The annual average precipitation of India is about :
(1) 15 cm (2) 90 cm (3) 125 cm (4) 150 cm
12. Soil water potential at permanent wilting point is :
(1) -0.1 to 0.3 bar (2) -15 bar
(3) -33 bar (4) -60 bar
13. World Water Day is celebrated every year on :
(1) January 22 (2) February 22
(3) March 22 (4) April 22
14. Minor irrigation project area is :
(1) <2000 ha (2) 2000-10000 ha
(3) >2000 ha (4) 10000-20000 ha
15. Water requirement is equal to :
(1) IR+S (2) IR+ER+S
(3) ER+S (4) ER+S+T
16. Which is used as antidote for herbicides ?
(1) Pronamid (2) Methazole
(3) Dichlormid (4) Buthidazole
17. *Telenemia scrupulosa* is used to control :
(1) Water hyacinth (2) Alligator weed
(3) Ipomoea (4) Lantana
18. Quantitative herbicide resistance is development due to :
(1) Repeated use of suboptimal rate of herbicide
(2) First time use of new herbicide
(3) Repeated use of high rate of herbicide
(4) Herbicide drift

19. Which is a binding site for photosystem II inhibiting herbicides ?
- (1) H1 of photosynthesis (2) D1 of photosynthesis
(3) D2 of photosynthesis (4) H2 of photosynthesis
20. The tolerance of maize to Atrazine is due to the presence of enzyme :
- (1) Arylaclymidase (2) Glutathione-S-transferase
(3) Amide dehydrolase (4) Nitrogenase
21. First herbicide resistance in India was reported against :
- (1) Pendimethalin (2) 2, 4-D
(3) Isoproturon (4) Clodinafop
22. Which nutrient is related to the term luxury consumption :
- (1) P (2) Ca (3) K (4) Mn
23. Essential nutrient element responsible for pollen development is :
- (1) Mn (2) K (3) B (4) Mg
24. Optimum temperature required for jute retting is :
- (1) 28°C (2) 38°C (3) 34°C (4) 36°C
25. Indian Institute of Pulse Research is situated at :
- (1) Varanasi (2) Lucknow
(3) Kanpur (4) New Delhi

26. Which one of the following is known as 'pop corn' ?
(1) *Zea mays inaurata* (2) *Zea mays indentata*
(3) *Zea mays everta* (4) *Zea mays saccharata*
27. The carbohydrates synthesized in the leaves are transported through sieve tubes most commonly in the form of :
(1) Glucose (2) Sucrose
(3) Triose sugar (4) Soluble starch
28. The water potential of pure water at atmospheric pressure is :
(1) -2.3 bar (2) +2.3 bar
(3) Zero bar (4) One bar
29. Seed dormancy is determined by the ratio of :
(1) Auxin to GA (2) Cytokinin to GA
(3) Ethylene to GA (4) ABA to GA
30. The test between two population variance is done by :
(1) Arithmetic mean (2) F-test
(3) t-test (4) z-test
31. ANOVA was given by :
(1) Karl Person (2) Horce secrist
(3) A L Bowley (4) R A Fisher
32. Pressure plate apparatus is used for measurement of soil moisture tension up to :
(1) 4.2 bar (2) 0.33 bar
(3) 80 bar (4) 15 bar

33. Surface soils of water logged puddle paddy field usually have :
- (1) Massive type structure (2) Crumby structure
 - (3) Granular structure (4) No structure
34. Structural management of coarse texture neutral soil is done by the application of :
- (1) Soil amendment (2) Organic matter
 - (3) Fertilizer (4) Surface mulch
35. The particle density of organic matter is in the range of :
- (1) 0.5 to 1 mg/m³ (2) 1.1 to 1.5 mg/m³
 - (3) 1.5 to 1.8 mg/m³ (4) 2.4 to 2.7 mg/m³
36. In acid soils, the breakdown of protein is initiated by :
- (1) Fungi (2) Bacteria
 - (3) Actinomycetes (4) Algal
37. Which of the following nutrient element is not suitable for fertigation ?
- (1) Nitrogen (2) Phosphorus
 - (3) Potassium (4) Sulphur
38. Placement of phosphatic fertilizers near root is recommended because :
- (1) Phosphorus has great tendency to get fixed
 - (2) Surface applied "P" may volatilize
 - (3) Phosphorus is immobile in soil
 - (4) Surface applied 'P' promotes weed growth
39. The unit of farming system is :
- (1) Farm household (2) Productivity
 - (3) Profitability (4) B:C ratio

60. The germination of lower $1/3^{\text{rd}}$ part of the sugarcane can be improved by :

- | | |
|--------------------------|-------------------------|
| (1) ABA treatment | (2) IAA treatment |
| (3) Cold water treatment | (4) Hot water treatment |

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. Define "Acrobic rice". How does it differ from upland direct seeded rice ?
2. Define "SRI" in rice. How higher are possible in rice with younger seedling and wider spacing ?
3. What do you mean by bio-drainage ?
4. What do you mean by water budgeting ? Discuss why it is not practiced in India ?
5. Justify the role of sprinkler irrigation in water logged areas with suitable example.
6. What do you mean by herbicide persistence ? Discuss the factors affecting herbicide persistence in soil.
7. What is bio-herbicide ? Explain with examples the use of bio-herbicides in weed management.
8. (a) Differentiate between soil fertility and soil productivity.
(b) Enumerate the factors affecting soil fertility and discuss the role of soil texture in regulating soil fertility.
9. Briefly discuss the importance of "Integrated Farming System" under present agricultural scenario of the country.
10. What is green house effect ? Briefly describe the effect of climate change on Indian Agriculture.

Question No.

Page for Short Answer

प्रश्न संख्या

लघु उत्तरीय के लिए पृष्ठ

Question No.

Page for Short Answer

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प्रश्न संख्या

लघु उत्तरीय के लिए पृष्ठ

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।