

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 30 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 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.

[उपर्युक्त निर्देश हिन्दी में अन्तिम आदरण-पृष्ठ पर दिये गये हैं ।]

Total No. of Printed Pages : 16

SEAL

Research Entrance Test – 2018

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. Which of the following is referred as Buffalo grass ?
(1) Para grass (2) Napier grass (3) Setaria grass (4) Guinea grass
2. Who is known as "Father of White Revolution in India" ?
(1) Dr. M. S. Swaminathan (2) Dr. J. J. Chinoy
(3) Dr. R. S. Paroda (4) Dr. Verghese Kurien
3. A character which is expressed in hybrid is called :
(1) Epistatic (2) Co-dominant (3) Dominant (4) Recessive
4. First antibiotic isolated was :
(1) Neomycin (2) Streptomycin (3) Terramycin (4) Penicillin
5. Mycorrhiza is the :
(1) Parasitic association between fungus and roots of seed plants
(2) Symbiotic association between fungus and roots of seed plants
(3) Saprophytic association between fungus and roots of seed plants
(4) Symbiotic association between bacteria and the roots of seed plants
6. Growing of complete plant from a cell is known as :
(1) Totipotency (2) Axenic culture
(3) Clone formation (4) Micro propagation
7. Clay soil particle size is :
(1) Less than 0.002 mm (2) Between 0.002-0.02 mm
(3) Between 0.02-0.2 mm (4) More than 2 mm
8. Which bacteria is useful for "Dairy Industry" ?
(1) *Clostridium acetobutyricum* (2) *Bacillus megatherium*
(3) *Acetobacteria aceti* (4) *Bacterium acidi lactic*
9. The silkworm *Bombyx mori* is fed on :
(1) Rose leaves (2) Mulberry leaves
(3) Hibiscus leaves (4) *Gladiolus* leaves
10. Sansad Adarsh Gram Yojana (SAANJHI) was launched on :
(1) November, 2005 (2) January, 2010
(3) October, 2014 (4) March, 2017

11. Which of the following is not a factor affecting CEC ?
- | | |
|--------------------|--------------------------|
| (1) Type of clay | (2) Organic matter |
| (3) Soil structure | (4) Soil texture content |
12. What is the order of the six master horizons found in the soil from top to bottom ?
- | | |
|-----------------|-----------------|
| (1) O,E,t,A,p,C | (2) A,B,C,E,O,R |
| (3) O,A,B,E,C,R | (4) O,A,E,B,C,R |
13. Identify the correct sequence of moisture regimes from driest to wettest :
- | | |
|-------------------------|-------------------------|
| (1) udic, aquic, aridic | (2) aquic, udic, aridic |
| (3) xeric, udic, aquic | (4) udic, xenic, aquic |
14. E/B is called :
- (1) Combination horizon
 - (2) Transitional horizon
 - (3) Master horizon
 - (4) Burried horizon
15. The favourable climate for the operation of laterization process is :
- | | |
|------------------------|-----------------------|
| (1) Warm humid climate | (2) Arid climate |
| (3) Cold humid climate | (4) Semi arid climate |
16. The black cotton soils of India are derived from which of the following rock :
- | | |
|-------------|---------------|
| (1) Granite | (2) Basalt |
| (3) Quartz | (4) Limestone |
17. In soil taxonomy, *tarai* soils are kept in which of the following order :
- | | |
|---------------|---------------|
| (1) Histosols | (2) Mollisols |
| (3) Alfisols | (4) Vertisols |
18. Sequence of colour variable in Munsell Soil Colour Chart is :
- | | |
|-----------------------|-----------------------|
| (1) Value/Hue/Chroma | (2) Hue/ Value/Chroma |
| (3) Chroma Hue/ Value | (4) Hue/Chroma/Value |

19. Demarcation of land units based on land form, soils, bioclimatic conditions and length of growing period is referred as :

- (1) Agro-climatic zones
- (2) Agro-ecological zones
- (3) Agricultural zones
- (4) Geo-climatic zones

20. Aerial photos of 1 : 10,000 scale are used in :

- (1) Detailed soil survey
- (2) Semi-detailed soil survey
- (3) Reconnaissance soil survey
- (4) Detailed reconnaissance soil survey

21. Which group of minerals augite belongs to :

- (1) Silica
- (2) Amphiboles
- (3) Pyroxenes
- (4) Feldspars

22. Cation responsible for flocculation of soil aggregates in soil is :

- (1) Mg^{2+}
- (2) Ca^{2+}
- (3) K^+
- (4) Na^+

23. Which of the following gases is characteristically present in water logged areas :

- (1) CO_2
- (2) CH_4
- (3) CO
- (4) N_2

24. Nacrite is an isomer of :

- (1) Kaolinite
- (2) Illite
- (3) Vermiculite
- (4) Montmorillonite

25. The highest K fixation capacity among the clay minerals is possessed by :

- (1) Kaolinite
- (2) Montmorillonite
- (3) Chlorite
- (4) Hydroxy interlayer vermiculite

26. Which metal volatilize through methylation in atmosphere :
- (1) Zn (2) Mn (3) Hg (4) Cu
27. The reaction of fly ash in moist soil is :
- (1) Acidic (2) Neutral (3) Alkaline (4) Saline
28. Which among the following types is high affinity pesticide adsorption on soil :
- (1) S-type (2) H-type (3) C-type (4) L-type
29. The flame colour of potassium in flame photometer is :
- (1) Yellow (2) Red
(3) Orange (4) Blue
30. Hydride generator in AAS is used for the analysis of :
- (1) Zn (2) Fe
(3) Se (4) Cr
31. Gas used for filling the hollow cathode lamp in AAS is :
- (1) Neon (2) Hydrogen
(3) Acetylene (4) Air
32. Nessler's reagent is used for analysis of N in the form of :
- (1) NO_3^- (2) NO_2^-
(3) NH_4^+ (4) $NO_2^- + NH_4^+$

33. The permissible maximum biuret content of urea produced in India is :
- (1) 0.5% (2) 1.0%
(3) 1.5% (4) 2.0%
34. Soil application of zinc is required in higher amount in :
- (1) Red soils (2) Alluvial soils
(3) Black soils (4) Calcareous soils
35. Which of the following is ultra-micronutrient or nano-nutrient
- (1) Copper (2) Zinc
(3) Iron (4) Molybdenum
36. Micro-organism most tolerant to soil moisture stress is :
- (1) Fungi (2) Bacteria
(3) Protozoa (4) Actinomycetes
37. Rhizobium is by nature :
- (1) Parasite (2) Autotroph
(3) Heterotroph (4) Saprophyte
38. Liming of an acid soil increases the availability of native :
- (1) Zn and B (2) P and Zn
(3) P and Mo (4) P and B
39. The matric suction which can be created using a pressure membrane apparatus is :
- (1) Less than 10 kPa (2) Less than 30 kPa
(3) Less than 100 kPa (4) More than 100 kPa
40. The equation representing the flow of water in saturated soil is :
- (1) Poiseuille's equation (2) Bernoulli's equation
(3) Darcy's equation (4) Navier-Stokes equation