

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 आवरण-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. The hydrological drought lags behind :
 - (1) Agricultural and Socio economic droughts
 - (2) Meteorological and Socio economic droughts
 - (3) Meteorological and Agricultural droughts
 - (4) Meteorological, Agricultural and Socio economic droughts
12. Which range of SPI value indicates moderate drought :
 - (1) 0 to -0.99 (2) -1 to -1.49 (3) -1.50 to -1.99 (4) less than -2.00
13. The bunds provided to check the flow of water at the ends of a graded bund are called as :
 - (1) Peripheral bunds (2) Side bunds
 - (3) Contour bunds (4) Level bunds
14. What is the objective of desert development programme :
 - (1) Mitigate the effect of drought in desert areas and restore ecological balance
 - (2) To conserve and utilize rainwater in desert area and increase productivity of crops
 - (3) Area development programme through restoration of ecological balance and optimum utilization of land.
 - (4) To arrest the problem of desertification and promote sustainable increase in production
15. The dimension of intrinsic permeability is :
 - (1) $M^0 L^2 T^1$ (2) $M^0 L^2 T^0$ (3) $M^0 L^2 T^{-1}$ (4) $M^0 L^2 T^{-2}$
16. In a soil having drainable porosity of 15%, If 4.5 cm of water is added to ground water the rise in the ground water table will be :
 - (1) 2.0 cm (2) 15.0 cm (3) 30.0 cm (4) 7.5 cm
17. A seepage line may be defined as the :
 - (1) Line above which there is no hydrostatic pressure
 - (2) Line below which there is no hydrostatic pressure
 - (3) Line above which there is no hydrostatic pressure and Line below which there is hydrostatic pressure
 - (4) None of the above

18. A system which operates in a predictable manner and the interaction between system components is known with certainty is termed as :

- (1) Probabilistic system
- (2) Lumped parameter system
- (3) Deterministic system
- (4) Quantized System

19. Very low value of NDVI (≤ 0.1) corresponds to :

- (1) Shrubs and grass
- (2) Barren areas of rock, sand or snow
- (3) Dense vegetation
- (4) Temperate and tropical rainforest

20. That portion of the electromagnetic spectrum that can be transmitted through the atmosphere without any distortion or absorption is termed as :

- (1) Irradiance
- (2) Atmospheric window
- (3) Infrared window
- (4) Rayleigh's scattering

21. Furrow irrigation method is suitable for :

- (1) almost all row crops
- (2) horticultural crops
- (3) close growing crops
- (4) none of the above

22. Subsurface drains remove :

- (1) excess surface water
- (2) capillary subsurface water
- (3) subsurface gravitational water
- (4) excess surface runoff water

23. Static head of a pump is equal to :

- (1) suction head
- (2) delivery head
- (3) sum of suction lift and delivery head
- (4) none of the above

24. Sprinkler irrigation system performance is considered satisfactory when the minimum value of the uniformity coefficient is :

- (1) 65 %
- (2) 75 %
- (3) 85 %
- (4) 95 %

25. Conjunctive use of surface and groundwater may be planned to :

- (1) augment canal supply
- (2) combat water logging
- (3) facilitate irrigation with poor water
- (4) all the above

26. Amount of water used in metabolic activities is :
 (1) 2 to 5 % of ET (2) less than 1 % of ET
 (3) about 10 % of ET (4) zero
27. Evapotranspiration is directly measured by :
 (1) Penman - Monteith method (2) Blaney - Criddle method
 (3) Penman Method (4) Lysimeter method
28. Sides of an earthen channel will be stable if its slope :
 (1) does not exceed the angle of repose (2) exceeds the angle of repose
 (3) is kept same as angle of repose (4) none of the above
29. Net irrigated area in India is :
 (1) 59 mha (2) 111 mha (3) 155 mha (4) 175 mha
30. A sodic soil has :
 (1) $ESP > 15$, $EC > 4$ ds/m (2) $ESP > 15$, $EC < 4$ ds/m
 (3) $ESP < 15$, $EC < 4$ ds/m (4) $ESP < 15$, $EC > 4$ ds/m
31. For the protection of river bank, the Gabion can be constructed as :
 (1) Cutoff (2) Spur
 (3) Apron (4) Drop structure
32. A close conduit is used in case of :
 (1) Chute spillway (2) Drop inlet Spillway
 (3) Straight drop spillway (4) Cutoff
33. The line of seepage in an earth embankment is also called the :
 (1) Phreatic line (2) Lower most flow line
 (3) Runoff line (4) Water pressure line

34. Longitudinal sills in a spillway basin are provided to :
- (1) Protect the structure from siltation
 - (2) Strengthen the structure
 - (3) Impound the water
 - (4) Distribute the flow across the apron
35. A structure to be safe against tension, the forces on head wall must pass through :
- (1) Middle third of base
 - (2) One third of base
 - (3) Two third of base
 - (4) Toe of the base
36. Which of the following is not key application discipline for GIS ?
- (1) Astronomy
 - (2) Civil engineering
 - (3) Environmental sciences
 - (4) Water Resource
37. A unit hydrograph has one unit of :
- (1) Peak discharge
 - (2) Rainfall duration
 - (3) Direct runoff
 - (4) The time base of direct runoff
38. Watershed shape is evaluated by :
- (1) Compactness factor
 - (2) Form factor
 - (3) Form factor & compactness factor
 - (4) Stream density
39. Stream gauging determines :
- (1) Stream flow
 - (2) Flood occurrence
 - (3) Sediment flow
 - (4) All of the above
40. Which of the following method computes storm wise direct runoff depth :
- (1) Cook's method
 - (2) Hydrograph method
 - (3) Infiltration index method
 - (4) Curve number method