RET/18/Test B	742	Water Management (Agronomy)

Question Booklet No. .....

(*To be filled up by the candidate by* ***blue/black ball-point pen***)

Roll No. | | | | | | | | | | |

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

FOR ROUGH WORK

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 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

12. 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

13. Dielectric constant of water in dry soil ranges between :

(1) 2-5
(2) 10-20
(3) 20-30
(4) 60-80

14. The law relating heat flux to temperature gradient is known as :

(1) Stefan's law
(2) Fourier law
(3) Boltzman law
(4) Newton's law

15. The slow neutrons in soil neutron moisture meter probe have energy level :

(1) 0.3 eV
(2) 0.03 eV
(3) 0.003 eV
(4) 3 eV

16. A 0.8 m deep soil has volumetric moisture content 0.12. Find out the quantity of water required to bring water content to 0.30.

(1) 14.2 cm
(2) 14.3 cm
(3) 14.5 cm
(4) 14.4 cm

17. Slow permeability is problem in :

(1) Red soil
(2) Black soil
(3) Alluvial soil
(4) Organic soil

18. In a laminar flow of liquid through a tube of radius r is proportional to :

(1) r
(2) r^2
(3) r^3
(4) r^4

19. Which is the most important for ligand exchange reaction?

(1) CEC (2) AEC

(3) pH (4) Ion size

20. Which of the following remain constant for an equilibrated ion in the soil system ?

(1) Electrochemical potential (2) Chemical potential

(3) Activity (4) Electric potential

21. Moisture equivalent was first proposed by :

(1) Arnon & Stout (1954) (2) Richards (1928)

(3) Lyman Briggs & McLane (1910) (4) Briggs & Shantz (1912)

22. Field capacity is the bulk water content retained in soil at ---------- suction pressure.

(1) –0.66 bar (2) –0.33 bar

(3) –1.00 bar (4) –0.23 bar

23. Soil is in a state of saturation when soil water potential is.

(1) –10 kPa (2) –50 kPa

(3) –100 kPa (4) 0 kPa

24. A sugarcane crop of around 16 months duration will require about --------water for producing 1 Kg sugar.

(1) 2000 lt (2) 3000 lt

(3) 1000 lt (4) 4000 lt

25. Scale of redox potential of a submerged soil ranges from :

(1) –300 to + 700 mV (2) –200 to + 600 mV

(3) –100 to + 500 mV (4) +0 to + 700 mV

26. Water Meter is used for measuring the flow in a :

(1) Pipeline (2) Field channel

(3) River (4) Well outlet

27. Sprinkler irrigation system is considered satisfactory when minimum value of uniformity coefficient is :

(1) 55% (2) 75%

(3) 85% (4) 95%

28. The discharge rates of drip emitters usually ranges from :

(1) 2-10 litres/hr (2) 2-10 litres/min

(3) 2-10 cu.m/day (4) 2-10 cu.m/hr

29. Hyper arid areas have Rainfall/PET ratio less than :

(1) 1.0 (2) 0.8

(3) 0.5 (4) 0.2

30. From hydraulic point of view the most efficient cross section of an open channel is :

(1) Semi- circular (2) Trapezoidal

(3) Parabolic (4) Rectangular

31. If a drainage canal discharges 1 cu.m /sec drains an area of 180 ha, the drainage coefficient will be equal to :

(1) 2.4 cm (2) 4.8 cm

(3) 24 cm (4) 1.2 cm

32. The Reynold's number of flow is the ratio of :

(1) Gravity force to the pressure forces

(2) Viscous forces to the pressure forces

(3) Gravity forces to the viscous forces

(4) Inertia force to the viscous forces

33. Indian Meteorological Department (IMD) is located at :

(1) Hyderabad (2) Pune

(3) Allahabad (4) Ahmadabad

34. Instrument used to measure humidity is :

(1) Barometer (2) Hygrometer

(3) Hydrometer (4) Altimeter

35. According to National Commission of Integrated Water Resource Development water demand for irrigation in India by 2025 will be :

(1) 1072 BCM (2) 807 BCM

(3) 611 BCM (4) 843 BCM

36. Consumptive use Coefficient of field crop varies from :

(1) 1.00-1.50 (2) 0.48-0.50

(3) 0.54-0.58 (4) 0.65-0.87

37. Major irrigation sources in agricultural crops is :

(1) Canals (2) Tanks

(3) Tube wells (4) Other sources

38. Sensitivity of tensiometer for irrigation scheduling is :

(1) 1 atm (2) 0.85 atm

(3) 0.95 atm (4) 0.75 atm

39. The Lysimeter is used to measure :

(1) Infiltration (2) Evaporation

(3) Evapotranspiration (4) Vapour pressure

40. The plot between rainfall intensity versus time is called :

(1) Hydrograph (2) Mass curve

(3) Hyetograph (4) Isohyet