B.Sc. (Honours) Agriculture Semester-II Examination, 2018

Course No: AGR-121 (Fundamentals of Agronomy-II)

Signature of Centre Superintendent

Roll No. : (in figure) _____ (in words) _____

Student Index No. _____ Regn. No. _____ of _____

Time : 2 Hours **Full marks : 50**

Questions are of value as indicated in the margin

Part - I
(Objective and Short Answer Type)
(Use only ball point pen)

Time : 30 minutes **Full marks : 20**

Note: 1. Answer in question paper itself.
2. Striking, rewriting or overwriting are not allowed in the objective type questions.

1. **Tick (√) the correct answer:** 1×10=10

   (a) Lower limit of available soil water is FC/PWP/Saturation/hygroscopic coefficient

   (b) The concept of plant ideotype was first proposed by Macy/Blackman/Liebig/Donald.

   (c) Total water resource of India is 392mha–m/400 mha–m/8 mha–m/300 mha–m.

   (d) In ideal soil condition, the soil:water:air content should be 5:3:2/2:3:5/3:2:5/5:2:3

   (e) Maximum application efficiency is obtained from check basin/drip/sprinkter/furrow method of irrigation

   (f) Alternate furrow irrigation can effectively be practiced in wheat/rice/sugarcane/mustard.

   (g) Indeterminate growth is mainly observed in wheat/chickpea/rice/sunflower.

   (h) The most common method of surface irrigation is check basin/drip irrigation/furrow/surge irrigation.

   (i) The moisture tension at hygroscopic coefficient is 15/31/60/1000 bar.

   (j) The average rainfall of India is 1050/1194/1250/1325 mm.

2. **Write short notes on the following (*any five*)** 2×5=10

   (a) Highly permeable soil.

   (b) Water use efficiency.

P.T.O.

(c) Ideotype of wheat.

(d) Mention difference methods of Irrigations.

(e) Distribution efficiency.

(f) Field capacity.

(g) Soil moisture characteristic curve.

(h) Draw and mark the plant growth curve.

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Part - II
(Descriptive Type)

Time : 90 minutes **Full marks : 30**

Questions are of value as indicated in the margin

Answer ***any three*** questions from the following 3×10=30

3. (a) What do you mean by soil moisture tension?
   (b) Enumerate the forces acting on soil water.
   (c) State the physical and biological classification of soil water. 1+4+5=10

4. (a) What do you mean by 'adaptation of crop plants?'
   (b) Write the factors influencing the distribution of different crops. State the influence of temperature on crop distribution.
   (c) Enumerate the plant features for adaptation under high temperature, low temperature and water deficit conditions. 1+3+(2+2+2)=10

5. (a) Define excess water.
   (b) What are the factors responsible for development of water logging?
   (c) Write the ill effects of water logging on soil and plant. 1+4+(2.5+2.5)=10

6. (a) What do you understand by 'quality of irrigation water'?
   (b) Classify the irrigation water based on RSC, salinity and sodium hazard.
   (c) Mention the management strategies for raising good crop by poor saline water.
   1+(2+2+2)+3=10

7. (a) What do you mean by 'irrigation scheduling'?
   (b) Write the criteria for scheduling irrigation based on soil and plant factors.
   (c) Define water requirement of crop and state the principal methods of water requirement estimation. 1+(3+3)+(1+2)=10

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