



বিদ্যাসাগর বিশ্ববিদ্যালয়

VIDYASAGAR UNIVERSITY

**B.Sc. (Honours) in AGRICULTURE
1st Semester Examination 2021**

PAPER—AGS-106

FUNDAMENTALS OF AGRONOMY

Full Marks : 70

Time : 3 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

THEORY

1. Answer any *ten* questions. 10×2
- (a) Define Tillage. Who is the father of Tillage? Name the book written by him.
- (b) Enumerate the criteria of essentiality of nutrients.
- (c) What is roqueing? How much soil moisture content is required for germination?

- (d) What is broadcasting of seeds? What is thumb rule for the depth of seed sowing?
- (e) How much water is essential for a plant to produce 1 kg of dry matter? What are the two branches of South West monsoon?
- (f) What is tilth? How can we predict that the soil is in good tilth?
- (g) Write any two long term objectives of Tillage.
- (h) Mention two disadvantages of waterlogging?
- (i) What is crop rotation? What is cropping pattern?
- (j) What is physiological maturity? What is harvest maturity?
- (k) What is meant by sub soiling?
- (l) What is crop density?
- (m) Define nutrition.
- (n) What is gravitational water? What is hygroscopic water?
- (o) Mention the origin and adaptation of rice.

2. Answer any six questions.

6×5

- (a) Discuss in briefly about primary tillage, secondary tillage and layout of seed bed.
- (b) Describe the following methods of moisture estimation :
 - i) Tensiometer
 - ii) Neutron probe.

- (c) Explain the following :
- i) Sprinkler method of irrigation and
 - ii) Drip method of irrigation.
- (d) Write short notes on any *two* of the following :
- i) Quality of irrigation water
 - ii) Evapotranspiration
 - iii) Herbicide selectivity.
- (e) What are the importances of plant population? Discuss about the factors affecting the plant population.
- (f) Mention the harvest maturity symptoms of
- i) rice
 - ii) wheat
 - iii) pearl millet
 - iv) pulses
 - v) sorghum.
- (g) Define weeds. What do you understand by crop-weed interference? Define allelopathy. What are the factors for which competition occurs?
- (h) Classify weeds according to ontogeny and habitat with example. Classify herbicide based on time of application with examples.
- (i) What is adaptation? Explain the theory of tolerance.
- (j) What are the criteria for determining water quality? Explain them briefly.

PRACTICAL

Answer any *two* questions.

2×10

1. Direct seeded rice is drilled with uniform row spacing of 20cm. What would be the plant population in one acre area if there are 10 plants in 50cm row length.
2. Calculate the amount of water content in cm, in 0–45cm soil profile, if the soil with bulk density 1.41 g/cc contains 35% gravimetric moisture.
3. How much area can be covered by 400g atrazine, if rate of application is 1.5kg a.i./ha and active ingredient in atrazine is 50%.
4. Describe the application method of soil active herbicides and foliage active herbicides.