

Agrotechnology Discipline
Khulna University, Khulna
4th Year, 2nd Term Examination 2025, Session 2024-2025
Course: AT-4201: Cropping System and sustainable Agriculture
Full marks: 60, Time: 03 Hours

- The **figures** in the right margin indicate full marks. The questions are of equal value.
- Use separate sheet for each section.
- Draw and label wherever necessary.
- There are **four** questions in each section, answer any **three** from each.

Section A

1. (a) What is cropping scheme? Give its objectives. 1+2.5=3.5
 (b) Discuss the principles of preparing cropping scheme. 3.5
 (c) Which information need to be included in a cropping scheme? 3.0

2. (a) 'Multiple cropping system is advantageous than mono-cropping system'. Explain. 2.5
 (b) How does multiple cropping intensify cropping in time and space dimension? 2.5
 (c) Name the types of intercropping giving one example from each. 2.5
 (d) Calculate the rice equivalent yield of lentil with a yield of 3.0 tha⁻¹ when the price of rice and lentil are 40 TK and 70 TK per Kilogram respectively. 2.5

3. (a) Name the socioeconomic factors affecting cropping of an area. Write the influence of agricultural extension activities in this regard. 2+2=4.0
 (b) How many cropping patterns (CPs) are existing in Bangladesh, which one is most dominant and which one is the last CP according to their coverage in the net cropped area of the country? 3.0
 (c) Give five general suggestions about the possible improvement of the cropping pattern of the country and propose there cropping suitable for the south western saline areas of Bangladesh. 3.0

4. (a) What is crop rotation? Give five principles of crop rotation. 1+2.5=3.5
 (b) What is cropping intensity? Why is the cropping intensity in the coastal area of southwestern Bangladesh much lower than country average? Explain with real facts. 3.5
 (c) 'Crop rotation reduces the incidence of pests and diseases'. Justify. 3.0

Section B

5. (a) What is crop reporting? 'Timely and effective crop reporting may enhance the crop productivity and profitability'. Judge the statement. 3.5
- (b) Mention the ways of crop reporting. Which one is more accurate and why? 2.5
- (c) 'Crop forecasting is important for not only the farmers but also the other stakeholders'. Justify the statement. 4.0

6. (a) Between crop reporting and crop cutting, which one is beneficial for the farmers and which one is beneficial for the policy makers? Answer with justification. 3.0
- (b) Outline the step-wise procedure of the crop cutting experiment according to DAE. 3.0
- (c) In a crop cutting experiment, the production of rice (BRRI dhan87) from five sample areas (15 m² each) was 18.9, 22.4, 26.4, 15.6 and 17.8 kg, respectively, at 22.8% moisture content in a specific upazila. Total area coverage by BRRI dhan87 on that upazila was 3356.4 ha. Calculate the yield and total production of BRRI dhan87 in that upazila. 4.0

7. (a) Discuss the fundamental principles of sustainable agriculture with examples. 3.5
- (b) What are good agricultural practices (GAP)? Give two examples of GAP. 3.0
- (c) Assess the management practices of sustainable agriculture. 3.5

8. (a) Clarify the terms: i) Conservation agriculture and ii) climate smart agriculture. 3.0
- (b) What is meant by conservation agriculture (CA)? How CA does reduce the effect of soil salinity? 2+2=4.0
- (c) 'Organic farming has numerous benefits, but farmers are not concerned with adopting it on a large scale'. Evaluate with justification. 3.0