Reg. No.										

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

B. Sc. (Ag.) (Fifth Semester - Regular) Examinations, November – 2025

AG-317 –Rainfed Agriculture and Watershed Management

Time: 2 hrs | Maximum: 50 Marks

The figures in the right hand margin indicate marks.

PART – A

Q.1. Fill in the blanks with suitable word / figure. (0.5 x 10 = 5 Marks)

a. Generally shelterbelts give protection from desiccating winds to the extent of _____ times their on windward side and up to _____ times on leeward side.
b. The average annual rainfall in Odisha is _____ mm.
c. Mini watershed covers an area of about _____ ha.
d. Prolonged meteorological drought is called as _____.
e. World water day is celebrated on _____.
f. Crop growing season of dryland farming is _____ days.
g. 1st Dry farming research station at Manjri was established in the year _____.
h. The transfer of minerals from top soil to subsoil through soil water is called_____.
i. The ratio of catchment area to command area in arid region should be_____.
j. Amino acid accumulated under moisture stress conditions is_____.

Q. 2. Define (or) Explain the following in one or two sentences. (1 x 5 = 5 Marks)

a. Agricultural drought
b. BBF
c. Vertical mulching
d. Contingency cropping
e. Wind break

Q3. Match the following (0.5 x 10 = 5 Marks)

	Column – A		Column – B
(a)	Alfisoil	(i)	Soil moisture tension
(b)	Lipid deposition	(ii)	Annual rainfall <750 mm
(c)	Tanka	(iii)	1985
(d)	Soil Repellent	(iv)	Red soil
(e)	Horti-slivi- pasture	(v)	< 66.7
(f)	Dry Farming	(vi)	Rajasthan
(g)	Arid region	(vii)	Asphalt
(h)	Leaf reflectant	(viii)	Fruits + Trees+ Grasses
(i)	Irrometer	(ix)	5% Kaolin
(j)	CRIDA	(x)	Soyabean

Q4. Write True or False against each statement **(0.5 x 10 = 5 Marks)**

a. Use of fertilizers is more in rainfed crops compared to irrigated areas.

b. Dry spell is rainless period more than 30 days in heavy soil areas.

c. Among the pulses, Red gram is better choice for low rainfall areas relative to other Kharif pulses.

d. Spraying of 2% Urea at 10 days interval is helpful for mitigating stress during prolong dry spell.

e. Respiration of crop plant decreases with mild stress.

f. Sowing of crop before harvesting of preceding crop is known as intercropping.

g. Atmospheric drought is defined by low air humidity, often accompanied by hot, dry winds, and can lead to temporary plant wilting during the hottest part of the day.

h. Raised and sunken bed system (RSB) is the traditional system followed by farmers of Chattisgarh.

i. Contour bunds are suitable for low rainfall areas (<600 mm) and in permeable soil having slope up to 6%.

j. South West Monsoon contributes 50 % of total rainfall in India.

PART – B

Attempt *ANY FIVE* questions. All question carries equal marks **(6 x 5 = 30 Marks)**

5. What are the major components of watershed management? Discuss the factors affecting watershed management.

6. Write a short note on contingency crop planning. Write down the role of Anti-transpirant along with their classification.

7. What is Crop adaptation? Write down the different mechanisms of crop adaptation under moisture stress condition.

8. Briefly describe soil and climatic conditions prevalent in rainfed areas.

9. Discuss crop management practices for efficient utilization of water in rainfed areas. Give suitable examples.

10. What is Dry farming? Differentiate between dry land farming and rainfed farming. Briefly describe importance of rainfed farming in Indian agriculture.

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