SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY: PUTTUR
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QUESTION BANK (DESCRIPTIVE)

Subject with Code: PASS (19AG0703) **Course & Branch**: B.Tech - AGE

Year & Sem: II-B.Tech &II-Sem **Regulation:** R19

UNIT-I

1	a	Explain the effect of Edaphic Factors on Crop Growth and Development.	L2	CO1	8M
	b	Distinguish between Manures and Fertilizers	L4	CO1	4M
2	a	Explain the Advantages and Disadvantages of Organic Farming.	L2	CO1	6M
	b	Classify the crops based on Ontogeny and Seasons.	L4	CO1	6M
3	a	Explain in detail the different types of sowing methods.	L2	CO1	8M
	b	What is Tilth and its characteristics.	L1	CO1	4M
4	a	Compare Sustainable Agriculture and Modern Agriculture	L5	CO1	6M
	b	Define Agriculture, Agronomy and Tillage.	L1	CO1	6M
5	a	Explain in detail the Off-Season Tillage.	L5	CO1	8M
	b	What is Depth of Sowing	L1	CO1	4M
6	a	Discuss the effect of Climatic Factors on Crop Growth and Development	L6	CO1	8M
	b	What is scope of Agronomy?	L1	CO1	4M
7	a	Show the Flow Chart of Development of Agriculture	L1	CO1	4M
	b	Explain the Fertilizer Soil Application Methods.	L3	CO1	8M
8	a	What are the disadvantages of High External Input Agriculture	L1	CO1	7M
	b	Factors influencing Fertilizer application methods	L4	CO1	5M
9	a	List out the Problems in Sustainable Agriculture	L1	CO1	4M
	b	Ideological difference between Organic Agriculture and Conventional (Chemical) Agriculture	L4	CO1	8M
10	a	Operational structure of National Programme for Organic Production (NPOP)	L3	CO1	8M
	b	List out the Principles of Organic Farming and Crop Seasons with examples.	L1	CO1	4M

UNIT-2

1	a	Solve the Problem: Maize is planted on 1st June and harvested on 31st September. The seedling, Vegetative, reproductive and maturity stages are 20, 35, 39 and 28 days respectively. The ET_0 for the corresponding stages are: 8.9, 9.4, 8.8 and 7.6 mm/day. Wind speed is light to moderate and minimum RH is low. Calculate ETm or ET (crop).	L3	CO2	8M
	b	Define Evaporation and Transpiration?	L1	CO2	4M
2	a	Define Gravitational Water, Capillary Water and Hygroscopic water.	L1	CO2	6M
	b	Draw a flowchart depicting different steps in water movement in the soi-plant-atmosphere system..	L4	CO2	6M
3	a	Name the critical stages of Irrigation for different crops in tabular form	L1	CO2	8M
	b	Define Intercropping and mention its objectives	L2	CO2	4M
4	a	Define Parallel cropping and Companion cropping? What are the advantages and disadvantages of Intercropping.	L1	CO2	6M
	b	Define Crop Rotation and its Characteristics.	L1	CO2	6M
5	a	Explain measurement of Soil moisture Direct Method by Alcohol Burning Method and Oven Drying Method with its merits and demerits.?	L2	CO2	8M
	b	Difference between Cropping pattern and Cropping system.	L4	CO2	4M
6	a	Explain the weed control by Mechanical Method	L2	CO2	8M
	b	Define Polyculture and Relay Cropping with examples.	L1	CO2	4M
7	a	Define the water requirement of crops and list out the factors that influence on Evapotranspiration.	L1	CO2	4M
	b	State and explain any eight Agronomic (cultural) weed management practices.	L3	CO2	8M
8	a	Explain briefly about the key elements in Weed Management.	L2	CO2	7M
	b	Discuss Multi-tier Cropping System with examples and neat labelled diagram	L4	CO2	5M
9	a	Define Mixed Cropping and what are the Steps involved in Estimation of Evapotranspiration	L1	CO2	4M
	b	Describe the soil properties influencing root development and effective root zone depth.	L2	CO2	8M
10	a	Explain the weed control by Biological method and Chemical Method.	L2	CO2	8M
	b	What are the types of Intercropping?	L1	CO2	4M

Crop	Crop Development Stage			
	Seedling	**Vegetative**	**Reproductive**	**Maturity**
Rice	1.1-1.2	1.1-1.4	1.1-1.3	0.9-1.0
Wheat	0.3-0.4	0.7-0.8	1.0-1.2	0.6-0.8
Maize	0.3-0.5	0.7-0.8	1.0-1.2	0.8-0.9
Sorghum	0.3-0.4	0.7-0.8	1.0-1.1	0.7-0.8

*Lower values are for high humidity and low wind velocity.

UNIT-3

1	a	Categorize the soil structure and describe them with suitable diagrams.	L3	CO3	8M
	b	Show the tabular form of textural Class names developed by U.S.Department of Agriculture	L1	CO3	4M
2	a	List out the limitations in Genetic System of Soil Classification.	L2	CO3	6M
	b	Characteristics of Soil Seperates (Sand, Silt and Clay)	L4	CO3	6M
3	a	Describe the factors of Soil Formation.	L2	CO3	8M
	b	Define Particle density and Bulk density and write down its SI units.	L1	CO3	4M
4	a	Differentiate between Surface Soil and Sub Soil	L5	CO3	6M
	b	Write a short notes on Mica, Quartz and Clay Minerals.	L1	CO3	6M
5	a	Enlist and describe the factors effecting Soil Structure.	L5	CO3	8M
	b	A metal cylinder pushed into a loam soil is removed from the field and the soil it contains is dried in an oven. The measured data are given below: Cylinder height: 5.0 cm Inside diameter of the cylinder: 4.4 cm Oven dried soil weight: 87.6g Calculate the bulk density of the soil	L3	CO3	4M
6	a	Define Soil and Illustrate the soil profile with proper diagrammatic representation.	L2	CO3	8M
	b	Write a short notes on Metamorphic rocks with proper examples.	L1	CO3	4M
7	a	Mention and explain the Factors affecting the Bulk Density.	L1	CO3	4M
	b	Enlist the Weathering Process? Describe Physical and biological weathering processes	L3	CO3	8M
8	a	Explain the chemical weathering process of Rocks and Minerals.	L1	CO3	7M
	b	A soil core was taken for the determination of bulk density.The measurements were: Cylinder volume: 73.6.c.c Dry soil weight: 87.8 gm Particle density: 2.65 gm/cc. Calculate the percentage pore space of the soil.	L4	CO3	5M
9	a	How the Soil structure shows influence on soil physical properties.	L1	CO3	4M
	b	Explain the Early System and recent system of soil classification.	L4	CO3	8M
10	a	Discuss the Factors affecting Weathering of Minerals with suitable examples and diagrams.	L2	CO3	8M
	b	Mention and explain the Factors affecting the porosity of soil.	L1	CO3	4M

UNIT-4

1	a	Define Soil Colloids and explain its eight properties.	L3	CO4	8M
	b	Define Amorphous Clays and CEC	L1	CO4	4M
2	a	Explain in detail the problems of salt affected soils.	L2	CO4	6M
	b	What are the sources of soluble salts and explain them.	L4	CO4	6M
3	a	Explain the factors affecting Decomposition.	L2	CO4	8M
	b	Enlist and describe the Factors affecting Anion Exchange	L1	CO4	4M
4	a	Justify why Gypsum is not considered as a Liming material and explain the types of Slags.	L5	CO4	6M
	b	Define Laterisation and Podzolisation with explain with their respective conditions.	L1	CO4	6M
5	a	Explain the Role of Organic Matter in Soil Fertility.	L2	CO4	8M
	b	What are the factors affecting Ion Exchange.	L1	CO4	4M
6	a	Descibe Carbon:Nitrogen Ratio in detail.	L2	CO4	8M
	b	Explain types of Soil Colloids.	L1	CO4	4M
7	a	Define Electrical Conductivity, SAR, Soil Texture and Osmotic Pressure with expressions wherever applicable.	L1	CO4	4M
	b	Define Soil Acidity and describe its sources in brief.	L3	CO4	8M
8	a	Explain Reclamation of salt affected soils with suitable chemical reactions.	L2	CO4	7M
	b	Define Liming Factor and mention the criteria to maintain the Lime Balance Sheet	L4	CO4	5M
9	a	Assume an irrigation water has a conductivity of 1.08 dSm^{-1} . The field crop planted has a 50 percent yield reduction at soil saturation extract conductivity of 7 dSm^{-1} (drainage water). Calculate the additional amount of water required to apply if the water needed to wet the profile is 6.35 cm (2.5 inches).	L3	CO4	4M
	b	Discuss the Factors affectiong $K^+$and NH_4^+ fixation in soils.	L4	CO4	8M
10	a	Describe the problems of Soil Acidity.	L2	CO4	8M
	b	Define Soil Organic Matter and explain Carbon sequestration in Soils.	L1	CO4	4M

UNIT-5

1	a	Mention the functions and deficiency symptoms of Nitrogen and Phosphorous.	L3	CO5	8M
	b	Explain Criteria of Essentiality.	L2	CO5	4M
2	a	List down the functions of Zinc, Boron and Molybdenum micro nutrients.	L2	CO5	6M
	b	Distinguish between Inorganic fertilizers and Organic Manures	L4	CO5	6M
3	a	Describe the three general Reclamation Methods of Saline and Sodic Soils.	L2	CO5	8M
	b	List down the Boron and Copper deficiency symptoms.	L1	CO5	4M
4	a	List down the Criteria for Evaluation of Irrigation Water and explain any six of them.	L1	CO5	6M
	b	Define the Following: i) Complete fertilizer ii) Optimum dose iii) Manure iv) Placement of Fertilizers v) Fertilizer vi) Threshold Dose	L1	CO5	6M
5	a	Mention the conditions for management and use of poor quality water.	L2	CO5	8M
	b	Solve the Problem: Assume an irrigation water has a conductivity of 1.08 dSm^{-1}. The field crop planted has a 50 percent yield reduction at soil saturation extract conductivity of 7 dSm^{-1} (drainage water). Calculate the additional amount of water required to apply if the water needed to wet the profile is 6.35 cm (2.5 inches).	L3	CO5	4M
6	a	Explain in detail Gypsum requirement for the reclamation of sodic soils.	L2	CO5	8M
	b	Define the following Method of Fertilizer Application i) Top Dressing ii) Broadcasting iii) Starter solutions iv) Foliar application v) Soil Application and vi) Fertigation	L1	CO5	4M
7	a	List out and explain the common problems faced from using the poor quality water.	L1	CO5	4M
	b	Enlist the Toxicity symptoms of Nitrogen, Phosphorous, Iron, Manganese and Boron.	L2	CO5	8M
8	a	Identify the deficiency symptoms of nutrients based on i) Region of Occurrence ii) Presence or absence of dead spots iii) Chlorosis of entire leaf or intervienal chlorosis	L4	CO5	7M
	b	List down the Fertilizers containing Phosphorous and explain any six of them.	L4	CO5	5M
9	a	Write a short notes on formation of Saline soils.	L1	CO5	4M
	b	Explain the factors affecting suitability of waters for irrigation.	L2	CO5	8M
10	a	Classify the irrigation water based on Total salt content and Boron content in a tabular form.	L4	CO5	8M
	b	Describe the Problems of Saline Soils	L2	CO5	4M

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