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B.Tech. DEGREE EXAMINATION, JUNE 2023

Seventh Semester

18CSE398T - IOT IN AGRICULTURE

(For the candidates admitted during the academic year 2018-2019 to 2021-2022)

Note:

i. **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40 minutes.

ii. **Part - B** and **Part - C** should be answered in answer booklet.

Time: 3 Hours **Max. Marks: 100**

Part - A (20 × 1 Marks = 20 Marks)

Answer **All** Questions

		Marks	BL	CO
1.	The soil with highest iron content is (A) Red soil (B) Black soil (C) Alluvial soil (D) Mountaineous soil	1	2	1
2.	Soil exists in how many states (A) 1 (B) 4 (C) 5 (D) 6	1	1	1
3.	Method that produces finer soil and sometimes shapes the rows, preparing the seed bed is called (A) Secondary tillage (B) Primary tillage (C) Threshing (D) Harrowing	1	1	1
4.	A relative density of loose soil is in the range (A) 60-85 (B) 85-100 (C) 10-35 (D) 35-60	1	1	1
5.	Sprinkler Irrigation Method uses _____ method to irrigate the land (A) Artificial rain (B) Traditional methods (C) Pumping station gates (D) Diving the land into basins	1	2	2
6.	A standalone software For the purpose of downloading data from multiple sensors is (A) Adaptive AgroTech (B) On Farm (C) Mantis (D) Cultyvate	1	1	2
7.	Sensors that are capable of measuring a physical quantity at the point of the sensor node in the target field are (A) Omnidirectional sensors (B) Narrow-beam sensors (C) Active sensors (D) Electro-optical sensor	1	1	2
8.	_____ is one of the classifications of communication solutions (A) Spectrum (B) Cloud computing (C) Big data (D) Embedded systems	1	1	2
9.	Name the sensor used to measure soil compaction is (A) Electro chemical sensors, (B) Mechanical sensors (C) Air flow sensors, (D) Soil moisture sensors.	1	1	3
10.	Drone flight calculator is used to (A) Calculate battery potential of the drone (B) Assess the propeller of the drone (C) Assess if there will be an improvement in farming operations (D) Calculate the value of the drone	1	1	3

11.	Total water evaporation into the atmosphere from the soil surface is called (A) Transpiration (B) Evaporation (C) Evapotranspiration (D) Moisture deficiency	1	1	3
12.	Airborne component of the drone possess (A) Video receiver (B) Video transmitter (C) Display system (D) Simulation model	1	1	3
13.	NDVI is a graphical indicator used to assess (A) Live green vegetation (B) Photosynthetic effect in plants (C) Soil health (D) Soil moisture	1	1	3
14.	Weeds are the (A) Main crop plants (B) Insects and pests (C) Unwanted plants (D) Chemical substances	1	1	3
15.	Quantification of quality, photosynthesis, development, architecture, growth or biomass productivity of single plants is called (A) Crop Phenotyping (B) Crop Scouting (C) Phytosanitary process (D) Digital Agriculture	1	1	4
16.	Drones should not be allowed to fly above (A) 400-500ft (B) 300-400 ft (C) 500-600 ft (D) 600–700 ft	1	1	4
17.	Growing plants without soil is (A) Hydroponics (B) Aeroponics (C) Monoculture (D) Polyculture	1	1	5
18.	Which of the following is a type of AI (A) Machine Learning (B) NLP (C) Rule-based techniques (D) Fuzzy logic	1	2	5
19.	The type of learning which has no labeled inputs is called (A) Supervised learning (B) Un-supervised learning (C) Reinforcement learning (D) Semi-supervised learning	1	2	5
20.	Which of the following is not true about hydroponics (A) Requires high investment (B) Technical knowledge required (C) Can be misused to cultivate banned crops (D) Plants through hydroponics cannot be cultivated everywhere	1	2	5

Part - B (5 × 4 Marks = 20 Marks) — Marks BL CO

Answer **any 5** Questions

21.	Explain in detail about the different agricultural seasons in India.	4	1	1
22.	Describe the basic steps involved in Precision Agriculture.	4	2	2
23.	Discuss about the various sowing methods followed in crop production.	4	1	2
24.	Justify the need for bringing IT in Agriculture sector.	4	4	3
25.	Explain the 3 stages in Drone aided weed detection problem.	4	2	4
26.	Describe shortly about the fundamental concepts of DSS.	4	3	5
27.	Write in short about the technologies that work together with IOT.	4	2	3

Part - C (5 × 12 Marks = 60 Marks) — Marks BL CO

Answer **All** Questions

28.	(a) Enumerate the soil and water conservation techniques in crop production. **(OR)** (b) Discuss about types of soils and How the soil survey can be measured using various methods.	12	2	1
29.	(a) Explain in detail about the classification of crops and their importance . **(OR)** (b) Briefly discuss about the green house and protected cultivation techniques.	12	3	2
30.	(a) Explain a cloud based architecture for smart farms management with an architecture diagram. **(OR)** (b) Explain a sensor based soil management system for predicting the soil quality of any farm with neat diagram.	12	3	3
31.	(a) Describe the role of IOT in water management for irrigation. **(OR)** (b) (i) Differentiate between Hydroponics and aeroponics. [6 Marks] (ii) Justify the need for Hydrponics in Aeroponics in precision farming. [6 Marks]	12	4	4
32.	(a) Describe the role of ML in water quality monitoring. **(OR)** (b) Describe the role of DL in Live stock monitoring.	12	3	5

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