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Question Paper Code: 92007

B.E./B.Tech. DEGREE EXAMINATION, AUGUST 2021

Second Semester

19UPH207 – AGRICULTURE ENGINEERING
(For Agriculture branch)

(Regulation 2019)

Duration: 1.45 hrs

Maximum: 50 Marks

PART A - (10 x 2 = 20 Marks)

(Answer any ten of the following questions)

1. Explain the main constituent of biogas CO1 (U)
2. Write main features about Ocean thermal energy CO1 (U)
3. The total yearly world consumption of energy is approximately 4.0×10^{20} J .how much mass would be completely converted into energy to provide this amount of energy? CO3 (AP)
4. What steps would you suggest to minimize environmental pollution caused by burning of fossil fuels? CO1(U)
5. Determine the void ratio of a saturated soil sample that has a mass of 178 g before drying and 139 g after drying in an oven. Assume the specific gravity of the soil solids to be 2.7 CO3 (AP)
6. Explain the term soil topography. CO1(U)
7. What are the factors influencing soil temperature? CO1 (U)
8. Increasing temperature increases the rate of biochemical reactions in a soil. Based on this statement how would you expect soils developed in the tropics to be more highly Weathered. CO2 (AN)
9. What are the types of metallic glasses and mention few metallic glasses. CO1 (U)
10. Name the materials aimed to develop robotic machines CO1 (U)
11. What are the properties of shape memory alloys? CO1 (U)
12. Mention few techniques for synthesis of nano phase materials. CO1 (U)

13. What are the uses of remote sensing? CO1 (U)
14. Mention factors that influence soil reflectance in remote sensing. CO1 (U)
15. Mention remote sensing applications in agriculture. CO1 (U)

PART - B (3 x 10 = 30 Marks)
(Answer any three of the following questions)

16. Describe bio-fuels production and their applications CO1 (U)
17. A soil sample has a porosity of 81%, a moisture content of 35.2% and a specific gravity of 2.85. Determine the degree of saturation and the air void ratio. CO3 (AP)
18. Select a suitable method for production of metallic glasses and analyze the properties and applications of amorphous metal. CO3(AP)
19. Describe the factors that influence soil reflectance in remote sensing. CO1 (U)
20. Explain with necessary diagram the synthesis of nanomaterials using Chemical vapour deposition. CO1 (U)