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Question Paper Code: U1Y07

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2024

First Semester

Agriculture Engineering

21UCY107 - CHEMISTRY FOR AGRICULTURIST

(Regulation 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- The lowest energy orbital is _____ CO1- U
(a) p-orbital (b) d-orbital (c) s-orbital (d) f-orbital
- The bond angle between the sp hybrid orbitals is _____ CO1- U
(a) 90° (b) 180° (c) 120° (d) 109° 29'
- pH for drinking water is _____ CO1- U
(a) 1-2 (b) 3-4 (c) 7-8.5 (d) 10-12
- The expansion of EDTA is _____ CO1- U
(a) Ethylene Diamine Tetra Acetic Acid (b) Ethylene Diiodo Tetra Acetylene
(c) Ethylene Diphenyl Tri Acetic Acid (d) None of These
- The process of disintegration of rocks is called _____ CO1- U
(a) weathering (b) tempering (c) cementing (d) annealing
- The particle size of clay is _____ CO1- U
(a) 0.001 mm (b) 0.002 mm (c) 0.02 mm (d) 0.0001 mm
- Proteins are _____ CO1- U
(a) monomer (b) polymers (c) dimer (d) none of these
- The blood protein hemoglobin is made up of ___ polypeptide chain. CO1- U
(a) 1 (b) 2 (c) 3 (d) 4
- Resin containing basic functional group are capable of exchanging their _____ CO1- U
(a) anion (b) cation (c) both a & b (d) none of these

10. Sea water contains _____ ppm of dissolved solids CO1- U
 (a) >1000 (b) < 1000 (c) >35000 (d) < 35000

PART – B (5 x 2= 10 Marks)

11. State Pauli's Exclusion principle CO1-U
 12. A water sample contains 204 mg of CaSO₄ per litre .Calculate the hardness in terms of CaCO₃ CO3- Ana
 13. Write a note on two types of weathering. CO1- U
 14. What is the function of proteins and lipids? CO1-U
 15. What is Calgon? How is it functioning in water treatment? CO1-U

PART – C (5 x 16= 80 Marks)

16. (a) How does a chemical bond formed? Explain the types of chemical bonds in NaCl and H₂molecule. CO2- App (16)
 Or
 (b) Identify the types of hybridization in methane, ethylene and acetylene and explain the reason. CO2- App (16)
17. (a) Analyze the hardness of well water by complexometric titration. CO3- Ana (16)
 Or
 (b) Identify the method for the removal of cations and anions of hard water? Discuss the various steps involved with suitable diagram. CO3- Ana (16)
18. (a) Write in your own words on the types of rocks? How soils are formed from rocks? Explain two processes involved in soil formation. CO4- App (16)
 Or
 (b) What would result from the sorption process in soil? List the factors affecting the sorption of soil. CO4- App (16)
19. (a) What are Lipids? How are they classified based on the fatty acids? CO1- U (16)
 Or
 (b) What are the functions of enzymes? Describe the biochemical reaction of enzymes using lock and key method. CO1- U (16)
20. (a) A hotel tea shop boiler gets more corroded due to the continuous usage of hard water. So, how you prevent that boiler by using internal conditioning methods. CO3- Ana (16)
 Or
 (b) How do you extract desalinated water from brackish water using membrane? Explain the working principle and procedure involved. CO3- Ana (16)

