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Question Paper Code: 91005

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

First Semester

Computer Science and Engineering

19UCY105 - APPLIED CHEMISTRY

(Common to EEE, ECE, IT and Biomedical Engineering)

(Regulation 2019)

Duration: One hour

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

- Which one of the following pair of atoms most likely to form an ionic bond? CO1- R
(a) Na & F (b) C & C (c) N & F (d) F & F
- Which among the following is weakest bond? CO1- R
(a) Covalent bond (b) Ionic bond (c) Metallic bond (d) Hydrogen bond
- Which among the following will have a highest melting point? CO1- R
(a) NaI (b) NaBr (c) NaCl (d) NaF
- Temporary hardness is due to CO2- R
(a) $MgSO_4$ (b) $Ca(HCO_3)_2$ (c) $CaSO_4$ (d) $MgCO_3$
- Hardness in water expressed in terms of equivalent of CO2- R
(a) $CaCl_2$ (b) $MgCl_2$ (c) $CaCO_3$ (d) $MgCO_3$
- What does 'e' waste stands for CO3- R
(a) Environment waste (b) Electronic waste (c) Equipment waste (d) Energy waste
- The liquid crystals that possess a thread structure are called CO3- R
(a) Cholesteric liquid crystals (b) Smectic liquid crystals
(c) Nematic liquid crystals (d) Isotropic liquid crystals

8. Which of the following is not a characteristic of lithium batteries? CO4- R
- (a) It contains non aqueous electrolyte (b) It has high cell voltage
- (c) It is operational over limited temperature range (d) It has high energy density
9. During charging, the density of the electrolyte of a lead acid battery CO4- R
- (a) Increase (b) Decrease (c) Remaining Same (d) Become Zero
10. A fuel cell is used to convert chemical energy into CO4- R
- (a) Mechanical Energy (b) Solar Energy (c) Electrical Energy (d) Potential Energy

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Describe the characteristics properties of Ionic compounds. CO1-U (8)
12. How is hardness of water determined by complexometric method? Write the necessary calculation. CO2- U (8)
13. With help of a neat diagram explain the reverse osmosis method for desalination of brackish water. CO2- U (8)
14. Discuss the structure and applications of liquid crystals CO3- U (8)
15. Explain the construction and application of a lead acid battery along with reaction involved during charging and discharging. CO4- U (8)

