

B.E./B.TECH. Degree Examination, December 2020

Second Semester

CY16251 – Engineering Chemistry II

(Regulation 2016)

Time: Three hours

Maximum : 80 Marks

Answer **ALL** questions**PART A - (8 X 2 = 16 marks)**

1. Temporary hardness is caused by
 - a. CaSO_4 and MgSO_4
 - b. $\text{Ca}(\text{HCO}_3)_2$ and $\text{Mg}(\text{HCO}_3)_2$
 - c. CaCl_2 and MgCl_2
 - d. Na_2SO_4 and MgCl_2
2. Ni – Cd battery gives a voltage of
 - a. 0.8 V
 - b. 1.4 V
 - c. 2.0 V
 - d. 3.0 V
3. Which of the following is not a neutral refractory?
 - a. Silicon carbide
 - b. Magnesite
 - c. Chromite
 - d. Graphite
4. Identify the correct equation
 - a. $\text{GCV} = \text{NCV}$
 - b. $\text{NCV} > \text{GCV}$
 - c. $\text{GCV} > \text{NCV}$
 - d. $\text{GCV} - \text{NCV} = 0$
5. How can you compare hard water and soft water?
6. How would you demonstrate nuclear chain reaction?
7. Distinguish between Portland cement and white cement.
8. What examples can you find that reduces knocking of diesel?

PART B - (4 X 16 = 64 marks)

09. (a) (i) Apply ion exchange process for softening of water with a neat diagram. (8)
(ii) How would you elaborate on the reason and prevention of priming and foaming? (8)

(OR)

(b) What are the factors can you gather for the influencing the rate of corrosion? **(16)**

10. (a) (i) Describe the construction and working of H₂O₂ fuel cell. **(8)**

(ii) Give an account of light water nuclear with a neat diagram. **(8)**

(OR)

(b) (i) Discuss the construction and working of lead acid battery. **(8)**

(ii) Elaborate the conversion of solar energy into electrical energy. **(8)**

11. (a) (i) Illustrate the manufacture of Portland cement by wet process. **(8)**

(ii) Give the preparation, properties and uses of carborundum. **(8)**

(OR)

(b) Enlighten in detail any four properties of refractory. **(16)**

12. (a) (i) How is Proximate analysis carried out? Mention its significance. **(8)**

(ii) Apply Orsat method for flue gas analysis. **(8)**

(OR)

(b) (i) Explain how synthetic gasoline manufactured by Bergius method. **(8)**

(ii) With neat diagram explain in detail the Otto Hoffman method of coke manufacture and the recovery of byproducts. **(8)**