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Tatyasaheb Kore Institute of Engineering & Technology, Warananagar
(An Autonomous Institute)

F.Y. B. Tech (Semester - I), In Semester Examination –II, October, 2023

ENGINEERING CHEMISTRY

Day and Date: Thursday, 26 October 2023

Course Code: FY102

Time : 9:15 AM to 10:15 AM

Marks: 30

Instructions: i) Use of only non programmable calculator is allowed.
ii) Figures to the right indicate full marks.

Q.1 Attempt any three from the following questions.	Unit No	CO	M
a) Write difference between Thermosoftening plastic and Thermosetting plastic.	3	CO3	5
b) Give composition , properties and applications of fiber reinforced plastic (FRP)	3	CO3	5
c) What are conducting polymers? Give any properties and applications of conducting polymers.	3	CO3	5
d) Give preparation, properties and applications of any one 1) Epoxy resin 2) Urea Formaldehyde	3	CO3	5
Q.2 Attempt any three from the following questions.			
a) Calculate gross and net calorific value of coal sample from following Bomb calorimeter data. i) Weight of coal sample = 1.1gm ii) Weight of water taken = 1500 gm iii) Water equivalent of apparatus = 520 gm iv) Initial temperature = 28.4 °C v) Final temperature = 35.9 °C vi) Cooling Correction = 0.5 °C vii) Acid Correction = 61 Cal viii) Fuse wire correction = 4.5 Cal ix) Latent heat of steam = 587 kcal/kg x) Amount of Hydrogen = 5 %	4	CO4	5
b) Give any five characteristics of good fuel.	4	CO4	5
c) Compare and contrast of solid fuel and liquid fuel.	4	CO4	5
d) The following data were obtained in Boy's calorimeter experiment i) Volume of gas used = 0.11 m ³ at STP ii) Weight of water heated = 25.7 kg iii) Temperature of inlet water = 21 °C iv) Temperature of outlet water = 31 °C v) Weight of steam condensed = 0.028 kg Calculate gross and net calorific value per m ³ at STP. Take the heat liberated in condensing water vapour and cooling condensate as 587kcal/kg.	4	CO4	5