Code No: RA161222 **R16** RA

I B. Tech II Semester Supplementary Examinations, April/May - 2018
APPLIED CHEMISTRY
(Only EEE)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answering the question in **Part-A** is Compulsory
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1.	a)	What is the use of stabilizers in compounding of rubber?	(2M)
	b)	What are the various fractions obtained during fractional distillation of petroleum?	(2M)
	c)	How does presence of impurities affect corrosion?	(2M)
	d)	How can fullerenes act as superconducting fullerides? Explain.	(2M)
	e)	Distinguish FCC and BCC based on their packing fraction, number of atoms per unit cell and stacking sequence of atoms.	(2M)
	f)	What are non-conventional and conventional energy? Give examples.	(2M)
	g)	Why nanomaterials are more active compared to bulk materials?	(2M)

PART –B

2.	a)	Explain (i) emulsion polymerization (ii) syndiotactic and isotactic polymers	(7M)
	b)	Discuss the preparation and applications of polyurethane and PE.	(7M)
3.	a)	Explain the corrections applied in calculation of bomb calorimeter. 0.35 g of fuel containing 50% carbon, when burnt in a bomb calorimeter, had increased temperature of water from 28.5 ^{0}C to 32.5^{0}C. If calorimeter contains 150 grams of water and its water equivalent is 150 grams. Calculate the HCV of the fuel.	(7M)
	b)	What is natural gas and LPG? Discuss its advantages.	(7M)
4.	a)	Explain with a neat diagram the working of concentration cells with example.	(7M)
	b)	How is galvanic series different from electrochemical series?	(7M)
5.	a)	Explain chemical reduction method for preparation of nanomaterials.	(7M)
	b)	Discuss the importance of R_4M_4 principles in green chemistry.	(7M)
6.	a)	Explain stoichiometric and controlled valency semiconductors.	(7M)
	b)	Discuss Hall effect and its applications.	(7M)
7.	a)	With a neat sketch explain the working of a hydropower plant.	(7M)
	b)	Differentiate thermal conversion and photoconversion. Write the applications of solar energy.	(7M)
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