

Code No: R161106

**R16****SET - 1****I B. Tech I Semester Supplementary Examinations, May - 2018****APPLIED CHEMISTRY**

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 70

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

1. a) Write the structure of Thiokol. Why it cannot be vulcanized? (2M)
- b) Define cetane number. (2M)
- c) Give a reason why food stuffs cannot be stored in galvanized articles. (2M)
- d) What are fullerenes? How are they prepared? (2M)
- e) Write the applications of junction transistor. (2M)
- f) What is meant by “penstock” in hydropower plant setup? (2M)
- g) What is meant by “OTEC”? (2M)

**PART -B**

2. a) Discuss fiber reinforced plastics. (7M)
- b) Discuss the role of (i) resins (ii) plasticizers (iii) catalysts as compounding ingredients of plastics with examples. (7M)
3. a) Define HCV and LCV. Calculate the gross and net calorific value of coal containing the following composition: C = 70%, H = 15%, O = 7 %, S = 5 % and remaining ash. Latent heat of steam = 587 cal/gm. (7M)
- b) Write short note on (i) rocket fuels (ii) power alcohol. (7M)
4. a) What is battery? What are its types? Give examples. Discuss the construction and working of Ni-Cd battery. (7M)
- b) Explain galvanic corrosion and differential aeration corrosion. (7M)
5. a) Discuss the laser ablation and CVD method for preparation of carbon nanotubes. (7M)
- b) Write the applications of superconductors. (7M)
6. a) What are semiconductors? Explain the chalcogen photo/semiconductors. (7M)
- b) Discuss about electrical insulator applications. (7M)
7. a) Explain the working of geothermal energy with a neat schematic diagram. (7M)
- b) Discuss the working and advantages of H<sub>2</sub>-O<sub>2</sub> fuel cell. (7M)