Code No: R10204/R10 **Set No. 1**

I B.Tech II Semester Supplementary Examinations, August 2014
ENGINEERING CHEMISTRY -II
(Common to Civil Engineering, Electrical & Electronics Engineering, Mechanical Engineering, Electronics & Communication Engineering, Computer Science & Engineering, Chemical Engineering, Electronics & Instrumentation Engineering, Bio-Medical Engineering, Information Technology, Electronics & Computer Engineering, Aeronautical Engineering, Bio-Technology, Automobile Engineering, Mining and Petroliem Technology)

Time: 3 hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Differentiated the following with suitable examples
   (i) Polymer from monomer
   (ii) Step polymerization from chain polymerization
   (iii) Homo polymer from co – polymer
   (b) Explain the properties which are influenced by structure of the polymer? [6+9]

2. (a) Write a note on the constituents (Compounding) of plastics?
   (b) Explain the Extrusion moulding of plastics? [10+5]

3. (a) Define vulcanization?
   (b) How the process of vulatanisation is carried out?
   (c) What are the advantages of vulcationsation? [2+6+7]

4. (a) Describe the production of carbon nanotubes by laser ablation method?
   (b) Discuss the applications of fullerenes.
   (c) Explaine the properties of carbon nanotubes? [8+4+3]

5. (a) What are the different methods of manufacturing cement? Write any one of them.
   (b) Write the acidic and neutral type of the refractories and their uses. [8+7]

6. (a) Write the informative note on origin of petroleum.
   (b) How are lubricants classified? Mention the additives added to the lubricants and give their functions. [7+8]

7. What are Corrosion inhibitors? Explain with examples how anodic and cathodic inhibitors provide protection against corrosion and explain passivity and its significance. [15]

8. Define green chemistry and outline the twelve basic principles of green chemistry. Explain the Microwave induced method for green systhesis [15]

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Code No: R10204/R10 **Set No. 2**

I B.Tech II Semester Supplementary Examinations, August 2014
ENGINEERING CHEMISTRY -II
(Common to Civil Engineering, Electrical & Electronics Engineering, Mechanical Engineering, Electronics & Communication Engineering, Computer Science & Engineering, Chemical Engineering, Electronics & Instrumentation Engineering, Bio-Medical Engineering, Information Technology, Electronics & Computer Engineering, Aeronautical Engineering, Bio-Technology, Automobile Engineering, Mining and Petroliem Technology)

Time: 3 hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Give the preparation, properties, and uses of the Flexi glass?
   (b) What is the Zeigler – Natta Catalyst? Give its role in the coordination addition mechanism? [5+10]
2. (a) Discuss briefly fabrication of plastic articles?
   (b) What is the kelvar? How is it prepared, give its properties and useses? [10+5]
3. (a) Give the method of preparation, properties and application of Buna-S Rubber.
   (b) Give the method of preparation properities and application of Buna N Rubber [8+7]
4. (a) Describe the production of carbon nano tubes by arc discharge method
   (b) Mention the properties of fullerenes
   (c) Write briefly about the physical properties of carbon nanotubes [8+4+3]
5. (a) Explain the manufacture of cement in detail
   (b) Define and classify refractories with examples [8+7]
6. (a) What is meant by cracking of petroleum? Explain moving bed catalytic cracking method of obtaining gasoline.
   (b) Indicate the preparation and uses of lithium grease [8+7]
7. (a) State Pilling Bedworth rule. Explain its significance.
   (b) Explain the difference in the use of anodic and cathodic coatings for corrosion prevention. [7+8]
8. (a) Discuss the principles (at least seven) of green chemistry.
   (b) Write briefly with suitable examples the supercritical Fluid extraction method for green synthesis. [7+8]

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Code No: R10204/R10 **Set No. 3**

I B.Tech II Semester Supplementary Examinations, August 2014
ENGINEERING CHEMISTRY -II
(Common to Civil Engineering, Electrical & Electronics Engineering, Mechanical Engineering, Electronics & Communication Engineering, Computer Science & Engineering, Chemical Engineering, Electronics & Instrumentation Engineering, Bio-Medical Engineering, Information Technology, Electronics & Computer Engineering, Aeronautical Engineering, Bio-Technology, Automobile Engineering, Mining and Petroliem Technology)

Time: 3 hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) How are tensile strength and optical properties influenced by the structure of plastics
   (b) What is meant by Coordination polymerization? Explain its mechanism? [9+6]
2. (a) Explain the useses of plastics in the building, construction & medical sector?
   (b) What is a Thermo plastics resin? Give an example?
   (c) Define the fibres and matrixes? [6+5+4]
3. What is synthetic Rubber and describe the preparation properties and uses of any two synthetic Rubbers. [15]
4. (a) How various types of carbon nano tubes can be formed from grapheme?
   (b) Discuss how nano technology useful.
   (c) What are the advancements of nano technology in Electronics Field [7+4+4]
5. (a) Give an account of
   (i)Constituents of Portland cement (ii) Hydration of Portland cement
   (b) Write short notes on pyrometric cone test and thermal spalling [8+7]
6. (a) Distinguish between thermal and catalytic cracking.
   (b) Write short notes on cetane number
   (c) What is viscosity index of oil? How it is important property? [5+5+5]
7. Define corrosion of metals. What are different types of corrosion? Explain the electrochemical theory of wet corrosion giving its mechanism. [8+7]
8. (a) What is Green Chemistry? Write briefly about Engineering Applications of Green Chemistry?
   (b) Discuss any four Principals of the Green Chemistry. [7+8]

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Code No: R10204/R10 **Set No. 4**

I B.Tech II Semester Supplementary Examinations, August 2014
ENGINEERING CHEMISTRY -II
(Common to Civil Engineering, Electrical & Electronics Engineering, Mechanical Engineering, Electronics & Communication Engineering, Computer Science & Engineering, Chemical Engineering, Electronics & Instrumentation Engineering, Bio-Medical Engineering, Information Technology, Electronics & Computer Engineering, Aeronautical Engineering, Bio-Technology, Automobile Engineering, Mining and Petroliem Technology)

Time: 3 hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Explain the term polymerization and co-polymerization with suitable examples?
   (b) What are the conducting polymers, name four of them & give their engineering applications? [9+6]
2. (a) Discuss briefly fabrication of plastic articles?
   (b) What is the kelvar? How is it prepared, give its properties and useses? [10+5]
3. (a) Write the structre for natural rubber and Guttapercha and also write the difference between the two
   (b) Why Natural rubber needs vulcanization [8+7]
4. (a) Explain SWNT & MWNT
   (b) Describe any one method for the production of nanotubes.
   (c) Descuss the application of fullerenes [5+7+3]
5. (a) Explain the role of gypsum in setting and hardening of cement
   (b) Define glazed ceramics
   (c) What are refractories? Give an account of any three characteristics of a good refractory material [5+5+5]
6. (a) What is octane number? Explain how the structural features of constituent hydrocarbons of gasoline affect the petrol rating.
   (b) How are liquid lubricants classified? Discuss the various methods available for refining mineral oils. [8+7]
7. Write notes on metallic coatings and special paints? [15]
8. What is Green Chemistry and how is it important. Discuss any three Synthetic methods used in green chemistry [15]

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