

Code No: R10204/R10

Set No. 1**I B.Tech II Semester Supplementary Examinations, February 2013****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

1. (a) Give the differences between Chain polymerization & Step growth polymerization?
(b) Write a brief account of emulsion polymerization
(c) Explain the interpretation of conductivity in conjugated polymers? [5+5+5]
2. (a) Distinguish between Thermo settings & Thermo plastics?
(b) Explain with neat sketches any two methods of moulding of plastics? [6+9]
3. (a) What is an elastomer. Explain the characteristic of elastomers
(b) Write short note on Gutta Percha.
(c) Differentiate between a natural rubber and an elastomer. [7+3+5]
4. (a) How various types of carbon nano tubes can be formed from grapheme?
(b) Discuss how nano technology is useful.
(c) What are the advancements of nano technology in Electronics Field [7+4+4]
5. (a) Discuss the merits and demerits of dry and wet process for the manufacture of Portland cement
(b) What are ceramics? How are ceramics glazed?
(c) Write any two types of refractories and their uses [5+5+5]
6. (a) Write a short note on theories, which have been put forward to explain the origin of petroleum.
(b) Discuss any four important properties of a good lubricant [8+7]
7. Define corrosion of metals. What are different types of corrosion? Explain the electrochemical theory of wet corrosion giving its mechanism. [8+7]
8. Green environment is a safer environment. What measures have to be taken for this and explain them in detail with suitable examples [15]

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

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Write an account of the preparation, properties & engineering applications of the following. (i) PVC (ii) Teflon
(b) Write a brief account of following. (i) Tacticity of polymer (ii) Functionality of polymer [9+6]
2. (a) Distinguish between Thermo settings & Thermo plastics?
(b) Explain with neat sketches any two methods of moulding of plastics? [6+9]
3. (a) What are the draw backs of Natural Rubber?
(b) What is compounding of Rubber; discuss one suitable method for compounding rubber [6+9]
4. (a) Explain SWNT & MWNT
(b) Describe any one method for the production of nanotubes.
(c) Discuss the application of fullerenes [5+7+3]
5. (a) Write the chemical reactions that take place (along with temperature) during the manufacture of portland cement
(b) What are ceramics? Discuss their classification [8+7]
6. (a) Write a short note on theories, which have been put forward to explain the origin of petroleum.
(b) Discuss any four important properties of a good lubricant [8+7]
7. (a) What is the basic difference between a paint and varnish.
(b) What are the properties and functions of the constituents of a paint [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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Time: 3 hours**Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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) Distinguish between Thermo settings & Thermo plastics?
(b) Explain with neat sketches any two methods of moulding of plastics? [6+9]
3. What are the additives mixed with natural rubber to improve required properties? Discuss about the different additives briefly? [15]
4. (a) Describe the production of Carbon Nano Tubes by CVD method
(b) Explain the structure of C₆₀.
(c) Write notes on Quantum dots [8+3+4]
5. (a) Explain how Portland cement is manufactured?
(b) What are refractories? Why refractoriness under load is an important property of a refractory? [8+7]
6. (a) What is meant by knocking? How it is related to chemical constitution?
(b) Define and Signify (i) Flash point and fire point (ii) Cloud & Pour point [7+8]
7. Define Anodic and cathodic protection and explain the sacrificial anodic protection and impressed current cathodic protection. [15]
8. Green environment is a safer environment. What measures have to be taken for this and explain them in detail with suitable examples [15]

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Set No. 4**I B.Tech II Semester Supplementary Examinations, February 2013****ENGINEERING CHEMISTRY -II**

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Time: 3 hours**Max Marks: 75****Answer any FIVE Questions****All Questions carry equal marks**

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) What is meant by the moulding? Explain with neat diagram compression & injection moulding of plastics?
(b) Write a note on engineering applications of the plastics? [8+7]
3. (a) Write notes on preparation, properties and uses of styrene-Butadiene Rubber
(b) What are the characteristics of polyurethane, Buna-N, Neoprene and Butyl rubber [7+8]
4. (a) Describe the production of carbon nano tubes by chemical vapour deposition method.
(b) How fullerenes are produced
(c) Write briefly about the carbon nano tubes [7+4+4]
5. (a) What are the constituents of cement?
(b) Discuss about the classification of ceramics
(c) Write short notes on properties of refractories [5+5+5]
6. (a) What are anti knocking agents? Describe the functioning of TEL.
(b) Write short notes on fractional distillation of petroleum.
(c) How are lubricants classified? [5+5+5]
7. Define Anodic and cathodic protection and explain the sacrificial anodic protection and impressed current cathodic protection. [15]
8. What is green chemistry? Explain the phase transfer catalyst for green synthesis, ultra sound assisted method for green synthesis and application of green chemistry. [15]
