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

I B.Tech II Semester Supplementary Examinations, July/Aug. 2015
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) Write a short note on Stereo specific polymers?
   (b) Give the method of preparation, properties & uses of
   (i) Nylon – 6, 6
   (ii) Polycarbonates
   (c) What is meant by copolymerization? Give an example? [5+6+4]
2. (a) Explain any four properties of the plastics?
   (b) Write a note on any three fibre reinforced plastics? [6+9]
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) What are the important applications of Nano Materials.
   (b) What are fullerenes and how they are prepared
   (c) Write any five engineering applications of Carbon Nano Tubes [5+5+5]
5. (a) Explain setting and hardening of cement using chemical equations
   (b) Enumerate the important properties a material should possess in order to be a good refractory material [8+7]
6. (a) Write a short note on Bergius process in producing synthetic petrol from non-petroleum.
   (b) Explain the significance of solid lubricants with example. [8+7]
7. (a) What are the constituents of luminous heat resistant and fire retardant paints?
   (b) Write a note on varnishes and examples. [8+7]
8. What is Green Chemistry and how is it important. Discuss any three Synthetic methods used in green chemistry [15]

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

I B.Tech II Semester Supplementary Examinations, July/Aug. 2015
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) What are polymers and how are they utilized in the engineering field
   (b) Briefly explain the free radical mechanism in addition polymerization
   (c) Write notes on biodegradable polymers. [5+5+5]

2. (a) Write a short note on thermo and thermosetting reclaimed & non reclaimed plastics with suitable examples?
   (b) Write a note on use of bullet proof plastics [10+5]

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) What are carbon nano tubes? How do SWNT and MWNT differ?
   (b) Write the engineering applications of carbon nano tubes?
   (c) What are fullerenes and how they are produced? [5+5+5]

5. (a) Compare the dry and wet processes for producing cement
   (b) What are glazed and unglazed ceramics? [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) Explain with the help of examples the differential aeration corrosion.
   (b) Differentiate between direct chemical corrosion and electrochemical corrosion. [8+7]

8. Give a brief note on how can engineers protect the environment. [15]

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

I B.Tech II Semester Supplementary Examinations, July/Aug. 2015
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) What are the conducting polymers? Give an example & explain its engineering applications?
   (b) Write a short note on Engineering polymers and their applications? [7+8]

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

3. (a) What are the differences in properties of natural rubber and volcanized rubber.
   (b) Write shot note on mastication. [10+5]

4. (a) Describe the production of Carbon Nano Tubes by CVD method
   (b) Explain the structure of $C_{60.}$
   (c) Write notes on Quantum dots [8+3+4]

5. (a) Explain the manufacture of cement in detail
   (b) Define and classify refractories with examples [8+7]

6. (a) Write notes on flash and fire points of a lubricant
   (b) Write short notes on
   (i) Refining of gasoline
   (ii) Reforming of gasoline
   (iii) Gasoline from polymerization. [9+6]

7. (a) What is galvanic series? How does it help to predict corrosion of metal?
   (b) Describe at least three methods employed for the protection of metals from corrosion. [8+7]

8. Discuss the significance of green chemistry towards cleaner production and sustainable developments. Give suitable examples. [15]

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

I B.Tech II Semester Supplementary Examinations, July/Aug. 2015
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) Explain the Casting & Blowing fabrication methods of plastics?
   (b) Write notes on applications of plastics? [6+9]
3. (a) Explain how polyurethanes are prepared? What are their properties and applications
   (b) Explain the Engineering application of Rubber [9+6]
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) Write a short note on decay of cement concrete and its prevention.
   (b) Explain any three properties of ceramics.
   (c) Explain the differences between acidic and basic refractories with suitable examples. [5+5+5]
6. (a) What is crude oil? Write short notes on refining of crude petroleum. What are the various fractions obtained from petroleum?
   (b) Write a short note on flash and fire points of lubricant? [9+6]
7. What is corrosion? How it is classified? Discuss the mechanism of dry and wet corrosions. [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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