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I/IV B.Tech. DEGREE EXAMINATIONS, NOV/DEC-2017

Second Semester

CSE/ECE/EEE

ENGINEERING CHEMISTRY-II

Time: Three Hours **Maximum marks:60**

Answer Question No.1 Compulsory **12X1=12 M**

Answer ONE Question from each Unit **4X12=48 M**

1. Answer the following
   a) Nano materials
   b) Applications of nanochemistry
   c) Properties of nanomaterials
   d) Beer's law
   e) Types of chromatography
   f) Principle of IR spectroscopy
   g) P-doing
   h) Semiconductor
   i) Instrinsic semiconductor
   j) Photovoltaic energy storage
   k) Photo corrosion
   l) Principle involved in regeneration of photo electric chemical cell.

UNIT-I

2. a) What are the various methods of preparation of nanomaterials?
   b) What are the applications of nanomaterials in medicine and diagnosis?

(OR)

3. Explain the following
   a) Carbon nanotubes
   b) Fullerenes

UNIT-II

4. a) Explain the principle and applications of NMR spectroscopy
   b) Briefly outline the instrumentation of UV-Visible spectrophotometer.

(OR)

P.T.O

5. Explain the following

   i) Principle & application of Gas chromatography

   ii) Application of HPLC

UNIT-III

6. a) Explain band theory of solids.

   b) Write a note on types of semiconductors.

(OR)

7. a) Discuss any one method of preparation of semiconductor

   b) What are semiconductor devices?

UNIT-IV

8. Explain the following

   i) Photoelectric chemical reactions

   ii) Solar energy harvesting & its significance

(OR)

9. Give a note on the following

   i) Protection of semiconductor electrodes

   ii) Electrically conducting polymers.

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I/IV B. Tech. DEGREE EXAMINATIONS, JUNE / JULY 2017

SECOND SEMESTER

BT / CSE / ECE / EEE

ENGINEERING CHEMISTRY - II

Time : **Three Hours** Maximum Marks : **60**

Answer Question No. 1 Compulsory. 12x1=12 M

Answer ONE question from each Unit. 4x12=48 M

1. Answer the following.
   a) Nanotubes.
   b) Fullerenes.
   c) Nanochemistry.
   d) Define UV.
   e) Define NMR.
   f) Chromatography.
   g) Solids.
   h) Semiconductors.
   i) Electrical energy.
   j) Conductive.
   k) Polymers.
   l) Coating material.

UNIT - I

2. Write short notes on
   a) Introduction to nano chemistry.
   b) Engineering applications of nanochemistry.

(OR)

3. Discuss in details about preparation of nanomaterials and carbon nanotubes ?

UNIT - II

4. Explain the principle, instrumentation and applications of NMR spectroscopy techniques ?

(OR)

P.T.O.

5. Describe the principal of chromatography and explain the principal and instrumentation of High performance liquid chromatography ?

UNIT - III

6. Explain the following.
   a) Band theory of solids.
   b) Preparation of semiconductors.

(OR)

7. a) Describe the types of semiconductors ?
   b) Explain the preparation of semiconductors devices ?

UNIT - IV

8. a) Explain the photo voltaic energy storage ?
   b) What are the regenerative photo electro chemical cells ?

(OR)

9. Explain the following.
   a) Electrically conductive polymers.
   b) Electrodes with chemically modified surfaces.