

[19091103 - 19]

GAYATRI VIDYA PARISHAD
COLLEGE FOR DEGREE AND PG COURSES (AUTONOMOUS)
ENGINEERING & TECHNOLOGY PROGRAM
I/IV B. Tech. : CSE

Semester - I

CHEMISTRY

(w.e.f 2019 -2020 admitted batch)

Date: 13-12-2019

TIME: 10:00 AM TO 1:00 PM

Max. Marks: 70

PART-A is Compulsory.

Answer any other **FOUR** questions from **PART-B**.

All questions carry equal marks.

PART - A

- 1 Write brief notes on all the following questions.
- a) Impurities in water
 - b) Bragg's law
 - c) Condensation polymerization
 - d) Pilling - Bedworth rule
 - e) LPG
 - f) Nano wires
 - g) Phosphate coatings

$$7 \times 2 = 14 \text{ M}$$

PART - B

Answer any **Four** of the following

- 2 (A) Explain Cold lime - soda process of softening of water with a neat sketch.
- (B) How the disinfection of water is carried by using Chlorine water and bleaching powder? What is break-point Chlorination?
- 3 (A) What are extrinsic semiconductors? Explain the purification of solids by Zone refining with a neat sketch.
- (B) What is Superconductivity? Give the classification and any four applications of Superconductivity.
- 4 (A) Give the differences between thermosetting plastics and thermoplastics
- (B) Explain addition polymerisation and give the free radical mechanism of addition polymerisation.
- 5 (A) Define Corrosion. Write short notes on the following
 - i) Pitting Corrosion
 - ii) Water line Corrosion

$$4 \times 14 = 56 \text{ M}$$

[P]

(B) What are metallic coatings? Explain the following
i) Influence of nature of metal on corrosion
ii) Chromate coatings

6 (A) Explain the proximate analysis of coal and give its significance.

(B) How is coke manufactured by Otto Hoffman's process?

7 (A) What are nanomaterials? Explain the properties and applications of the following
i) Fullerenes ii) carbon nanotubes

(B) Give one method of synthesis of nanomaterials by bottom - up approach and give the applications of nanomaterials in catalysis and medicine.

8 (A) Explain the following

i) Classification of lubricants with examples.
ii) Mechanism of fluid film or thick film lubrication.

(B) Explain the softening of water by ion-exchange method.

GAYATRI VIDYA PARISHAD
COLLEGE FOR DEGREE AND PG COURSES(A)
(Affiliated to Andhra University), VISAKHAPATNAM
ENGINEERING & TECHNOLOGY PROGRAM

I B. Tech. Semester – II Supplementary Examinations, Sep-2022
Common For ECE and ME

SUBJECT :: ENGINEERING CHEMISTRY (20092103)
(for 2020-2021 admitted batch)

Date: 20-09-2022 (F.N) Time: 10:00AM TO 01:00PM Max. Marks: 70

PART - A

1 Answer ALL the questions $5 \times 2 = 10 M$

- Give specifications of boiler feed water. Which impurities are responsible for Scale and Sludge formation in boilers.
- Write a brief note on Semiconductors.
- Explain water line corrosion with equations.
- Explain any two special paints with examples.
- Explain unique properties of nanomaterials which makes them novel materials in advanced technology.

PART - B

Answer ALL the questions $5 \times 12 = 60 M$

- With the help of a neat sketch, explain zeolite process for water softening with its advantages and limitations.
- Name the Chief sources of water for domestic and Industrial purpose. Mention the impurities associated with various sources of water. Write a brief note on hardness.

OR

- Write short note on: i) Sedimentation with Coagulation.
ii) Break point Chlorination.
- What is Reverse Osmosis? How desalination of sea water is carried out using this technique? Mention its advantages over ion exchange process.

- 4(a) Explain the terms : Addition polymerisation, Copolymerisation and Condensation polymerisation with examples.
- (b) Write a short note on Styrene monomer- storage and biological effects of styrene.

OR

- 5(a) Distinguish Thermosetting and Thermoplastic resin with examples.
- (b) Write a short note on reinforced plastics.
- 6(a) Define corrosion of metals. Explain mechanism of Dry Chemical corrosion with examples.
- (b) Write a brief note on: i) differential aeration corrosion. ii) effect of nature of corroding environment on rate of corrosion.

OR

- 7(a) Compare Anodic and Cathodic coatings and Explain with examples.
- (b) What is meant by Electroplating? Discuss Electroplating of copper.
- 8(a) Explain Proximate analysis of coal with its significance. How is it carried out?
- (b) Write a short note on Metallurgical Coke.

OR

- 9(a) What is meant by Knocking? Explain Knocking in Petrol and Diesel engines.
- (b) Explain any two mechanisms of Lubrication.
- 10(a) Write a brief note on Fullerenes and their applications.
- (b) Discuss Bottom-up process for preparation of Nanomaterials.

OR

- 11(a) Discuss Top-down process for preparation of Nanomaterials.
- (b) Explain any three applications of Nanomaterials in medicine.

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ENGINEERING & TECHNOLOGY PROGRAM
I/IV B. Tech. Semester – II Regular Examinations, Sep-2022

= 14 M

Common For ECE and ME
SUBJECT :: ENGINEERING CHEMISTRY (20092103)
 (W.e.f 2021-2022 admitted batch)

Date: 20-09-2022 (F.N) Time: 10:00am to 01:00pm Max. Marks: 70

PART - A

1 Answer ALL the questions

 $5 \times 2 = 10 \text{ M}$

- a) Reverse Osmosis
- b) Polymerization.
- c) Electroless plating
- d) Knocking.
- e) Fullerenes.

M

PART - B

Answer ALL the questions

 $5 \times 12 = 60 \text{ M}$

- 2(a) Discuss Lime – Soda process method for the softening of hard water.
- (b) Explain Scale formation and Sludge formation in boilers. How are they removed?

OR

- 3(a) What is Break – Point Chlorination? State its significance.
- (b) Write the standards of drinking water.

- 4(a) How will you synthesis Nylon (6,6) from 1,3 Butadiene?
- (b) Explain free radical addition polymerization mechanism.

OR

5(a) Differentiate Addition and Condensation Polymerization.

(b) Write a note on Conducting polymers.

6(a) Explain the oxidation corrosion.

(b) How metallic coatings are useful in the prevention of corrosion.

OR

7(a) Explain i) Pitting corrosion ii) Stress corrosion.

(b) Discuss in detailed of Organic Coatings.

8(a) Write the characteristics and applications of LPG.

(b) Discuss the mechanism of Lubrication.

OR

9(a) Explain Ultimate analysis of coal? What is its significance?

(b) Brief note on

i)Octane Number

ii) Cetane Number

10(a) Write the properties and applications of Nanowires.

(b) Discuss the synthesis of Fullerols.

OR

11(a) Write a note on carbon nano tubes.

(b) Write the Engineering applications of Nanomaterials.

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ENGINEERING & TECHNOLOGY PROGRAM

I B. Tech. Semester – II Supplementary Examinations, Sep-2022

Common For ECE and ME
SUBJECT :: CHEMISTRY (19092103)
 (for 2019 -2020 admitted batch)

Date: 20-09-2022 (F.N) Time: 10:00AM TO 01:00PM Max. Marks: 70

PART - A

1 Answer ALL the questions $7 \times 2 = 14 M$

- a) Scale and Sludge
- b) Superconductivity
- c) Conducting polymers
- d) Electrochemical Corrosion
- e) Octane number
- f) Nanowires
- g) Organic Coatings

PART - B

Answer any FOUR of the following questions $4 \times 14 = 56 M$

- 2(a) Illustrate how the water is softened by Lime-Soda method with neat diagram and relevant equations.
- (b) Explain the domestic treatment of water for Municipal supply with relevant equations.

- 3(a) Define Semiconductors? Discuss different types of Elemental Semiconductors with conduction process.
- (b) Mention different types of Solids. Discuss in detail different types of Crystalline solids.

4(a) Define Polymerization. Discuss the mechanism of Addition polymerization with relevant chemical equations.

(b) Define Plastics. Discuss the reinforced plastics.

5(a) What is Dry Corrosion? Illustrate mechanism dry corrosion with neat sketch and explain how it is related to Pilling – Bedworth rule.

(b) What are Inorganic Coatings? Discuss about Phosphate and Anodized coatings.

6(a) Discuss the Fractional distillation of refining of Petroleum with neat sketch.

(b) Define Lubricant. Explain the different types of mechanisms of lubrication.

7(a) Define Nanocomposite materials. Discuss the classification of Nanocomposite materials and their engineering applications

(b) Give detail account on Top-down and Bottom-up approaches of synthesis of Nanomaterials.

8(a) What is Electroless Plating? Discuss one example of Electroless Plating with applications.

(b) Discuss the classification of Lubricants with examples.

GAYATRI VIDYA PARISHAD
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ENGINEERING & TECHNOLOGY PROGRAM
I.B. Tech. Semester – II Supplementary Examinations, Sep-2022
Common For ECE and ME

SUBJECT :: CHEMISTRY (19092103)

Date: 20-09-2022 (F.N) (for 2019 -2020 admitted batch)

Time: 10:00AM TO 01:00PM Max. Marks: 70

PART - A

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$7 \times 2 = 14$ M

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- b) Superconductivity
- c) Conducting polymers
- d) Electrochemical Corrosion
- e) Octane number
- f) Nanowires
- g) Organic Coatings

PART - B

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- (b) Give detail account on Top-down and Bottom-up approaches of synthesis of Nanomaterials.
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- (b) Discuss the classification of Lubricants with examples.

GAYATRI VIDYA PARISHAD
COLLEGE FOR DEGREE AND PG COURSES(A)
RUSHIKONDA, VISAKHAPATNAM, (Affiliated to Andhra University)
ENGINEERING & TECHNOLOGY PROGRAM
I/IV B. Tech. SEMESTER - I Regular Examinations, Mar-2022

CIVIL ENGINEERING**SUBJECT :: ENGINEERING CHEMISTRY (20091103)**

Date: 19-04-2022 (F.N) Time: 02:00 PM to 05:00 PM Max. Marks: 70
 (W.e.f. 2021-2022 Admitted BATCH)

PART - A

1 Answer ALL the questions

- WHO limits of drinking water.
- Conducting polymers.
- Special paints.
- Full forms of LPG and CNG.
- Chemical composition of cement.

PART - A

$5 \times 2 = 10\text{M}$

PART - B

$5 \times 12 = 60\text{ M}$

Answer ALL the questions

- Describe the principle and process of softening of water by zeolite method.
- Explain any three reasons for formation of scales in boilers.

OR

- Define hardness. Discuss the method of determination of hardness of a water sample.
- Define break point chlorination. Explain the process and its significance.

- Explain addition polymerization and condensation polymerization with examples.

(b) Discuss ionic mechanism of addition polymerization.

OR

5(a) Distinguish between thermoplastics and thermosetting resins.

(b) Explain preparation and properties of Nylon-6,6.

6(a) Write a note on i) Pitting corrosion ii) Stress corrosion

(b) Define galvanic series and explain its significance.

OR

7(a) Discuss the principle and process of electroplating.

(b) Explain organic coatings with suitable examples.

8(a) Describe proximate analysis of a coal sample.

(b) Making use of a neat diagram, explain refining process of petroleum.

OR

9(a) Explain classification of lubricants with examples.

(b) Discuss any three significant properties of lubricating oils.

10(a) Explain different steps involved in manufacture of cement.

(b) Outline various measures to be taken for protecting concrete from decay.

OR

11(a) Write a note on classification of refractories.

(b) Discuss the properties and engineering applications of ceramics.

[19092103-19]

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COLLEGE FOR DEGREE AND PG COURSES
(AUTONOMOUS)
ENGINEERING & TECHNOLOGY PROGRAM
I/IV B. Tech. :: CE / CSE / ECE / ME
SEMESTER - II
SUBJECT :: CHEMISTRY
(w.e.f 2019 -20 admitted batch)

Date: 21-10-2021

Max. Marks: 70

TIME: 10:00 AM TO 1:00 PM

PART - A

1 Answer All of the following questions $7 \times 2 = 14 M$

- a) Zeolite process
- b) Bragg's law
- c) Nylon6,6
- d) Chromate coatings
- e) Octane number
- f) fullerenes
- g) WHO limits

PART - B

Answer any FOUR of the following questions $4 \times 14 = 56 M$

- 2 a) How do you determine hardness of water by EDTA method?
- b) Summarize boiler problems and control measures.

- 3 a) Outline imperfections in crystals.
- b) Explain purification of solids by zone refining method.

- 4 a) Elaborate the mechanism of addition polymerization.
- b) Classify conducting polymers with suitable examples.
- 5 a) What are the factors that affect corrosion? Explain.
- b) What are organic coatings? Explain. What are the applications.
- 6 a) Describe Otto Hoffmann's process of manufacture of coke.
- b) Explain the properties of lubrication oils.
- 7 a) Explain top-down and bottom-up approaches of preparation of nanomaterials.
- b) Outline the applications of nanomaterials in catalysis, tele communication and medicine.
- 8 a) Outline municipal water treatment.
- b) Analyze coal by ultimate analysis. What is its significance?

[20092103-20]

GAYATRI VIDYA PARISHAD
COLLEGE FOR DEGREE AND PG COURSES (AUTONOMOUS)
ENGINEERING & TECHNOLOGY PROGRAM

I/IV B. Tech. :: ECE / ME

SEMESTER – II

SUBJECT :: ENGINEERING CHEMISTRY

(w.e.f 2020 -2021 admitted batch)

DATE: 21-10-2021

Max. Marks: 70

TIME: 10:00 AM TO 01:00 PM

PART - A

1 Answer All of the following questions

$5 \times 2 = 10M$

- a) How to eliminate temporary hardness of water? Explain.
- b) Define the term monomer and polymer.
- c) Discuss role of nature of oxide film formed in oxidation corrosion with examples.
- d) Write a note on aniline point.
- e) Define carbon nanotube. List any four day to day live commercial applications of nanotechnology.

PART - B

Answer the following questions

$5 \times 12 = 60 M$

- 2(a) Write a note on Scale and sludge. Mention the disadvantages of scale and sludge formation in boilers.
- (b) Choose a water softening method among lime-soda, Zeolite and Ion-exchange for high pressure boilers. Discuss the process with a neat sketch and mention its limitations.

OR

3(a) What is meant by potable water? Mention the requisites of a potable water. Explain Break point Chlorination with graph.

- (b) Explain reverse osmosis method for desalination of seawater. Give its advantages.

4(a) State the monomers used in the making of the following:

- i) polythene ii) Nylon 6, 6 iii) PVC

Distinguish addition and condensation polymerisation.

- (b) Explain the mechanism of addition polymerization through free radicals.

OR

5(a) Write a note on effect of polymer structure on properties of plastics.

- (b) Explain about reinforced plastics with examples.

6(a) Explain the mechanism of following types of corrosion:

- i) Pitting corrosion ii) Stress corrosion

(b) Explain the effect of following factors on the rate of corrosion: i) anodic and cathodic areas

- ii) position in galvanic series
iii) Nature of corrosion product

OR

7(a) Define paint and mention requisitions of good paint.

Discuss the essential ingredients of paint with examples and mention their functions.

- (b) Explain electroless painting with an example and give its advantages over electro plating.

8(a) Discuss the importance of ultimate analysis of coal.

(b) Write a brief note octane number and cetane number.

OR

9(a) Describe in brief, the manufacture of metallurgical coke by Otto Hoffman's method.

(b) Discuss the classification of lubricants with examples.

10(a) Explain top-down approach for synthesis of nanomaterial with a suitable method.

(b) Write a short note on fullerenes and mention their applications.

OR

11(a) Explain Bottom up approach for synthesis of nanomaterial with a suitable method.

(b) Discuss the applications of nanomaterials in catalysis and Telecommunication.

GAYATRI VIDYA PARISHAD
COLLEGE FOR DEGREE AND PG COURSES(A)

(Affiliated to Andhra University) RUSHIKONDA, VISAKHAPATNAM,
ENGINEERING & TECHNOLOGY PROGRAM

I/IV B. Tech. SEMESTER – I Supplementary Examinations, Apr-2022

CIVIL ENGINEERING

SUBJECT :: ENGINEERING CHEMISTRY (20091103)

Date: 19-04-2022 (A.N) Time: 02:00 PM to 05:00 PM Max. Marks: 70

PART - A

1 Answer ALL the questions

5 x 2 = 10M

- a) Caustic Embrittlement
- b) Reinforced Plastics
- c) Pitting Corrosion
- d) Cetane Number
- e) Special Cements

PART - B

Answer ALL the questions

5 x 12= 60 M

- 2(a) Explain the desalination of water by reverse osmosis method.
- (b) What is zeolite? How can it be used to soften water?
What are the disadvantages of zeolite process?

OR

- 3(a) Explain the causes and removal of sludge and scales in boiler feed water.
- (b) Explain the various steps involved in municipal water treatment.
- 4(a) What is polymerisation? Explain the free radical mechanism of addition polymerisation by taking suitable example.

(b) Write a detailed note on conducting polymers.

OR

5(a) Write the ionic polymerisation mechanism by taking suitable examples.

(b) Define plastics. Differentiate between Thermoplastics and Thermosetting Plastics.

6(a) What is corrosion? Explain the mechanism of electrochemical corrosion.

(b) What is galvanisation and tinning? Explain.

OR

7(a) What is electroless plating? Explain its process in detail.

(b) Write short notes on: stress corrosion and galvanic series.

8(a) Describe the manufacture of metallurgical coke by ottohoffmans method.

(b) Define the term lubricant. Write its functions and classify them with suitable examples.

OR

9(a) Write a detailed note on proximate analysis of coal.

(b) What is lubrication? Explain the lubrication mechanisms.

10(a) Write a note on setting and hardening of cement with chemical reactions.

(b) What are refractories? Classify them with examples.

OR

11(a) Write a note on manufacture of Portland Cement by dry process.

(b) What are ceramics? Explain any four properties.

GAYATRI VIDYA PARISHAD
COLLEGE FOR DEGREE AND PG COURSES(A)
 (Affiliated to Andhra University), RUSHIKONDA, VISAKHAPATNAM
ENGINEERING & TECHNOLOGY PROGRAM
I/IV B. Tech. CSE SUPPLEMENTARY EXAMINATIONS, APR-2022
SEMESTER - I
SUBJECT :: CHEMISTRY (19091103)
 (w.e.f 2019 -2020 admitted batch)

Date: 19-04-2022 (A.N) Time: 02:00 PM TO 05:00 PM Max. Marks: 70

PART - A

1 Answer ALL the questions $7 \times 2 = 14M$

- a) Write about Breakpoint Chlorination.
- b) What are Super Conductors?
- c) Differentiate between Thermoplastics and Thermosetting Plastics.
- d) How temperature and conducting medium influence the Corrosion?
- e) What is knocking? Give any two Antiknocking agents.
- f) State any four important properties of Fullerenes.
- g) What is meant by Aniline point?

PART - B

Answer any **FOUR** the questions $4 \times 14 = 56 M$

- 2a) What is hardness? Explain determination of hardness of water by EDTA method.
- b) Explain Electrodialysis method for desalination of sea water.
- 3a) What are Intrinsic Semiconductors and Extrinsic Semiconductors? Explain conduction process in them.

- b) Define Liquid Crystals. Mention their types and applications.
- 4a) Discuss the Conducting Polymers.
- b) Discuss the mechanism of free radical addition polymerization.
- 5a) Discuss the mechanism of Electrochemical Corrosion.
- b) Explain electroplating and electroless plating to protect the metal from corrosion.
- 6a) Explain proximate analysis of coal and discuss the significance of result.
- b) What is a Lubricant? Explain the mechanism of hydrodynamic Lubrication.
- 7a) What are carbon Nanotubes? Mention the types. Explain preparation of carbon Nanotubes by any one of the method.
- b) Explain the Engineering applications of Nanomaterial's.
- 8a) Explain i) Pitting Corrosion.
ii) Impressed current cathodic protection.
- b) Explain the process of refining of Petroleum.

GAYATRI VIDYA PARISHAD
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ENGINEERING & TECHNOLOGY PROGRAM

I/IV B. Tech. SEMESTER – I Regular Examinations, Apr-2022

Common For CSE, ECE and ME

SUBJECT :: ENGINEERING CHEMISTRY (20091103)
(W.e.f. 2021-2022 Admitted Batch)

Date: 19-04-2022 (A.N) Time: 02:00 PM to 05:00 PM Max. Marks: 70

PART - A

1 Answer ALL the questions 5 x 2 = 10M

a) Which of the following requires more soda for soften.

Give your reason

i) CaSO_4 and ii) CaCl_2

b) Give any four domestic articles which are synthesized by thermoplastics.

c) Define differential aeration corrosion.

d) Define octane number.

e) Write any four applications of nanocomposites.

PART - B

Answer ALL the questions 5 x 12= 60 M

2(a) Explain Hot lime soda process for the softning of water with neat diagram.

(b) Define Osmosis and explain the process of Reverse osmosis.

OR

3(a) Write the responsible reactions for the formation scale and slugde in boilers.

(b) What is zeolite and explain how it helps to removethe hardness of water.

4(a) Write the working mechanism of p-doping and n-doping conducting polymers by taking polyacetylene as example.

(b) Write the differences between Thermoplastics and Thermosetting resins.

OR

5(a) Write a note on FRP's (Fibre reinforced plastics)

(b) Explain condensation polymerization and give two polymers which are prepared by this process

6(a) Compare the process of metallic coatings of Galvanizing and Tinning.

(b) Explain Dry and Wet corrosion with mechanism.

OR

7(a) How the temperature, moisture, area of the anode and position in the galvanic series influence the rate of corrosion.

(b) Write a note on organic coatings.

8(a) Define acid number and write the properties and applications of lubricant oils

(b) Write the importance of analysis of coal and explain proximate analysis of a coal sample.

OR

9(a) Explain the manufacture of coke by Otto Hoffman's method

(b) Give the carbon range, melting point range and applications of all fractions in the process of refining of petroleum.

10(a) Write the preparation and applications of fullerenes.

(b) Explain carbon nano tubes and mention its applications.

OR

11(a) Explain the process of preparation of nano materials by top-down and bottom up methods.

(b) Write the applications of nanomaterials in catalysis and telecommunication.

GAYATRI VIDYA PARISHAD
COLLEGE FOR DEGREE AND PG COURSES (AUTONOMOUS)
ENGINEERING & TECHNOLOGY PROGRAM

I/IV B. Tech. : ECE / ME

SEMESTER – II

SUBJECT : CHEMISTRY

(w.e.f 2019 -2020 admitted batch)

Date: 19-10-2020

Max. Marks: 50

TIME: 3:00 PM TO 5:00 PM

PART - A

$4 \times 2 = 8 \text{ M}$

1 Answer any Four of the following

- a) Municipal Water Treatment.
- b) Imperfection in Crystals.
- c) X – Rays and Bragg's Equation Law.
- d) Reinforced Plastics.
- e) Galvanic Series.
- f) LPG.
- g) Application of fullerenes.

PART - B

Answer any Three of the following

$3 \times 14= 42 \text{ M}$

- 2 (a) What are the sources of water?

- (b) Explain what is Reverse Osmosis method.

3 (a) Write about the fundamental laws of crystal structure.

(b) Write note on classification of solids.

4 (a) What is Polymerization? Explain addition polymerization with suitable example.

(b) Explain thermodynamics of Polymerization process.

5 (a) Discuss the factors effecting the Corrosion.

(b) What is Corrosion? Explain the different types of corrosion.

6 (a) Write the mechanism and properties of lubricating oils.

(b) Explain Otto Hoffmann's process.

7 (a) Explain the applications of nanomaterials in catalysis.

(b) Write short notes on nanotubes and nanowires.

8 (a) Describe the coke manufacturer.

(b) Write the controlling methods of Corrosion.

GAYATRI VIDYA PARISHAD

COLLEGE FOR DEGREE AND PG COURSES (AUTONOMOUS)

ENGINEERING & TECHNOLOGY PROGRAM

I/IV B. Tech. :: CSE

SEMESTER - I

SUBJECT:: CHEMISTRY

(w.e.f 2019 -2020 admitted batch)

Date: 20-07-2021

TIME: 10:00 AM TO 01:00 PM

PART - A

1 Answer All of the following.

- a) Caustic Embrittlement.
- b) Principle of Zone refining process .
- c) Preparation of Nylons.
- d) Water line corrosion.
- e) Lubrication and Lubricant.
- f) Biogas.
- g) Classification of Refractory materials.

PART - B

Answer any FOUR of the following.

4 x 14= 56 M

- 2 (a) What are Scales? How they can be removed by internal treatment methods?
- b) Explain by any methodology by which all the ions can be removed from water.

- 5 (a) What are the different types of polymerization? Explain with suitable examples.
(b) Explain the synthesis of polystyrene .Mention the storage and biological effects of styrene.
- 6 (a) Explain the factors effecting corrosion.
(b) Write a note on metallic coatings and their application.
- OR
- 7 (a) What do you understand by chemical corrosion? Explain with examples.
(b) What are organic coatings? Explain.
- 8 (a) Describe manufacture of coke by ottohoffmann's process.
(b) Explain the mechanism of lubrication.
- OR
- 9 (a) Explain proximate analysis of coal. What is its significance?
(b) What are the properties of lubricating oils?
- 10 (a) Write a note on synthesis of carbon nanotubes and nano wires.
(b) What are the properties and applications of fullerenes?

OR

- 11 (a) Outline top down and bottom up approaches.
(b) What are the applications of nano materials?

GAYATRI VIDYA PARISHAD
COLLEGE FOR DEGREE AND PG COURSES(A)
RUSHIKONDA, VISAKHAPATNAM, (Affiliated to Andhra University)
ENGINEERING & TECHNOLOGY PROGRAM
I/IV B. Tech. SEMESTER – I Regular Examinations, Apr-2022
CSE

SUBJECT :: ENGINEERING CHEMISTRY (20091103)
(w.e.f 2020 -2021 admitted batch)

Date: 19-04-2022 (AN) TIME: 01:00 PM to 05:00 PM Max. Marks: 70

PART - A

- 1 Answer All of the following questions $5 \times 2 = 10M$**
- a) Types of impurities in water
 - b) Biological effects of styrene
 - c) Galvanic series
 - d) Functions of lubricants
 - e) Nano composites

PART - B

Answer the following questions $5 \times 12 = 60 M$

- 2 (a) Write a short note on break point chlorination.**
- (b) Explain the lime-soda process for softening of hard water and write down the chemical reactions involved in it.**

OR

- 3 (a) Explain the desalination process by reverse osmosis method.**
- (b) What is zeolite? How it can be used to soften the water?**

- 4 (a) Explain the condensation polymerisation with an example.**
- (b) Discuss the effect of polymer structure on the properties of plastics.**

OR

5 (a) Write a short note on conducting polymers.

(b) Discuss the addition polymerisation mechanism.

6 (a) What is corrosion? Explain the mechanism of chemical corrosion.

(b) What is electroplating? Explain the process.

OR

7 (a) Write a short note on

i) stress corrosion ii) pitting corrosion

(b) What are the constituents of paints and explain their function.

8 (a) Describe the manufacture of metallurgical coke by Otto Hoffmans method.

(b) Describe the fractional distillation of petroleum.

OR

9 (a) Write a short note on octane number and knocking.

(b) Explain any three important properties of lubricants.

10(a) Explain the preparation of nano materials by bottom up approach.

(b) Write the applications of nano materials in the field of medicine and telecommunications.

OR

11 (a) How to prepare nano materials by top-down approach?

(b) Write the preparation, properties and uses of nano tubes.

[20091103-20]

GAYATRI VIDYA PARISHAD
COLLEGE FOR DEGREE AND PG COURSES (AUTONOMOUS)
ENGINEERING & TECHNOLOGY PROGRAM
I/IV B. Tech. :: CE
SEMESTER - I
SUBJECT :: ENGINEERING CHEMISTRY
(w.e.f 2020 -2021 admitted batch)

Date: 20/07/2021 Max. Marks: 70
TIME: 10:00 AM to 01:00 PM

PART - A

- 1 Answer All of the following questions $5 \times 2 = 10M$
- a) Break point chlorination
 - b) Biological effects of styrene.
 - c) Special paints.
 - d) Octane number.
 - e) Chemical composition of cement.

PART - B

Answer the following questions $5 \times 12 = 60 M$

- 2 (a) Explain the lime soda process used for softening of hard water. Write down the chemical reactions involved in the process.
(b) Write a detailed note on Boiler troubles.

OR

- 3 (a) How ion exchangers are useful for softening of water.
(b) What is reverse osmosis. How can it be used to obtain fresh water from sea water.

- 4 (a) Write the preparation ,properties and uses of Polythene and Polystyrene.
(b) Explain the effects of Polymer structure on properties of Plastics.

OR

(b) Give the differences between thermosetting plastics and thermoplastics.

5 (a) Mention the essential ingredients of a paint. What are their functions? Give examples for each ingredient.

(b) Write a note on the following

i) Electroplating ii) Galvanic series

6 (a) Explain the proximate analysis of coal and give its significance.

(b) How is coke manufactured by Otto Hoffman's process?

7 (a) What are the raw materials of Portland Cement? Explain the process of setting and hardening of Portland Cement with necessary equations.

(b) What is a refractory? Explain the following properties of refractories.

i) Refractoriness ii) Refractoriness under load (R-U-L)

iii) Porosity

8 (a) Describe the classification, properties and engineering applications of Ceramics.

(b) What are scales? Give the reasons for their formation and disadvantages of scale formation.

[19091103 -19]

GAYATRI VIDYA PARISHAD
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ENGINEERING & TECHNOLOGY PROGRAM

I/IV B. Tech. : CE

Semester - I

CHEMISTRY

(w.e.f 2019 -2020 admitted batch)

Date: 13-12-2019

Max. Marks: 70

TIME: 10:00 AM TO 1:00 PM

PART-A is Compulsory.

Answer any other FOUR questions from PART-B.

All questions carry equal marks.

PART - A

1 Write a brief note on all the following questions: $7 \times 2 = 14$ M

- a) Break point chlorination
- b) Super conductivity
- c) Conducting polymers
- d) Galvanization
- e) Octane number
- f) Aniline point
- g) Thermal Spalling



PART - B

Answer any Four of the following

$4 \times 14 = 56$ M

2 (A) How Hardness can be removed by adding Lime and Soda explain with necessary chemical reactions?

(B) What is Reverse Osmosis? Describe the process of removal of Saline substances in a solution.

3 (A) Explain the Band theory of solids with energy diagrams

(B) Discuss how defects in crystals shows semi conductivity property

4 (A) Differentiate Thermosetting plastics from thermosetting resins.

(B) Write a note on Thermodynamics of polymerization process.

5 (A) What are Organic Coatings? Explain the constituents of paints with examples

(B) Discuss Various factors effecting corrosion

- 6 (A) What is ranking of coal? How proximate analysis is carried
- (B) Define Lubrication. Explain the mechanism of Thick Film lubrication.
- 7 (A) Describe with neat sketch the Manufacturing of Cement by wet process.
- (B) Explain the various reasons for Failure of a Refractory Material.
- 8 (A) Discuss in detail about electrochemical corrosion.
- (B) Write a note on liquid crystals.