

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-I Remedial examination March 2009

Subject code: 110001

Subject Name: CHEMISTRY

Date: 18 / 03 / 2009

Time: 02:00am To 04:30pm

Instructions:

Total Marks: 70

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q. 1

- (a) Answer in short. 05
1. Name a method which separates both Ionic and Non-ionic impurities from water.
 2. Which is the purest form of commercial iron? What is the % of carbon in it?
 3. Name the different form of Electromagnetic Waves. Give IR and UV-Visible range.
 4. Which constituent of cement causes its Initial setting?
 5. Which property of Bakelite makes it use it as electrical appliances?
- (b) Define the following: 05
1. Calorific value of a fuel.
 2. Lubricant.
 3. Smog.
 4. Fibres.
 5. Fermentation.
- (c) Reason it: 04
1. During electroplating, pH of bath is strictly maintained.
 2. Production cost of hydroelectricity is cheaper than the electricity generated in the thermal power station.
 3. Dolomite bricks are rarely use as a direct refractories.
 4. The part of the nail inside the wood undergoes corrosion easily.

Q: 2

- (a) Answer in short: **07**
1. Different units of Hardness.
 2. Pilling bed worth rule
 3. pH and it's measurement.
 4. Acid rain
 5. Composition of CNG\LPG.
 6. Setting and Hardening of cement.
 7. Biomembrane.
- (b) Answer the followings:
1. Explain the mechanism of Free radical polymerization. **03**
 2. Write the formation of Nylon 6, 6 and Polyester. **02**
 3. Write a note on fibre made from natural sources. **02**

OR

- (b) Answer the followings:
1. What are plastics? Show its importance by briefing some unique properties of it. **03**
 2. Write a note on Vulcanization of rubber. **02**
 3. What is melt spinning and wet spinning? **02**

Q: 3

- (a) Write the principle and uses of IR and UV spectroscopy. **04**
- (b) Discuss the Zeolite process to obtain the water use for industrial process. **04**
- (c) Write a note on: **06**
- (1) Function of Lubricants.
 - (2) Constituent of Paints.

OR**Q: 3**

- (a) Write the principle and function of Adsorption Chromatography. **04**
- (b) What are the requirements of Municipal water supply? How the raw water is treated? **04**
- (c) Write a note on: **06**
- (1) Anodising and Electroplating.
 - (2) Constituent of Paints.

Q: 4

- (a) Classification of Fuel with example. **04**
- (b) (1) Explain in brief the application of Biotechnology. **04**
- (2) What is the purpose of alloy making? Quote some examples. **02**

- (c) Give the difference between: **04**
(1) Dry and Wet corrosion.
(2) Galvanic and Stress corrosion.

OR

Q: 4

- (a) Define Corrosion. Explain the protection of metal through Galvanizing and Tinning. **04**
(b) (1) Write a note on Biofuel. **04**
(2) Brief some physical properties of metals. **02**
(c) Explain the characteristic of good fuel. **04**

Q: 5

- (a) Explain in detail the setting and hardening of Portland cement. **04**
(b) Give an account of Water pollution and its control. **04**
(c) (1) What is Hydroelectricity? Explain the basic principle of its generation. **04**
(2) Define Refractories along with its classification. **02**

OR

Q: 5

- (a) Write in brief about Green house effect along with its consequence. **04**
(b) Write in short about. **04**
(1) Reaction involves in the preparation of cement.
(2) RCC and PCC.
(c) Write a note on: **06**
(1) High alumina and Zirconia bricks.
(2) Solar cooker and Solar cell.
