

Code No: R07A1BS07

R07

Set No. 2

I B.Tech Examinations, June 2011
ENGINEERING CHEMISTRY
Common to Mechanical Engineering, Mechatronics, Production
Engineering, Automobile Engineering

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Give the functions of lubricants.
(b) Describe the mechanism of extreme pressure lubrication.
(c) How a viscous lubricant is converted into grease? [6+6+4]
2. (a) Write any four ingredients of compounding of rubber. Give their functions with example.
(b) Write short notes on
 - i. Polysulphide rubber
 - ii. Nylon 6. [8+8]
3. Write a note on the following:
 - (a) Caurtic embrittlement
 - (b) Phosphate conditioning
 - (c) Carry over and its disadvantages. [6+6+4]
4. (a) What is pyrometric cone equivalent? How it is determined for a refractory? What is its significance?
(b) Write a short note on:
 - i. porosity
 - ii. Thermal Conductivity
 - iii. Dimensional Stability.
 - iv. Strength [8+8]
5. (a) How rate of corrosion is influenced by pH? Discuss the Pourbaix diagram for iron in water.
(b) Explain any three different forms of corrosion. Mention the suitable methods of protection for such corrosion. [8+8]
6. (a) Explain how fuels are classified with suitable examples.
(b) Explain the significance of the following constituents present in coal.
 - i. Moisture
 - ii. Volatile matter
 - iii. Ash and

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- iv. Fixed carbon. [8+8]
7. (a) List the differences between anodic coating and cathodic coating.
(b) How zinc coated on iron prevents corrosion?
(c) Explain sand blasting method of surface preparation. [8+4+4]
8. Discuss briefly the following :
- (a) Estimation of hardness of water
(b) Dis-infection of water. [8+8]

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Answer any FIVE Questions
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1. (a) Give the functions of lubricants.
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(b) Explain the significance of the following constituents present in coal.
 - i. Moisture
 - ii. Volatile matter
 - iii. Ash and
 - iv. Fixed carbon. [8+8]
4. (a) List the differences between anodic coating and cathodic coating.
(b) How zinc coated on iron prevents corrosion?
(c) Explain sand blasting method of surface preparation. [8+4+4]
5. (a) Write any four ingredients of compounding of rubber. Give their functions with example.
(b) Write short notes on
 - i. Polysulphide rubber
 - ii. Nylon 6. [8+8]
6. (a) What is pyrometric cone equivalent? How it is determined for a refractory? What is its significance?
(b) Write a short note on:
 - i. porosity
 - ii. Thermal Conductivity
 - iii. Dimensional Stability.

iv. Strength [8+8]

7. Discuss briefly the following :

(a) Estimation of hardness of water

(b) Dis-infection of water. [8+8]

8. (a) How rate of corrosion is influenced by pH? Discuss the Pourbaix diagram for iron in water.

(b) Explain any three different forms of corrosion. Mention the suitable methods of protection for such corrosion. [8+8]

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Set No. 1

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Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

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2. (a) What is pyrometric cone equivalent? How it is determined for a refractory? What is its significance?
(b) Write a short note on:
 - i. porosity
 - ii. Thermal Conductivity
 - iii. Dimensional Stability.
 - iv. Strength [8+8]
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(b) Describe the mechanism of extreme pressure lubrication.
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(b) Explain the significance of the following constituents present in coal.
 - i. Moisture
 - ii. Volatile matter
 - iii. Ash and
 - iv. Fixed carbon. [8+8]
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 - (a) Estimation of hardness of water
 - (b) Dis-infection of water. [8+8]
6. (a) List the differences between anodic coating and cathodic coating.
(b) How zinc coated on iron prevents corrosion?
(c) Explain sand blasting method of surface preparation. [8+4+4]
7. (a) Write any four ingredients of compounding of rubber. Give their functions with example.

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- (b) Write short notes on
- i. Polysulphide rubber
 - ii. Nylon 6.

[8+8]

8. Write a note on the following:

- (a) Caurtic embrittlement
- (b) Phosphate conditioning
- (c) Carry over and its disadvantages.

[6+6+4]

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Set No. 3

I B.Tech Examinations, June 2011

ENGINEERING CHEMISTRY

**Common to Mechanical Engineering, Mechatronics, Production
Engineering, Automobile Engineering**

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. (a) Explain how fuels are classified with suitable examples.
(b) Explain the significance of the following constituents present in coal.
 - i. Moisture
 - ii. Volatile matter
 - iii. Ash and
 - iv. Fixed carbon. [8+8]
2. (a) List the differences between anodic coating and cathodic coating.
(b) How zinc coated on iron prevents corrosion?
(c) Explain sand blasting method of surface preparation. [8+4+4]
3. (a) Write any four ingredients of compounding of rubber. Give their functions with example.
(b) Write short notes on
 - i. Polysulphide rubber
 - ii. Nylon 6. [8+8]
4. (a) How rate of corrosion is influenced by pH? Discuss the Pourbaix diagram for iron in water.
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 - (a) Estimation of hardness of water
 - (b) Dis-infection of water. [8+8]
6. (a) What is pyrometric cone equivalent? How it is determined for a refractory? What is its significance?
(b) Write a short note on:
 - i. porosity
 - ii. Thermal Conductivity
 - iii. Dimensional Stability.
 - iv. Strength [8+8]

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7. Write a note on the following:

- (a) Caurtic embrittlement
- (b) Phosphate conditioning
- (c) Carry over and its disadvantages.

[6+6+4]

8. (a) Give the functions of lubricants.

(b) Describe the mechanism of extreme pressure lubrication.

(c) How a viscous lubricant is converted into grease?

[6+6+4]
