

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**

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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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**R07****Set No. 4**

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

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1. (a) Give the functions of lubricants.  
(b) Describe the mechanism of extreme pressure lubrication.  
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(a) Caurtic embrittlement  
(b) Phosphate conditioning  
(c) Carry over and its disadvantages. [6+6+4]
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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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(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.

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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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**R07****Set No. 1**

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**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

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1. (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]
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]
3. (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]
4. (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]
5. Discuss briefly the following :
  - (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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**R07****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

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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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**Set No. 3**

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]

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