Code.No: R05010301 | R05 | SET-1

I - B.TECH EXAMINATIONS, DECEMBER - 2010
ENGINEERING CHEMISTRY
(COMMON TO ME, MCT, MEP, AME)

Time: 3hours **Max.Marks:80**

Answer any FIVE questions
All questions carry equal marks

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1.a) How do you estimate hardness of water by soap titration method?
b) Calculate the temporary, permanent and total hardness of water in ppm from the following determination of 20 ml of 0.05 H solution of standard hard water required 40 ml of EDTA for titration. 20 ml of hard water consumed 30 ml of EDTA and 20 ml of water after boiling required 20 ml of EDTA for the titration. [8+8]

2.a) Explain the mechanism of purification of water by ion-exchange process? Give its significance.
b) What is priming and foaming? How is it prevented in boilers?
c) Differentiate between scales and sludges. [7+5+4]

3.a) Explain Bergius process with a neat diagram.
b) What is octane rating?
c) What are the advantages of gaseous fuels over solid and liquid fuels? Explain flue gas analysis by Orsat's method. [6+2+8]

4.a) Why metals undergo corrosion? Write a brief account on different types of corrosion.
b) Write notes on:
i) Metal cladding
ii) Galvanising
iii) Phosphate coatings. [8+8]

5.a) Explain different mechanisms of lubrication.
b) What is viscosity? How is it determined by Red wood viscometer? [8+8]

6.a) What are electrical insulators? Write about their characteristic features.
b) What are the causes for the failure of a refractory material? [8+8]

7.a) What is vulcanisation? How is it carried out?
b) Write about the properties and applications of the following polymers:
i) LDPE
ii) Nylon
iii) Teflon
iv) Urea-formaldehyde resin. [6+10]

8. Write short notes on the following:
a) Cutting tools
b) Distempers
c) Desalination of brakish water
d) Passivity. [4+4+4+4+4]

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Code.No: R05010301 | R05 | SET-2

I - B.TECH EXAMINATIONS, DECEMBER - 2010
ENGINEERING CHEMISTRY
(COMMON TO ME, MCT, MEP, AME)

Time: 3hours **Max.Marks:80**

Answer any FIVE questions
All questions carry equal marks

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1.a) Explain Bergius process with a neat diagram.
b) What is octane rating?
c) What are the advantages of gaseous fuels over solid and liquid fuels? Explain flue gas analysis by Orsat's method. [6+2+8]

2.a) Why metals undergo corrosion? Write a brief account on different types of corrosion.
b) Write notes on:
i) Metal cladding
ii) Galvanising
iii) Phosphate coatings. [8+8]

3.a) Explain different mechanisms of lubrication.
b) What is viscosity? How is it determined by Red wood viscometer? [8+8]

4.a) What are electrical insulators? Write about their characteristic features.
b) What are the causes for the failure of a refractory material? [8+8]

5.a) What is vulcanisation? How is it carried out?
b) Write about the properties and applications of the following polymers:
i) LDPE
ii) Nylon
iii) Teflon
iv) Urea-formaldehyde resin. [6+10]

6. Write short notes on the following:
a) Cutting tools
b) Distempers
c) Desalination of brakish water
d) Passivity. [4+4+4+4+4]

7.a) How do you estimate hardness of water by soap titration method?
b) Calculate the temporary, permanent and total hardness of water in ppm from the following determination of 20 ml of 0.05 H solution of standard hard water required 40 ml of EDTA for titration. 20 ml of hard water consumed 30 ml of EDTA and 20 ml of water after boiling required 20 ml of EDTA for the titration. [8+8]

8.a) Explain the mechanism of purification of water by ion-exchange process? Give its significance.
b) What is priming and foaming? How is it prevented in boilers?
c) Differentiate between scales and sludges. [7+5+4]

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Code.No: R05010301 | R05 | SET-3

I - B.TECH EXAMINATIONS, DECEMBER - 2010
ENGINEERING CHEMISTRY
(COMMON TO ME, MCT, MEP, AME)

Time: 3hours **Max.Marks:80**

Answer any FIVE questions
All questions carry equal marks

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1.a) Explain different mechanisms of lubrication.
b) What is viscosity? How is it determined by Red wood viscometer? [8+8]

2.a) What are electrical insulators? Write about their characteristic features.
b) What are the causes for the failure of a refractory material? [8+8]

3.a) What is vulcanisation? How is it carried out?
b) Write about the properties and applications of the following polymers:
i) LDPE
ii) Nylon
iii) Teflon
iv) Urea-formaldehyde resin. [6+10]

4. Write short notes on the following:
a) Cutting tools
b) Distempers
c) Desalination of brakish water
d) Passivity. [4+4+4+4+4]

5.a) How do you estimate hardness of water by soap titration method?
b) Calculate the temporary, permanent and total hardness of water in ppm from the following determination of 20 ml of 0.05 H solution of standard hard water required 40 ml of EDTA for titration. 20 ml of hard water consumed 30 ml of EDTA and 20 ml of water after boiling required 20 ml of EDTA for the titration. [8+8]

6.a) Explain the mechanism of purification of water by ion-exchange process? Give its significance.
b) What is priming and foaming? How is it prevented in boilers?
c) Differentiate between scales and sludges. [7+5+4]

7.a) Explain Bergius process with a neat diagram.
b) What is octane rating?
c) What are the advantages of gaseous fuels over solid and liquid fuels? Explain flue gas analysis by Orsat's method. [6+2+8]

8.a) Why metals undergo corrosion? Write a brief account on different types of corrosion.
b) Write notes on:
i) Metal cladding
ii) Galvanising
iii) Phosphate coatings. [8+8]

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Code.No: R05010301 | R05 | SET-4

I - B.TECH EXAMINATIONS, DECEMBER - 2010
ENGINEERING CHEMISTRY
(COMMON TO ME, MCT, MEP, AME)

Time: 3hours **Max.Marks:80**

Answer any FIVE questions
All questions carry equal marks

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1.a) What is vulcanisation? How is it carried out?
b) Write about the properties and applications of the following polymers:
i) LDPE
ii) Nylon
iii) Teflon
iv) Urea-formaldehyde resin. [6+10]

2. Write short notes on the following:
a) Cutting tools
b) Distempers
c) Desalination of brakish water
d) Passivity. [4+4+4+4+4]

3.a) How do you estimate hardness of water by soap titration method?
b) Calculate the temporary, permanent and total hardness of water in ppm from the following determination of 20 ml of 0.05 H solution of standard hard water required 40 ml of EDTA for titration. 20 ml of hard water consumed 30 ml of EDTA and 20 ml of water after boiling required 20 ml of EDTA for the titration. [8+8]

4.a) Explain the mechanism of purification of water by ion-exchange process? Give its significance.
b) What is priming and foaming? How is it prevented in boilers?
c) Differentiate between scales and sludges. [7+5+4]

5.a) Explain Bergius process with a neat diagram.
b) What is octane rating?
c) What are the advantages of gaseous fuels over solid and liquid fuels? Explain flue gas analysis by Orsat's method. [6+2+8]

6.a) Why metals undergo corrosion? Write a brief account on different types of corrosion.
b) Write notes on:
i) Metal cladding
ii) Galvanising
iii) Phosphate coatings. [8+8]

7.a) Explain different mechanisms of lubrication.
b) What is viscosity? How is it determined by Red wood viscometer? [8+8]

8.a) What are electrical insulators? Write about their characteristic features.
b) What are the causes for the failure of a refractory material? [8+8]

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