

Code No: RR10301

RR

Set No. 2

I B.Tech Examinations, December 2010

ENGINEERING CHEMISTRY

Common to ME, MECT, MEP, AE, AME, MMT

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions

All Questions carry equal marks

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1. (a) Discuss the fundamental principles of combustion calculations.  
(b) Write an explanatory note on calorific value of fuels. [8+8]
2. (a) How is metallurgical coke obtained by Beehive oven method. Why is coke preferred to coal in metallurgical processes?  
(b) Describe the estimation of
  - i. sulphur.
  - ii. Nitrogen in coal. [8+8]
3. Compare and contrast the lime-soda process, permutit process and ion-exchange resin process used for softening of water. [16]
4. (a) What are elastomers? Give examples.  
(b) What are the ingredients used in compounding of plastics? What are their functions? [4+12]
5. What are Refractories? Explain Thermal spalling, strength and porosity of the refractories. [16]
6. (a) Define corrosion.  
(b) How will you differentiate oil varnish from spirit varnish?  
(c) Explain with a diagram, why a metal rod half immersed vertically in water starts corroding at the bottom. [4+6+6]
7. Determine the amount of soda and lime required in Kg's to soften 5000 lit of water containing the following salts  $\text{MgCl}_2 = 15.5 \text{ ppm}$ ,  $\text{Ca}(\text{HCO}_3)_2 = 32.5 \text{ ppm}$ ,  $\text{Ca}(\text{NO}_3)_2 = 22.4 \text{ ppm}$ ,  $\text{NaCl} = 50 \text{ ppm}$ ,  $\text{KCl} = 22.5 \text{ ppm}$ . [16]
8. Write a note on lubricants with special reference to their classification, mode of action, examples and applications. [16]

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Code No: RR10301

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Set No. 4

I B.Tech Examinations, December 2010

ENGINEERING CHEMISTRY

Common to ME, MECT, MEP, AE, AME, MMT

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Answer any FIVE Questions  
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  - ii. Nitrogen in coal. [8+8]
8. (a) Discuss the fundamental principles of combustion calculations.  
(b) Write an explanatory note on calorific value of fuels. [8+8]

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Set No. 1

I B.Tech Examinations, December 2010

ENGINEERING CHEMISTRY

Common to ME, MECT, MEP, AE, AME, MMT

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Set No. 3

I B.Tech Examinations, December 2010

ENGINEERING CHEMISTRY

Common to ME, MECT, MEP, AE, AME, MMT

Time: 3 hours

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