Code No: 07A3BS05 **R07** **Set No. 2**

II B.Tech I Semester Examinations,November 2010
ANALYTICAL CHEMISTRY
Chemical Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What happens when temporary hard water is boiled? Write the chemical equations involved.
   (b) Name the methods to remove hardness of water.
   (c) Differentiate hard and soft water. [5+5+6]
2. Write the principles and differences between GC and HPLC. [16]
3. (a) Discuss briefly retention time and retardation factor value.
   (b) In paper chromatographic separation of silver lead and mercury, solvent front was 20 cms while fronts due to these elements was respectively 18,16 and 10. Calculate of R_f values of above metals. [8+8]
4. (a) What are the merits and demerits of Volumetric Analysis?
   (b) What are the different types of reactions in Volumetric Analysis? Illustrate with suitable examples? [8+8]
5. With a neat diagram, explain the various components of an IR instrument and explain their unique functions. [16]
6. (a) State Beer Lambert's law and explain the terms transmittance, absorbance and Molar Extinction Co-efficient .How are they related to each other?
   (b) Calculate the concentration of a solution which had molar absorbtivity of 1.32 $\times$ 10^4 l/m/cm at 530 nm with absorbance of 0.410? [8+8]
7. (a) What are the limitations of gravimetric analysis?
   (b) What is neocupferron? Give its structure and explain its significance in gravimetric analysis. [8+8]
8. (a) Compare GC with ordinary column chromatography.
   (b) Discuss the terms tailing and fronting. [8+8]

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Code No: 07A3BS05 **R07** **Set No. 4**

II B.Tech I Semester Examinations,November 2010
ANALYTICAL CHEMISTRY
Chemical Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What are the limitations of gravimetric analysis?
   (b) What is neocupferron? Give its structure and explain its significance in gravimetric analysis. [8+8]
2. Write the principles and differences between GC and HPLC. [16]
3. (a) Discuss briefly retention time and retardation factor value.
   (b) In paper chromatographic separation of silver lead and mercury, solvent front was 20 cms while fronts due to these elements was respectively 18,16 and 10. Calculate of R_f values of above metals. [8+8]
4. (a) What are the merits and demerits of Volumetric Analysis?
   (b) What are the different types of reactions in Volumetric Analysis? Illustrate with suitable examples? [8+8]
5. (a) State Beer Lambert's law and explain the terms transmittance, absorbance and Molar Extinction Co-efficient .How are they related to each other?
   (b) Calculate the concentration of a solution which had molar absorbtivity of 1.32 $\times$ 10^4 l/m/cm at 530 nm with absorbance of 0.410? [8+8]
6. (a) What happens when temporary hard water is boiled? Write the chemical equations involved.
   (b) Name the methods to remove hardness of water.
   (c) Differentiate hard and soft water. [5+5+6]
7. With a neat diagram, explain the various components of an IR instrument and explain their unique functions. [16]
8. (a) Compare GC with ordinary column chromatography.
   (b) Discuss the terms tailing and fronting. [8+8]

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Code No: 07A3BS05 **R07** **Set No. 1**

II B.Tech I Semester Examinations,November 2010
ANALYTICAL CHEMISTRY
Chemical Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What are the merits and demerits of Volumetric Analysis?
   (b) What are the different types of reactions in Volumetric Analysis? Illustrate with suitable examples? [8+8]
2. (a) What are the limitations of gravimetric analysis?
   (b) What is neocupferron? Give its structure and explain its significance in gravimetric analysis. [8+8]
3. With a neat diagram, explain the various components of an IR instrument and explain their unique functions. [16]
4. (a) What happens when temporary hard water is boiled? Write the chemical equations involved.
   (b) Name the methods to remove hardness of water.
   (c) Differentiate hard and soft water. [5+5+6]
5. Write the principles and differences between GC and HPLC. [16]
6. (a) State Beer Lambert's law and explain the terms transmittance, absorbance and Molar Extinction Co-efficient .How are they related to each other?
   (b) Calculate the concentration of a solution which had molar absorbtivity of 1.32 $\times$ 10^4 l/m/cm at 530 nm with absorbance of 0.410? [8+8]
7. (a) Compare GC with ordinary column chromatography.
   (b) Discuss the terms tailing and fronting. [8+8]
8. (a) Discuss briefly retention time and retardation factor value.
   (b) In paper chromatographic separation of silver lead and mercury, solvent front was 20 cms while fronts due to these elements was respectively 18,16 and 10. Calculate of R_f values of above metals. [8+8]

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Code No: 07A3BS05 **R07** **Set No. 3**

II B.Tech I Semester Examinations,November 2010
ANALYTICAL CHEMISTRY
Chemical Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Discuss briefly retention time and retardation factor value.
   (b) In paper chromatographic separation of silver lead and mercury, solvent front was 20 cms while fronts due to these elements was respectively 18,16 and 10. Calculate of R_f values of above metals. [8+8]
2. (a) Compare GC with ordinary column chromatography.
   (b) Discuss the terms tailing and fronting. [8+8]
3. (a) What are the merits and demerits of Volumetric Analysis?
   (b) What are the different types of reactions in Volumetric Analysis? Illustrate with suitable examples? [8+8]
4. (a) State Beer Lambert's law and explain the terms transmittance, absorbance and Molar Extinction Co-efficient .How are they related to each other?
   (b) Calculate the concentration of a solution which had molar absorbtivity of 1.32 $\times$ 10^4 l/m/cm at 530 nm with absorbance of 0.410? [8+8]
5. Write the principles and differences between GC and HPLC. [16]
6. (a) What are the limitations of gravimetric analysis?
   (b) What is neocupferron? Give its structure and explain its significance in gravimetric analysis. [8+8]
7. With a neat diagram, explain the various components of an IR instrument and explain their unique functions. [16]
8. (a) What happens when temporary hard water is boiled? Write the chemical equations involved.
   (b) Name the methods to remove hardness of water.
   (c) Differentiate hard and soft water. [5+5+6]

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