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

II B.Tech I Semester Examinations,December 2011
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 chemicals responsible for causing acidity in water? How it can be removed?
   (b) Explain estimation of acidity of water. [8+8]
2. (a) What are the different types of concentration units used in Volumetric Analysis?
   (b) What is an Indicator? Explain by taking a suitable example. [10+6]
3. (a) What is meant by precipitation from homogeneous solution? How it is different from the conventional precipitation?
   (b) What are the different anions generated in homogeneous precipitation?
   (c) Explain the usefulness of hydroxides and oxalates in the homogeneous precipitation? [6+4+6]
4. (a) Explain the deviations from Beer-Lambert law.
   (b) Calculate the probable optical path length of a solution with a concentration of 5.32×10^{-5} M and molar absorptivity of 8.74×10^{-3} having an absorbance of 0.897? [8+8]
5. Write a short note on any two of the following:
   (a) Mobile phase used in GC
   (b) Retardation factor
   (c) HETP. [8×2=16]
6. (a) What is the purpose of IR spectrophotometer? Give its significance.
   (b) A Molecule like HCl can undergo stretching vibration only, while the molecule like CO_2 can undergo stretching as well as bending vibrations. Explain. [8+8]
7. Write a short note on the following:
   (a) Solvent degassing
   (b) Solvent pumping systems
   (c) Detectors in HPLC. [16]
8. Write the principle of paper chromatography and discuss the development techniques involved in paper chromatography. [16]

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

II B.Tech I Semester Examinations,December 2011
ANALYTICAL CHEMISTRY
Chemical Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

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1. Write a short note on any two of the following:
   (a) Mobile phase used in GC
   (b) Retardation factor
   (c) HETP. [8×2=16]
2. (a) Explain the deviations from Beer-Lambert law.
   (b) Calculate the probable optical path length of a solution with a concentration of 5.32×10^{-5} M and molar absorptivity of 8.74×10^{-3} having an absorbance of 0.897? [8+8]
3. (a) What are the different types of concentration units used in Volumetric Analysis?
   (b) What is an Indicator? Explain by taking a suitable example. [10+6]
4. (a) What is meant by precipitation from homogeneous solution? How it is different from the conventional precipitation?
   (b) What are the different anions generated in homogeneous precipitation?
   (c) Explain the usefulness of hydroxides and oxalates in the homogeneous precipitation? [6+4+6]
5. (a) What is the purpose of IR spectrophotometer? Give its significance.
   (b) A Molecule like HCl can undergo stretching vibration only, while the molecule like CO_2 can undergo stretching as well as bending vibrations. Explain. [8+8]
6. (a) What are the chemicals responsible for causing acidity in water? How it can be removed?
   (b) Explain estimation of acidity of water. [8+8]
7. Write a short note on the following:
   (a) Solvent degassing
   (b) Solvent pumping systems
   (c) Detectors in HPLC. [16]
8. Write the principle of paper chromatography and discuss the development techniques involved in paper chromatography. [16]

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

II B.Tech I Semester Examinations,December 2011
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 different types of concentration units used in Volumetric Analysis?
   (b) What is an Indicator? Explain by taking a suitable example. [10+6]
2. (a) What are the chemicals responsible for causing acidity in water? How it can be removed?
   (b) Explain estimation of acidity of water. [8+8]
3. (a) Explain the deviations from Beer-Lambert law.
   (b) Calculate the probable optical path length of a solution with a concentration of 5.32×10^{-5} M and molar absorptivity of 8.74×10^{-3} having an absorbance of 0.897? [8+8]
4. Write a short note on any two of the following:
   (a) Mobile phase used in GC
   (b) Retardation factor
   (c) HETP. [8×2=16]
5. (a) What is the purpose of IR spectrophotometer? Give its significance.
   (b) A Molecule like HCl can undergo stretching vibration only, while the molecule like CO_2 can undergo stretching as well as bending vibrations. Explain. [8+8]
6. Write a short note on the following:
   (a) Solvent degassing
   (b) Solvent pumping systems
   (c) Detectors in HPLC. [16]
7. Write the principle of paper chromatography and discuss the development techniques involved in paper chromatography. [16]
8. (a) What is meant by precipitation from homogeneous solution? How it is different from the conventional precipitation?
   (b) What are the different anions generated in homogeneous precipitation?
   (c) Explain the usefulness of hydroxides and oxalates in the homogeneous precipitation? [6+4+6]

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

II B.Tech I Semester Examinations,December 2011
ANALYTICAL CHEMISTRY
Chemical Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

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1. Write a short note on the following:
   (a) Solvent degassing
   (b) Solvent pumping systems
   (c) Detectors in HPLC. [16]
2. Write a short note on any two of the following:
   (a) Mobile phase used in GC
   (b) Retardation factor
   (c) HETP. [8×2=16]
3. Write the principle of paper chromatography and discuss the development techniques involved in paper chromatography. [16]
4. (a) What is the purpose of IR spectrophotometer? Give its significance.
   (b) A Molecule like HCl can undergo stretching vibration only, while the molecule like CO_2 can undergo stretching as well as bending vibrations. Explain. [8+8]
5. (a) Explain the deviations from Beer-Lambert law.
   (b) Calculate the probable optical path length of a solution with a concentration of 5.32×10^{-5} M and molar absorptivity of 8.74×10^{-3} having an absorbance of 0.897? [8+8]
6. (a) What are the chemicals responsible for causing acidity in water? How it can be removed?
   (b) Explain estimation of acidity of water. [8+8]
7. (a) What is meant by precipitation from homogeneous solution? How it is different from the conventional precipitation?
   (b) What are the different anions generated in homogeneous precipitation?
   (c) Explain the usefulness of hydroxides and oxalates in the homogeneous precipitation? [6+4+6]
8. (a) What are the different types of concentration units used in Volumetric Analysis?
   (b) What is an Indicator? Explain by taking a suitable example. [10+6]

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