**KLS Gogte Institute of Technology (Autonomous)**

**Department of Chemistry**

Subject: Applied Chemistry Code:18CHE22

3rd Internal Assessment Test

Semester: II Div: A, B, C, D, E, F and G Date: 15/04/2019

Max. Marks: 25 Duration: 1 Hr **Instructions**: **Answer any five questions. (5 x 5 = 25 marks)**

1. Give the synthesis and applications of polycarbonate and PMMA. [L2, CO4, PO1,12]
2. What are Adhesives? Give the synthesis and applications of epoxy resin. [L2, CO4, PO1]
3. A sample of polymer contains 5, 15, 20 and 25 of molecules of the polymer with molecular weights 5000, 12000, 14000 and 18000. Calculate the number average and weight average molecular weight of the polymer. [L3, CO4, PO1]
4. What are polymer composites? Give the synthesis and applications of photo conducting polyvinyl carbazole. [L2, CO4, PO1]
5. What is desalination? Explain the desalination of water by Electrodialysis method with neat diagram.

[L2, CO5, PO1,5]

1. 25ml of sewage sample was diluted to 600 ml and equal volumes were filled in two BOD bottles. DO in one bottle was determined immediately and 100 ml of solution required 6.5 ml of 0.03N Na2S2O3. The second sample was incubated for 5 days and in DO determination, 100 ml solution required 2.2 ml of the same Na2S2O3. Calculate the BOD of the sample. [L3, CO5, PO1]
2. Define BOD and COD. Calculate COD of an effluent sample when 25 ml of an effluent requires 8cm3 of 0.05N K2Cr2O7 solution for oxidation. [L3, CO5, PO1]

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**Department of Chemistry**

**Subject: Applied Chemistry 3rd Quiz Code: 18CHE22**

**Semester: II** Div: A, B, C, D, E, F and G  **Date: 15/04/2019**

**10 Questions of 1 mark each. Max. Marks: 10 Duration: 15 min.**

1. The glass transition temperature of Polystyrene is greater than that of Polyethylene.

a) True b) False

1. Urethane linkage is represented by \_\_\_\_\_\_\_\_\_\_

a) NH-CO b) NH-COO c) N-CO d) None of these

1. The fibre used in the manufacture of bullet proof vests and jackets are\_\_\_\_\_\_\_\_\_\_

a) Carbon fibre b) Kevlar fibre c) Glass fibre d) None of these

1. Which of the following is a synthetic elastomer?

a) Silicone b) Glue c) Casein d) Teflon

1. Which of the following is the requirement for exhibiting conductivity in polymer?

a) Linear structure b) Presence of oxidizing or reducing agent as dopant

c) Alternative single and double bonds d) All the above

1. In Reverse osmosis the direction of flow of solvent is from\_\_\_\_\_\_\_\_\_\_\_

a) dilute to concentrated b) concentrated to dilute c) any way d) None of these

1. Secondary sewage treatment is used to remove

a) Suspended/floating particles b) Biodegradable organic load c) Total organic load d) Pathogenic bacteria

1. Determination of DO by Winkler’s method is based on the principle of \_\_\_\_\_\_\_\_\_

a) Gravimetry b) Iodometry c) Iodimetry d)Argentometry

1. Hardness of water is expressed in terms of \_\_\_\_\_\_\_\_\_\_equivalent.

a) CaCl2 b) CaCO3 c) MgCl2 d) MgCO3

1. Membrane Bioreactor (MBR) technology is used to treat sewage in \_\_\_\_\_\_\_\_\_\_ treatment.

a)Primary b) Secondary c) Tertiary d) All of these

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**Department of Chemistry**

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**KLS Gogte Institute of Technology (Autonomous)**

**Department of Chemistry**

Subject : Engineering Chemistry Code :15CHE12

Internal Assessment Test - III

Semester : I Div : H,I,J,K,L,M & N Date : 07/11/2015

Max. Marks : 25 Duration: 1 Hr **Instructions** : **Answer any five questions. (5 x 5 = 25 marks)**

1. What are elastomers? Give the synthesis and applications of silicone rubber. [L2], a
2. What are conducting polymers? Explain the mechanism of conduction in Polyacetylene. [L2], a
3. Give the synthesis and applications of Kevlar and Carbon fiber. [L2], a
4. Define adhesive. Explain any four mechanisms of adhesion. [L2], a
5. 30 ml of sewage sample was diluted to 700 ml and equal volumes were filled in two BOD bottles. DO in one bottle was determined immediately and 300 ml of solution required 6.2 ml of 0.025N Na2S2O3. The second sample was incubated for five days and in DO determination, 300 ml solution required 3.2 ml of 0.025N Na2S2O3. Calculate the BOD of the sample. [L3], a
6. Define BOD and COD. 25 ml of sewage water was mixed with 25 ml of K2Cr2O7, acidified and refluxed. The unused K2Cr2O7 required 9.2 ml 0.2 N FAS. In a blank titration 25 ml of K2Cr2O7 required 18.1 ml of 0.2 N FAS. Calculate COD of sample.[L3], a
7. What is desalination? Explain the desalination of sea water by electrodialysis process. [L2], a