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

**Department of Chemistry**

Subject: Applied Chemistry Code:18CHE12

Internal Assessment Test (Special IA)

Semester: I Div: H, I, J, K, L, M and N Date: 22/11/2018

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,CLO4, PO 1,12]
2. A sample of polymer contains 15, 20, 25 and 40 % of molecules of the polymer with molecular weights 10000, 12500, 14000 and 15000. Calculate the number average and weight average molecular weight of the polymer. [L3, CLO4, PO 1, 5]
3. What are conducting and photo conducting polymers? Give the synthesis and applications of polyaniline. [L2 CLO4, PO1, 3]
4. Define glass transition temperature. Explain any 2 factors affecting Tg with an examples

[L2 CLO4, PO 1, 3]

1. 20ml of sewage sample was diluted to 500 ml and equal volumes were filled in two BOD bottles. DO in one bottle was determined immediately and 100 ml of solution required 5.0 ml of 0.023N Na2S2O3. The second sample was incubated for five days and in DO determination, 100 ml solution required 3.0 ml of 0.025N Na2S2O3. Calculate the BOD of the sample. [L3 CLO5, PO 1, 3]
2. Define COD. 25 ml of sewage water was mixed with 25 ml of K2Cr2O7, acidified and refluxed. The unused K2Cr2O7 required 10.0 ml 0.1 N FAS. In a blank titration 25 ml of K2Cr2O7 required 14.5 ml of 0.1 N FAS. Calculate COD of sample. [L3 CLO5, PO 1,3,]
3. Explain instrumentation and applications of UV visible spectrophotometry. [L2 CLO3, PO 1,12]

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

**Department of Chemistry**

**Subject: Applied Chemistry Special Quiz Code: 18CHE12**

**Semester: I Div:** H, I, J, K, L, M and N  **Date: 22/11/2018**

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

1. As the flexibility of a polymer increases

a) Tg Increases b) Tg decreases c) No change in Tg d) None

1. The polymer which conduct electricity in presence of light is called

a) Conducting b) Photoconducting c) Thermal conducting d) None

1. The monomers used in the manufacture of polycarbonate are

a) Epichlorohydrin & bis-phenol-A b) Disocyanate & glycol c) bis-phenol-A & phosgene d) None

1. Light source used in IR spectroscopy is

a) Tungsten b) Xenon c) Nernst glower d) Both a and b

1. Which of the following is a synthetic elastomer?

a) Silicone rubber 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. BOD value includes

a) Total Organic matter b) Total Organic and Inorganic matter c) biodegradable organic matter d) Both a and b

1. Above its glass transition temperature, a polymer is

a) Hard and brittle b) Soft and rubbery c) Viscofluid d) Soft

1. If the degree of polymerization of Polyethylene is 100 what is the molecular weight of PVC,

a) 2800 b) 3000 c) 3400 d) None of these

1. UV visible spectroscopy is based on

a) Emission b) Absorption c) Spin changes d) Vibration changes

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

**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