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

**Department of Chemistry**

**Subject : Applied Chemistry Code :18CHE22**

**Internal Assessment Test - II**

**Semester : II Div : A,B,C,D,E, F & G Date : 18/03/2018**

**Max. Marks : 25 Duration: 1 Hour**

**Instructions** : Answer any five questions. **(5 x 5 = 25 marks)**

1. Define throwing power of a plating bath? The throwing power of an electrolyte in a Haring-Blum cell is 70%. During an experiment 60 mg and X mg of the metal was deposited on both the cathodes kept at a distances of 5 cm and 6 cm from the anode. Calculate the value of ‘X’. [L3],[CO2], [PO 1, 3]
2. Explain the electroless plating of copper on PCB with a neat labeled diagram, bath conditions & reactions.

[L2],[CO2], [PO 1, 3]

1. Explain the following factors affecting electrodeposit:

a) Current density b) pH c) Wetting agents [L2],[CO2], [PO 1, 3]

1. What makes GCV greater than NCV? A fuel sample has the following ultimate analysis: C=84%, S=1.5%, N=0.6%, H= 5.5% and O=8.4%.When 0.85 g of the fuel sample was burnt in a Bomb Calorimeter, the temperature of 1280g of water increased from 14.5oC to 17oC. Calculate NCV of the fuel sample if the water equivalent of calorimeter and latent heat of steam are 0.145kg and 587Cal/g respectively. Given specific heat of water is 4.2kJ/Kg/oC. [L3],[CO3], [PO 1, 3]
2. Explain the fluidized bed catalytic cracking with a neat labeled diagram. [L2],[CO3], [PO 1, 3]
3. Define knocking in IC engine? Explain the mechanism of knocking in petrol engine with reactions.

[L2],[CO2], [PO 1, 3]

1. Explain the instrumentation and applications of Flame Photometry. [L2],[CO2], [PO 1, 12]

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**Subject: Applied Chemistry Quiz II Code: 18CHE22**

**Semester: II Div: A, B, C, D, E, F and G Date: 18/03/2019**

**Academic Year: 2018-19 10 Questions of 1 mark each. Max. Marks: 10**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_are added to plating bath to release the internal stress of the deposit.

A) Wetting agents B) Levellers C) Structure modifiers D) Brighteners.

2. Which of the following is essential in electroless plating?

A) Catalytically active surface B) Reducing agent C) Electricity D) Both A and B.

3. The anode which cannot be used in electroplating of chromium is,

A) Chromium B) Pb – Sb C) Pb – Sn D) Both B and C

4. The tendency of knocking in petrol engines is lowest in

A) Aromatics B) Olefins C) Straight chain hydrocarbons D) Cycloparaffins

5. Addition of ethanol to petrol increases,

A) Octane number B) Calorific value C) Cetane number D) Butane number.

6. Trans esterification is a method to synthesize

A) Power alcohol B) MTBE C) Biodiesel D) Isooactane.

7. The role of cyclone separator in fluidized bed catalytic cracking is

A) to oxidize catalyst B) to retain the catalyst C) to retain cracked vapours D) Both B and C

8. The process of improving octane number of petrol by bringing about structural modification in the hydrocarbon is called

A) Cracking B) Refining C) Reforming D) None of these

9. The IR source use in IR spectrophotometer is,

A) Nernst Glower B) W filament lamp C) Hg arc lamp D)All of these

10. Atomic emission technique used for the detection of metals

A) IR spectroscopy B) TGA C) DSC D) Flame Photometer

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