

V.P.M.'s

B. N. Bandodkar College of Science, Thane

Fourth Semester End Examination, 2017, Feb/March (New syllabus)

USCH403

Duration: 2 hrs 30 min.

Marks: 75

N. B. :

1. All the questions are compulsory
2. Figures to the right indicates full marks
3. Use of log table/ non programmable calculator is allowed

Attempt any four:

Q.1

20

- a Explain purification of glycerol with the help of diagram
- b Describe Continuous process in detail.
- c Explain extraction of oil by solvent extraction method .
- d Explain cleansing action of soap.
- e Explain in detail cathodic protection with neat and labelled diagram.
- f Explain Electroplating process with a neat and labelled diagram.
- g Write a note on Coating on Metal.
- h Explain the following process with examples:
  1. Anodising
  2. Sacrificial Anode process

Q. 2

Attempt any four:

20

- a Describe sulphatising roasting with labelled blast furnance diagram.
- b Write a short note on following process used in metallurgy.
  - i) Wilfley table method
  - ii) Hydraulic classifier method
- c Write a note on any two common operations involved in metallurgy.
- d Write a note on Refining.
- e Write a note on toxic effects due to Lead exposure.
- f Explain Froth Floatation method.
- g Explain toxic effects of Arsenic.
- h Write a note on following organic toxicant
  - i) Aliphatic hydrocarbon
  - ii) Alcohols
  - iii) Pesticides
  - iv) DDT

P.T.O.

**Q. 3 Attempt any four:**

- a Write a note on sources of water pollution.
- b Write a short note on thermal pollution.
- c Write a note on BOD method.
- d Write a short note on filtration process use in primary treatment of waste water.
- e Discuss in brief tertiary treatment of waste water.
- f Write a note on source and effect of soap and detergent in water pollution.
- g Write a short note on different types of water pollutants.
- h Write a note on source and effect of oil spills and marine pollution.

**Q. 4 AI Attempt any Three MCQs from the following**

3

- a One gram of metabolised fat or oil yields----- kcal of energy.  
a) 4                      b) 8                      c) 5.5                      d) 9
- b Oils are esters of .....fatty acids.  
a) Unsaturated    b) Saturated    c) Both    d) None of these
- c .....have less iodine value.  
a) Fats    b) Oils    c) both    d) none of these
- d ----- is a direct loss of Corrosion.  
a) Shut down of process                      b) less efficiency  
c) Depletion of Natural resources                      d) Cost of replacement
- e Nature of ----- corrosion depends on pH of soil.  
a) Crevice    b) Pitting                      c) Underground                      d) Chemical
- f In Galvanising process.....metal is used .  
a)Aluminium    b) Iron                      c) Copper                      d) Zinc

**AII Attempt any Two fill ups from the following**

2

- a Fats are -----state at room temperture.

- b Electrochemical theory of corrosion is based on-----theory of electrolytic solutions
- c .....oils have more than two double bonds.
- d Oxidation always takes place on .....

**B I Attempt any Three MCQs from the following**

3

- a The process of removal of impurities from metallic ores is called as.....
  - a) Beneficiation
  - b) Roasting
  - c) Oxidation
  - d) none of them
- b Metal in ultrapure state is obtained by-----.
  - a) Zone-refining
  - b) Liqutation
  - c) Distillation
  - d) none of these
- c The point at which toxicity appears first is known as the ----- dose.
  - a) Effective
  - b) Threshold
  - c) Lethal
  - d) Mean lethal
- d Magnetic separator consists of ----- rollers.
  - a) Three
  - b) Two
  - c) Four
  - d) Five
- e The dose at which death occurs is called as-----.
  - a) Effective
  - b) Lethal
  - c) Antidote
  - d) none of these
- f Which heavy metal is accumulated at the base of hair?
  - a) Arsenic
  - b) Cadmium
  - c) Lead
  - d) Mercury

**BII Attempt any Two fill ups from the following**

2

- a The study of poisons is called -----.
- b Carbon monoxide poisoning has ..... toxic effect.
- c Lead poisoning can be cured by treatment with chelating agents like-----
- d Metal in ultrapure state is obtained by .....

**C I Attempt any Three MCQs from the following**

3

- a Nitrogen can be converted to nitrate by using ----- bacteria.
  - a) Hydrolytic
  - b) Nitrating
  - c) Ligase
  - d) None of these.
- b Water is often treated with chlorine to-----
  - a) Increase Oxygen content
  - b) Kill germs
  - c) Cause sedimentation
  - d) Remove insoluble impurities

P.T.O.

- c Which of the following is the most versatile biological oxidation method?  
 a) Fluidized bed reactor      b) Trickling filter method  
 c) Reverse Osmosis            d) Activated sludge method
- d The TOC measures all the organic matter which can be converted into-----.  
 a)  $\text{CO}_2$             b)  $\text{H}_2\text{O}$       c)  $\text{NH}_3$       d)  $\text{O}_2$
- e -----microbe convert higher fatty acids to acetic acid and  $\text{H}_2\text{O}$ .  
 a) Methanogenic                      b) Acetogenic  
 c) Hydrolytic                          d) None of these
- f The COD is the amount of -----required for complete oxidation of organic matter.  
 a)Oxygen    b)Nitrogen    c)Carbon    d) None of these

**CII Attempt any Two fill ups from the following**

2

- a An oxidation pond is large ----- pond.
- b ----- destroy the external mucus layer that protect the fish from bacteria and parasite.
- c Pollution due to ----- crafts is the major source of water pollution.
- d During ----- through mixing of water is done by turbine mixing, diffused air aeration or mechanical aeration.

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