

SASMIRA'S INSTITUTE OF MAN-MADE TEXTILES

An Autonomous Institute

Nov/Dec. 2015 ExaminationDIPLOMA COURSE IN MAN-MADE TEXTILE TECHNOLOGY/
TEXTILE CHEMISTRY/KNITTING TECHNOLOGY
(DMTT / DMTC / DKT)**II Semester (Scheme – 2)**

(Time Allowed - 3 hours)

(Marks - 80)

APPLIED CHEMISTRY

- Instructions:**
1. All Questions are compulsory.
 2. Figures to the right indicate full marks.
 3. Use separate Answer Books for Section-I & Section-II.
 4. Illustrate your answer with neat sketches wherever necessary.
 5. Assume suitable additional data, if necessary.
 6. The Atomic weight of C, H, O are 12, 1, 16 respectively.
 7. Molecular weight of H_2SO_4 is 98 amu
 8. Mobiles will be confiscated if found in the Examination Hall.

SECTION – I**Marks**

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| 1. Attempt any six. | 12 |
| a) Define - (i) Electrolyte (ii) Alloys | |
| b) Define Catalysis. Give one use of Catalysis in industry. | |
| c) What is the disperse phase and dispersion media in Indian ink?
Give one application of adsorption. | |
| d) What is a semi permeable membrane? Give one example. | |
| e) Define crystalline and amorphous solids. Give example. | |
| f) What are the types of surfactants? | |
| g) Define and give one example of heterogeneous catalysis. | |
| h) Give the types of Hardness. Name the method used for estimation of Hardness of water. | |
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| 2. Attempt any four. | 16 |
| a) With the help of suitable diagram, explain Tyndall effect. | |
| b) Define Osmosis. Explain the phenomenon with the help of suitable experiment. | |
| c) What is Heterogeneous catalysis? Explain with suitable examples. | |
| d) What are plastics? Distinguish between Thermoplastics and Thermosetting plastics. | |

Marks

- e) How purification of copper sulphate does takes place by crystallization process.
f) Explain any two methods of removal of Hardness of Water.

3. Attempt any two. 12

- a) (i) With the help of suitable example, explain the mechanism of electrolysis.
(ii) A current of 0.5 ampere was passed through a solution of copper sulphate for one hour. Calculate the weight of copper deposited on the cathode. The electrochemical equivalent of copper is 3.294×10^{-7} kg/c.
(iii) Give any two methods for prevention of corrosion.
b) Define adsorption. Distinguish between physical and chemical adsorption. Give two applications of adsorption.
c) What is natural rubber? Give the draw-backs of natural rubber. Distinguish between natural and synthetic rubber.

SECTION –II**4. Attempt any six. 12**

- a) Define functional groups with examples.
b) What are Alkanes? Give general formula for alkanes.
c) What are Aromatic Compounds? Give the structural formula of Benzene.
d) Write structural formula for Ethylene Dichloride.
e) Write the reaction of Chloroform with Oxygen.
f) Give structural formula of Ethanol and Glycol.
g) Define – (i) Aldehydes (ii) Ketones.
h) What are Esters? Give general formula of esters.

5. Attempt any four 16

- a) What is Homologous Series? Explain it with suitable examples.
b) How can we prepare Ethene from Ethyl Alcohol?
c) Explain Nitration and Halogenation of Benzene.
d) What are halogenated hydrocarbons? Give the classification of halogenated hydrocarbons.
e) Give the classification of ethers with suitable examples.
f) Explain diazotization and coupling reactions of aniline.

6. Attempt any two 12

- a) (i) How can we prepare ethylene from calcium carbide in laboratory?
(ii) Write two uses of ethylene.
b) (i) Give the preparation of dimethyl ether by continuous etherification.
(ii) Define Amines. Give the classification of amines.
c) (i) Define alcohols. Explain the structural differences between Primary, Secondary and Tertiary alcohols.
(ii) Give uses of Phenol.
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