

Chemistry (Theory) Paper-II

Attempt FIVE Questions in all. Section-A is Compulsory. Select TWO Questions from Section-B and TWO Questions from Section-C.

SECTION-A

1- Write short answers of any eight:

1x8

- | | |
|---|----------------------|
| i) Partition chromatography | ii) Beer-Lambert Law |
| iii) Flocculation value of a colloidal solution | iv) Lyophilic sols |
| v) Scintillation | vi) Bio-ethanol |
| vii) Silicones | viii) Chromophore |
| ix) Pyrex glass | x) Half life |

SECTION-B

2- a) What is thin layer chromatography (TLC)? How will you prepare the TLC plate and do its activation.

1, 3

b) Describe methods for the purification of sols with special reference to
 i) Dialysis ii) Electrodialysis.

2, 2

3- a) Write briefly about the following terms with reference to UV-Visible spectroscopy:

1x4

- i) Red shift ii) Blue shift iii) Hyperchromic effect iv) Hypochromic effect

b) What is the function of Geiger-Muller Counter? Give its merits and demerits.

2, 1, 1

4- a) Discuss sampling techniques for solid, liquids, gases and solutions in infra-red spectroscopy.

4

b) Discuss the uses of radioactive isotopes in diagnosis and treatment of diseases and industry.

2, 2

5- a) How do you prepare different types of sols by condensation methods?

4

b) Write a note on nuclear reactor.

4

SECTION-C

6- a) What are the different sulphide ores of Copper? Describe the electrolytic refining of copper.

1, 3

b) What is fiber glass and its composition? Give applications of fiber glass.

1, 1, 2

7- a) Describe different raw materials used in ceramics industry.

4

b) What are different ores of Chromium? How chromium is extracted from chromite ore.

4

8- a) What do you mean by azo dyes? Give chemical reactions for the preparation of azo dyes.

1, 3

b) What are nitrogen fertilizers? Discuss process for urea manufacture.

1, 3

9- a) Describe briefly the different steps involved in manufacturing of ordinary glass.

4

b) Discuss the reaction mechanism and optimum conditions for the manufacture of vinegar from alcohol.

1.5, 2.5