

**M.Sc.(Chem.) Semester - 4 (CBCS) Examination**  
**March/April - 2024 (NEW COURSE)**  
**Analysis of Selected Materials (Core)**

**Time: 02:30 Hours****Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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- Q.1 (A) Answer the following question (04)**  
(1) What are food additives and what cannot be considered as food additives?  
(2) Define preservatives, give its introduction and classification.
- Q.1 (B) Answer any two questions out of three (10)**  
(1) Discuss titrimetric estimation of Benzoic acid from:  
(i) Beverages (ii) Ketchups  
(2) Discuss quantitative determination of Saccharin from food sample.  
(3) Answer the following in brief:  
(i) Explain antioxidants with examples.  
(ii) What are Non-nutritive sweeteners? give its examples.
- Q.2 (A) Answer the following questions (04)**  
(1) Discuss the determination of fruit content and total acidity.
- Q.2 (B) Answer any two questions out of three (10)**  
(1) Discuss sample preparation of milk and estimation of urea.  
(2) Discuss any two methods for estimation of fat in milk sample.  
(3) Explain detection of cotton seeds oil as adulterants.
- Q.3 (A) Answer the following question (04)**  
(1) What are saponins? give example and confirmatory test.  
(2) Give introduction and characteristics of vitamins.
- Q.3 (B) Answer any two questions out of three (10)**  
(1) Discuss occurrence and extraction of Resveratrol.  
(2) Write extraction procedure and conformation tests for Hesperidin.  
(3) Give brief introduction of carotenoids and extraction of  $\beta$ -carotene.
- Q.4 (A) Answer the following question (04)**  
(1) Give an account on Indian national standards for drinking water.  
(2) Brief account on types of soil and explain importance of soil analysis.
- Q.4 (B) Answer any two questions out of three (10)**  
(1) Write process to determine biological oxygen demand of waste water.  
(2) Discuss the estimation of Calcium and Magnesium from water sample.  
(3) Give an account on estimation of boron and phosphorus from soil sample.
- Q.5 (A) Answer the following question (04)**  
(1) Explain Aniline point with diagram.
- Q.5 (B) Answer any two questions out of three. (10)**  
(1) Write a note on composition of petroleum based on element and structure.  
(2) Discuss density measurement of petroleum products with its ASTM standards.  
(3) Explain flash and fire point of the petroleum products

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