JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS- 2024

Ph.D./M.Tech.- I/M.Sc.III- Semester (BT)

COURSE CODE (CREDITS):20M1WBT231/21MS2MB414 (3) MAX. MARKS: 25

COURSE NAME: QC ANALYSIS AND MANAGEMENT

COURSE INSTRUCTORS: Dr. Gopal Singh Bisht/Dr. Poonam Sharma MAX. TIME: 1 Hour 30 Minutes

---

Note: ***(a)*** *All questions are compulsory.*
(b)Marks are indicated against each question in square brackets.
(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

---

Q1. Answer the following questions. [2x4=8]

a) Discuss the health benefits of different bioactive compounds.

b) Elaborate the factors affecting extraction process.

c) Elucidate the major food borne illness and their Origin.

d) Describe the nutritional analysis for food quality parameters.

Q2. Develop a standard operating procedure (SOP) for routine HPLC quality control testing, including detailed instructions for instrument setup, sample preparation, chromatographic analysis, data interpretation, and documentation of results. [4]

Q3.a)Given a sample of essential oil, propose appropriate analytical techniques for quality control testing. [2]
b) Explain the concept of "chemo type" in essential oil quality control, describing how variations in chemical composition within a botanical species can affect the therapeutic properties and safety of the oil. [2]

Q4. Evaluate the effectiveness of control charting in detecting and preventing defects in a production process, considering factors such as false alarms, detection sensitivity, and cost-benefit trade-offs. [4]

Q5. Develop a validation master plan (VMP) for a biotechnology company, outlining the overall strategy and approach to validation activities, including roles and responsibilities, timelines, resources, and documentation requirements. [5]