

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2024

MSc-IV Semester (Biotech)

COURSE CODE(CREDITS): 20MSWBT432 (2)

MAX. MARKS: 25

COURSE NAME: Drug Discovery and Development

COURSE INSTRUCTORS: Dr. Udayabanu

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

1. Although proteins are the target for the majority of clinically useful drugs, there are many important drugs which target nucleic acids. Justify with examples following targets could be used to design medicinally important drugs.
 - a. Intercalating agents [2 Marks]
 - b. Topoisomerase poisons (non-intercalating) [2 Marks]
 - c. Alkylating agents [2 Marks]
 - d. Chain cutters [2 Marks]
 - e. Chain terminators [2 Marks]
2. Design a process and explain with examples to disturb the balance between polymerization and depolymerization of microtubules, which would lead to a toxic effect and the inability of the cell to divide. [2.5 Marks]
3. Discuss the importance of physicochemical properties in drug design. Design a protocol for the identification of lead molecules and lead optimization with an example and explain the contribution of Hansch. [3 + 3 + 1.5 Marks]
4. Write a note on the following
 - a. Irreversible inhibitors [2.5 Marks]
 - b. High-throughput screening [2.5 Marks]