

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS-2022

M.Sc-IIInd Semester BIOTECHNOLOGY

COURSE CODE (CREDITS): 20MSWBT232

MAX. MARKS: 25

COURSE NAME: ENVIRONMENTAL BIOTECHNOLOGY

TIME: 1 H 30 Min

COURSE INSTRUCTOR: Dr. ASHOK KUMAR NADDA

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

Section I

Q 1 How the pheromones can be employed to eradicate the harmful pests or insects from the crop fields? Discuss the mechanism of action of pheromones on pests. (2 marks CO II)

Q 2 What are the principles and key problems underlying the use of biopesticides in the Integrated pest management (IPM)? (2 marks CO III)

Section II

Q 3 The biological agents or their products have been successfully exploited to eliminate weeds, diseases, insects or preventing their effects on crop plants. Write their major characteristics, types and suitable examples that are commercially available in the market. (2.5 marks CO III)

Q 4 The development of Plant-Incorporated-Protectants (PIPs) using molecular biology and recombinant technology techniques have replaced the use of chemical or conventional pesticides to a great extent. How these play a key role to protect the crops and plants from the harmful insects or pests? (2.5 marks CO III)

Section III

Q 5 The rate of accumulation of environmental pollutants in the modern civilization is rapidly increasing, why? Write the four major criteria for bioremediation to occur in the site of treatment? (3 marks CO II)

Q 6 Write the examples of halogenated aliphatic compounds and petroleum based hydrocarbons as hazardous pollutants and their effects on living biota. (3 marks CO II)

Section IV

Q 7 Write the five major factors that affects of the bioremediations. Differentiate between Biosparging and Bioventing process. (3+2 marks CO III)

Q 8 The indigeneous microbes existing in the nature play a key role to maintain the balance of ecosystem. Give the example of various genera that facilitate the biodegradation of contaminants in municipal wastewater of activated sludge bioreactors. (3+2 marks CO III)