

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)

CLASS: BTECH  
BRANCH: BIOTECH

SEMESTER : IV  
SESSION : SP/2023

SUBJECT: BE214R1 NATURAL PRODUCT BIOTECHNOLOGY

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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		CO	BL
Q.1(a)	Identify the different sources of natural products and evaluate the importance of secondary metabolites giving suitable examples from each of the sources	[5] 1	2,5
Q.1(b)	Differentiate among the phytochemicals and explain their importance citing suitable examples	[5] 1	4
Q.2(a)	Interpret the importance of terpenoids and illustrate the Mevalonate pathway for terpenoid biosynthesis	[5] 2	3
Q.2(b)	Demonstrate the qualitative and quantitative test performed for screening of any <b>one</b> phytochemical and one bioactive compound obtained from microorganisms	[5] 2	3
Q.3(a)	Analyze any three methods used for extraction of natural products	[5] 3	4
Q.3(b)	Justify the importance of purification and characterization for analysis of natural products giving <b>one</b> suitable method applied in <b>each</b> case	[5] 3	5
Q.4(a)	Select and explain the production technique of essential oils citing <b>one</b> suitable example	[5] 4	5
Q.4(b)	Evaluate the significance of plant cell culture technique for the production of natural products giving <b>one</b> suitable example	[5] 4	5
Q.5(a)	Select and describe the production process of any <b>one</b> nutraceutical. Justify how fermentation provides enhancement in nutraceutical profile	[5] 4	5
Q.5(b)	Organize the steps involved in the production of any <b>one</b> of the flavouring agents	[5] 4	4

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