

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

CLASS: BTECH  
BRANCH: BT

SEMESTER: IV  
SESSION : SP/2020

SUBJECT: BE214 NATURAL PRODUCT BIOTECHNOLOGY

TIME: 2 HOURS

FULL MARKS: 25

**INSTRUCTIONS:**

1. The total marks of the questions are 25.
2. Candidates may attempt for all 25 marks.
3. Before attempting the question paper, be sure that you have got the correct question paper.
4. The missing data, if any, may be assumed suitably.

---

			CO	BL
Q1	(a) Why are natural products important?	[2]	1	3
Q1	(b) Identify and explain the role of plants in production of natural substances giving suitable examples	[3]	1	3
Q2	(a) Classify the phytochemicals used as drugs citing suitable examples	[2]	1	4
Q2	(b) Identify the techniques for cultivation and production of natural products using plants	[3]	1	3
Q3	(a) Illustrate the Shikimic acid biosynthesis pathway	[2]	2	2
Q3	(b) Outline the Mevalonate pathway leading to biosynthesis of Terpenoids. What is the importance of Terpenoids?	[3]	2	2, 3
Q4	(a) Illustrate the Alkaloid biosynthesis pathway citing a suitable example	[2]	2	2
Q4	(b) Can you identify the pathway which results in formation of anthocyanins? Illustrate with the enzymes involved.	[3]	2	4
Q5	(a) Select and explain the characteristics of any <b>one</b> extraction method used to separate desired natural products	[2]	3	3
Q5	(b) Can you identify and analyze the factors responsible for effective extraction of natural products?	[3]	3	3, 4

:::::: 04/03/2020 :::::E