

III SEMESTER B.TECH. (BIOTECHNOLOGY)
END SEMESTER EXAMINATIONS, MARCH 2021
SUBJECT: CELL BIOLOGY [BIO 2153]
REVISED CREDIT SYSTEM

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitably assumed.

1A.	Elaborate the procedure for producing the primates Mito and Tracker?	4M
1B.	What are the steps involved in direct immunofluorescence?	3M
1C.	How does the mechanism of action of phalloidin differ from that of taxol?	3M
2A.	During the course of development genes get expressed at different time points. What decides the time of expression of a gene?	4M
2B.	What is the role of Calcium ions in muscle contraction?	3M
2C.	What are the various types of microtubules in mitotic spindle and what are their roles?	3M
3A.	Is it correct to say that 'variants in regulatory regions make a greater contribution to complex disease than do variants that affect protein sequence'? Justify.	4M
3B.	What are cis-regulatory modules?	3M
3C.	Is it possible for a single gene regulatory protein to coordinate the expression of several different genes? Elaborate.	3M
4A.	For chronic myeloid leukemia imatinib is the gold standard for treatment. What is the mechanism of action of imatinib?	4M
4B.	What is the role of a morphogen gradient?	3M
4C.	What are the various forms of intracellular signaling? Elaborate.	3M
5A.	Tumors are driven by a minor subpopulation of cells. What are these cells called and how do you identify them?	4M
5B.	Elaborate on the stem cell transplantation therapies for cancer.	3M
5C.	How does environmental asymmetry differ from divisional asymmetry?	3M