

TEST -3 EXAMINATION- MAY 2026

M.Tech BT -2nd Sem

COURSE CODE(CREDITS): 14M11BT214(2)

MAX. MARKS: 35

COURSE NAME: Bioentrepreneurship Management

COURSE INSTRUCTORS: Dr Hemant Sood

MAX. TIME: 2Hrs

Note: a) All questions are compulsory. (b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

	Question	Marks
Q1	A biotechnology startup has successfully developed a prototype herbal nanoformulation at laboratory scale. Assess the probable TRL and MRL stages of the product and justify the requirements needed to advance toward commercialization.	6.5
Q2	A) Describe the different stages of Manufacturing Readiness Level (MRL). How can MRL assessment improve supply chain management and production efficiency. B) Explain the role of pilot-scale production, process validation, and quality assurance in advancing a product from TRL-5 to TRL-8 and MRL-4 to MRL-8.	4.5+3.5
Q3.	A biotech entrepreneur seeks ₹2 crore funding for scaling up production of a nano-herbal formulation. The product has patent filing completed, pilot manufacturing established, and preliminary market surveys conducted. Assess the probable IRL stage and recommend additional milestones needed before approaching venture capital investors.	6.5
Q4.	Discuss how incubation centers, accelerators, and government initiatives such as Biotechnology Industry Research Assistance Council (BIRAC), Startup India, and MSME contribute toward improving the IRL of biotechnology startups.	6.0
Q5.	A)“Innovation without IP protection may fail commercially.” Critically analyze this statement with suitable industrial examples. B) Explain the importance of intellectual property rights, biosafety, ethics, and regulatory affairs in bioentrepreneurship curriculum	3.5+4.5