

School of Engineering and Applied Sciences

B.Tech. Biotechnology Semester VI Major Assignment

Important Instructions to Student:

1. Last date for Assignment Submission – **30-May-2020**
2. This assignment carries major **weightage of 50 Marks**. Kindly prepare it very carefully and in a very detailed manner. For any help in this regard, kindly contact your faculties.
3. Front Page of Assignment should clearly include details like:
 - a. Your Name
 - b. UID Number
 - c. Subject
 - d. Class
 - e. Semester

In the event of no such information, we may not be able to assign marks for your assignment, for which responsibility lies with students.
4. You can write and submit assignment through any of the following options:
 - a. Handwritten Assignment – Prepare softcopy of your assignment through suitable apps and send the assignment as one PDF to your respective faculty as mentioned above.
 - b. Typed Assignment – Prepare Assignment with following font setting and submit the assignment to your respective faculty as mentioned above.
 - i. Font Type – Times New Roman or Arial
 - ii. Headings – Font Size 14
 - iii. Text (Except Heading) – 12
 - iv. Normal Margin and Line Spacing maximum 1.15
5. After this lockdown ends, you all have to submit the physical assignment copies to your respective Faculties. So, keep the assignment carefully for submission.
6. While submitting assignment through email, kindly use subject line as Name of the Programe_Name of Course/Branch_Semester_Name o the the Subject. For Example B.Tech._Mechanical_IV_Theory of Machines

Animal Biotechnology- Prof. Afsana Dholakiya		Mode of Submission : Google form only - https://forms.gle/haYZx6Tc7mR8rk3V9 Email – afsana.dholakiya@raiuniversity.edu Subject Line: B.Tech. BT VI AB
1.	What is animal biotechnology? Explain different types of contaminations in animal cell culture and advantages and disadvantages of animal biotechnology.	
2.	What is cell cloning? Explain different cloning techniques used in animal cell culture.	
3	Explain: Cell viability and Cyto-toxicity assays.	
4	What is culture? Explain differences between batch culture and continuous culture with a clean diagram of bio-reactor.	
5.	What is transgenesis and trans-genetic animal? Explain One physical and one chemical technique of gene insertion.	
Genetic Engineering- Prof. Veerendrasingh Nagoria		Mode of Submission : Email or Whatsapp Group Email – veerendra.nagoria31@gmail.com Subject Line: B.Tech. BT VI GE
1.	Prepare a detailed note How Genetic Engineering is helping in developing vaccine in fight towards COVID-19.	
2.	Explain the Diagnostic methods currently being employed by different institution in World to fight against COVID 19.	
3.	Prapare a detailed note on World’s fastest COVID-19 testing – 5 Min testing for COVID-19 developed by Abbott.	
4.	Investigate and confirm what sequencing technology has been used by India to elucidate COVID-19 Genome. Describe briefly Next Generation Sequencing Technologies including Nanopore Sequencing Technology.	
5.	Imagine you are working in a leading lad to introduce anti-viral gene based drug targeting viral RNA of COVID-19. How you will proceed? Prepare a detailed experimental outline for it.	
Plant Biotechnology- Dr. Mohan Raj		Mode of Submission: Google classroom only code: ak3p4nn https://classroom.google.com/u/1/c/Njg1NzYyMDU4Njha Email: mohan.raj@raiuniversity.edu Subject Line: B.Tech. BT VI PB
1.	Explain about anther culture, pollen culture, ovule culture, embryo culture?	
2	Describe about the protoplast isolation, culture, manipulation and fusion?	
3.	Elaborate about the DNA based markers – RFLP, AFLP, RAPD, SSR markers.	
4.	Explain in detail about the blotting techniques in plant biotechnology?	
5.	Elaborate in detail about quantitative trait locus?	

Computational Biology- Prof. Afsana Dholakiya		Mode of Submission: Google form only- https://forms.gle/ZeLoCmkpjNu2gP2M8 Email: afsanadhholakiya@raiuniversity.edu Subject Line: B.Tech. BT VI CB
1.	Give your point of view on how computational biology can affect drug designing and drug modeling for COVID-19.	
2.	Explain: Hidden markov model in detail.	
3.	Explain about latest genome sequence submitted on NCBI for COVID-19 and discuss about it.	
4.	What is alignment? Explain pair-wise and multiple sequence alignment.	
5.	Explain: Dendogram, Phylogram and other tools of phylogenetic analysis.	
Biophysics- Dr. Sandesh Chibber		Mode of Submission: By Email Only Email: sandesh.chibber@raiuniversity.edu Subject Line: B.Tech. BT VI Biophysics
Create a word/Pdf file of given questions in the link and send it by Email https://docs.google.com/forms/d/e/1FAIpQLSe6y8SHRAKcwmQ4k1V3uq0tM2esEHyY-ZTIVRZUU4_xVhDhrg/viewform?usp=sf_link		
Pharmaceutical Chemistry- Dr. Sandesh Chibber		Mode of Submission: By Email Only Email: - sandesh.chibber@raiuniversity.edu Subject Line: B.Tech. BT VI PC
Create a word/Pdf file of given questions in the link and send it by Email https://docs.google.com/forms/d/e/1FAIpQLSdcu7KX5X_lrGZD4knVXdPdtQg74WVZuoEhVVGT_KXESgyi6Q/viewform?usp=sf_link		
Bioprocess and Downstream Technology – Prof. Rohan Parmar		Mode of Submission : Email only Email : - rohan.parmar@raiuniversity.edu Subject Line: B.Tech BT VI BADT
1.	Briefly discuss the types of filtration in downstream processing	
2.	Briefly discuss the types of centrifugation equipments in downstream processing	
3.	Write down short note on sources for industrial fermentation.	
4.	Write down short on recombinant and non-recombinant proteins,	
5.	Write short note fermenter design.	

NOTE: After completing your assignments, contact your respective faculty member and submit the assignment for assessment.