

GANPAT UNIVERSITY  
M.Sc. Second Semester Examination (NEW COURSE) (C.B.C.S) April-May, 2013  
Subject: Biotechnology/Microbiology  
Paper: BTA/MBA 201 RDT Recombinant DNA Technology

Total Marks: 70

Time: 3 hours

Instructions:

1. Attempt any three questions from each section, of which question No. 4 and 8 are compulsory
2. Answer each section in separate answer book.

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**SECTION: I**

- |     |  |    |
|-----|--|----|
| Q-1 | Write in detail about role of restriction enzymes in gene cloning with suitable examples.            | 14 |
| Q-2 | Define Genomic Library and cDNA library. Explain the steps involved in construction of cDNA library. | 14 |
| Q-3 | Explain lytic and lysogenic cycles. Explain $\lambda$ phage as a vector with suitable examples.      | 14 |
| Q-4 | Answer the following questions.(one mark for each question)  | 07 |
|     | 1. Differentiate between blunt ends and sticky ends.   |    |
|     | 2. Define antibiotic resistance genes.   |    |
|     | 3. Full form of AcMNPV   |    |
|     | 4. Role of <i>Vir</i> genes of Ti plasmid  |    |
|     | 5. Which types of restriction enzymes do not usually require ATP?                                    |    |
|     | 6. Define Plasmid  |    |
|     | 7. What are the essential features of vector?  |    |

**SECTION: II**

- |     |  |    |
|-----|--|----|
| Q-5 | Write a short notes on:  | 07 |
|     | a) Yeast artificial chromosome as a vector   | 07 |
|     | b) DNA fingerprinting  | 14 |
| Q-6 | Explain in detail the procedure for strain improvement of commercially useful microorganisms by genetic engineering. | 14 |
| Q-7 | Write short notes on:  | 07 |
|     | a) Role of recombinant bacteria in bioremediation  | 07 |
|     | b) Regulatory affairs of biotechnology   | 07 |
| Q-8 | Answer the following questions.(one mark for each question)  | 07 |
|     | 1. What is the size of plasmid found in Yeast?   |    |
|     | 2. What is site directed mutagenesis?  |    |
|     | 3. Name two human diseases caused by the absence of protein  |    |
|     | 4. What is intellectual property right?  |    |
|     | 5. What do you mean by 'patenting biological materials'?   |    |
|     | 6. Define bioremediation.  |    |
|     | 7. What does PCR stands for? What are the different steps involved in a PCR reaction?                                |    |

-----END OF PAPER-----

**GANPAT UNIVERSITY**  
M.Sc. Second Semester Examination (NEW COURSE) (C.B.C.S) April-May, 2013  
Subject: Biotechnology/Microbiology  
Paper: MBA 202 BTM Biodiversity and Taxonomy of Microorganisms

Time: 3 hours

Total Marks: 70

Instructions:

1. Attempt any three questions from each section, of which question No. 4 and 8 are compulsory
2. Answer each section in separate answer book.

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**SECTION-I**

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|-----|--|----|
| Q-1 | Define Biodiversity. Write in detail about mechanisms of Biodiversity loss       | 14 |
| Q-2 | Give an account of phylogenetic groups of Archaea and their diversity            | 14 |
| Q-3 | Write a note on  |    |
|     | (a) Molecular taxonomy an approach for microbial classification                  | 07 |
|     | (b) Serological methods used for microbial identification                        | 07 |
| Q-4 | Write short answers of the following   | 07 |
|     | (i) Give examples of intracellular bacteria                                      |    |
|     | (ii) Give examples of cell wall lacking bacteria                                 |    |
|     | (iii) Which microorganism produce a relatively resistance structure called Cyst? |    |
|     | (iv) Give full form of DGGE and TGGE   |    |
|     | (v) Enlist steps of the process FAME analysis                                    |    |
|     | (vi) Write down full form of NBPGR and Tm  |    |
|     | (vii) Define: Axenic culture   |    |

**SECTION-II**

- |     |  |    |
|-----|--|----|
| Q-5 | Write in detail about distinguish and significant characteristics of fungi imperfecti  | 14 |
| Q-6 | Write a note on:   |    |
|     | (a) Cultivation and economic importance of plant virus   | 07 |
|     | (b) Industrial applications of algae   | 07 |
| Q-7 | What are filamentous bacteria? Classify filamentous bacteria and add a note on economic importance of representative species from each suborder. | 14 |
| Q-8 | Write short answers of the following:  | 07 |
|     | (i) Give two examples of protozoa belonging to group Ciliophora  |    |
|     | (ii) Give economic importance of Arthrobactor  |    |
|     | (iii) What is eye-spot and Pyrenoid? What is their role in the organism?   |    |
|     | (iv) Write names of diseases caused by prions in different organisms   |    |
|     | (v) What is microcycle sporulation?  |    |
|     | (vi) Write full form of CaMV and TMV   |    |
|     | (vii) Write names of spores found in fungi imperfecti  |    |

-----END OF PAPER-----

GANPAT UNIVERSITY  
M.Sc. Second Semester Examination (NEW COURSE) (C.B.C.S) April-May, 2013  
Subject: Biotechnology/Microbiology  
Paper: BTA/MBA 203 BFT Bioprocess and Fermentation Technology

Time: 3 hours

Total Marks: 70

Instructions:

- 1) Attempt any three questions from each section, of which question No. 4 and 8 are compulsory
- 2) Answer each section in separate answer book.

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**SECTION: I**

Q-1	Explain in detail improvement of Industrial microorganisms for production of primary metabolites	14
Q-2	Discuss the role of various Substrates used in Fermentation process	14
Q-3	Explain Chromatographic techniques used for purification of fermentation product in Downstream process	14
Q-4	1. What is KLa?	01
	2. Enlist different methods used for preservation of Microorganisms	01
	3. What is role of filter aids?	01
	4. Define Feedback Inhibition	01
	5. What is Auxotrophs?	01
	6. Give name of various methods used cell disruption	01
	7. Define Batch culture	01

**SECTION: II**

Q-5	(a) Describe Biochemistry of citric acid production	07
	(b) Write a short note on Microbial Amylase	07
Q-6	Discuss about Microbial production of Bioplastic and its applications	14
Q-7	Discuss about production of Recombinant Monoclonal antibody and give its applications	14
Q-8	1. Give examples of edible Mushroom	01
	2. Give applications of xanthan	01
	3. Write down mode of action of penicillin	01
	4. What is Azeotropic mixture?	01
	5. Give examples of Microbial food preservatives	01
	6. Name few Alcoholic beverages and give name of producers	01
	7. Give name of Therapeutic enzymes	01

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## GANPAT UNIVERSITY

M. Sc. Second Semester Examination (NEW COURSE) (C.B.C.S) April-May, 2013

Subject: Biotechnology/Microbiology

Paper - BTA/MBA 204 CAB Computer Applications and Bioinformatics

Time: 3 hours

Total marks: 70

### Instructions:

1. Attempt any three questions from each section, of which question No. 4 and 8 are compulsory.
2. Answer each section in separate answer sheet.

### SECTION – I

- Q-1 Explain in which circumstances Phylogenetic analysis is required? Enlist various methods for the same. (14)
- Q-2 "Today usage of IT is a boon to research". Justify the statement. (14)  
Add a note on: "Biological web resources"
- Q-3 Differentiate between Pairwise and Multiple sequence alignment. Evaluate the result of BLAST tool. Also discuss about variants of BLAST. (14)
- Q-4 a) Differentiate between "=" and "= =" in programming. (7)  
b) What is "MIPS" ? In what it is measured?  
c) What is BLOSUM? Explain its importance.  
d) Define "Orthologous sequence".  
e) Explain Relational operators in programming.  
f) What is HMM?  
g) Explain the concept of "Boolean searching" with example.

### SECTION-II

- Q-5 Define "Comparative genomics". Why its need arise in the field of research. (14)  
Explain the steps and interpret the results of microarray experiment.
- Q-6 Define "proteome". Mention various tools and techniques in proteomics. (14)
- Q-7 "Modeling and Simulation" belongs to which research field in Bioinformatics? (14)  
Write a note on the same.
- Q-8 Explain the following terms: (7)  
a) Pharmacokinetics  
b) Domain  
c) Ramachandran plot  
d) SCOP  
e) Deprotection  
f) TIFF  
g) Nimblegen and Febit technology

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**GANPAT UNIVERSITY**

**M.Sc. Second Semester Examination (NEW COURSE) (C.B.C.S) April-May, 2013**

**Biotechnology/Microbiology/Geophysics**

**BTB/MBB/GPB 205 LCS: Language and Communication Skills-II**

**Time: 3 hours**

**Total Marks: 70**

**Instructions:**

- 1) Attempt any three questions from each section, of which question No. 4 and 8 are compulsory
- 2) Answer each section in separate answer book.

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**SECTION: I**

- Q-1 Attempt the following: 14**
1. Discuss essentials of body language which we should keep in mind while giving presentation.
  2. Discuss 'self skill analysis' and 'researching organization' as pre-interview preparation techniques.
- Q-2 Attempt the following: 14**
1. Discuss exchanging opinions as an interaction strategy in a group discussion.
  2. Discuss various types of interview questions.
- Q-3 Attempt the following: 14**
1. Define the term debate and discuss its importance as a part of selection process.
  2. Discuss process of interview in detail.
- Q-4 Answer the following in one or two sentences: 07**
1. List out essentials which we should find out about environment before we deliver our presentation.
  2. List out different answering strategies in an interview.
  3. List out essentials that one should find out about organization before appearing in interview in that organization.
  4. List out essentials of selection group discussion.
  5. List out techniques of individual contribution in a group discussion.
  6. Prepare of different steps of interview process.
  7. Define the term 'public speech'.

## SECTION: II

Q-5 Attempt the following:

14

1. Welfare committee of Manohar Chemicals, Mehsana called a meeting of all the employees of the company to know about their expectations from company. Write minutes of this meeting.
2. Miracle Softwares, Bangalore wants to start its branch in Mehsana. The chairman of the company has formed a committee of three persons to examine feasibility of the project. Write a feasibility or survey report on this.

Q-6 Attempt the following:

14

1. Discuss types of technical articles in details.
2. You have completed your study and now you want to join a job. Write an unsolicited application to Lions Hospital, Mehsana for the post of a laboratory technician

Q-7 You feel that one office of Ganpat University should be established at Himmatnagar to facilitate students in filling in different essential forms without travelling to the university headquarter from that place. You have capability to carry out this project. Write a technical proposal for this purpose

14

Q-8 Answer the following in one or two sentences:

07

1. List out different blocks of job application.
2. What should be the maximum length of the title of a report?
3. How many main points are there for the logical presentation of data in a report? List out them.
4. How many main sections one should add in a technical proposal? List out them.
5. List out elements of a technical article.
6. How educational qualification and experience should be presented in our application as per the current trend?
7. In which innovative way details about our known languages can be presented in our resume?

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