

GANPAT UNIVERSITY
M.Sc. Second Semester Examination (NEW COURSE) (C.B.C.S) April-May, 2014
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.

SECTION: I

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| Q-1 | Define restriction enzymes and different types of restriction enzymes and restriction digestion with suitable example. | 14 |
| Q-2 | Define Ti plasmid in details and explain vectors based on Ti Plasmid. | 14 |
| Q-3 | Write a short notes on:
a. Any one screening strategy for cloned DNA.
b. Plasmid and dominant selectable markers. | 07
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07 |
| Q-4 | Answer the following questions
a. cDNA is prepared from what?
b. What are DNA ligases? How do these enzymes participate in the recombinant DNA technology?
c. What is full form of AcMNPV.
d. <i>luc</i> gene is used for what?
e. Define Blue-white selection.
f. Write name of two modifying enzymes with its functions
g. Define prophage | 07
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SECTION: II

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|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Q-5 | Write a short notes on:
a) Yeast vectors
b) PCR | 07
07 |
| Q-6 | Write a shorts on:
a) Protein engineering
b) Patents | 07
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14 |
| Q-7 | Explain in detail synthesis of commercial products by recombinant microorganisms. | 07 |
| Q-8 | Answer the following questions
a. What is the fact of Molecular Biology on which DNA fingerprint is based?
b. The first human protein produced through recombinant DNA technology is _____
c. The first licensed drug produced through genetic engineering is _____
d. Define Molecular Marker?
e. What are some industrial processes that use bacteria?
f. Write difference between RAPD and RFLP
g. Write applications of Microarray | 07
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GANPAT UNIVERSITY

M. Sc. Second Semester Examination (C B C S) April-2014
 Subject: Biotechnology/ Microbiology
 Paper: BTA/MBA 202 BTM Biodiversity and Taxonomy of Microorganisms

Time : 3 Hrs

Marks : 70

Instructions: 1) Attempt any three questions from each section, of which question 4 & 8 are compulsory.

2. Answer each section in separate answer book.

Section-1

Q.-1		Define classification and Explain in detail molecular methods of classification.	14
Q.-2	A	What is speciation? Explain types of Biodiversity.	07
	B	How <i>Archaea</i> differ from <i>Eubacteria</i> . Explain major characteristics of <i>Archaea</i> that gives special features to sustain under extreme environmental condition.	07
Q.-3	A	Give brief account on characteristics of <i>Enterobacteriaceae</i> family.	07
	B	Briefly explain DGGE and TGGE for bacterial identification.	07
Q.-4	a	Define Biodiversity.	01
	b	How peptidoglycan of <i>Archaea</i> differ from <i>Eubacteria</i> .	01
	c	Give full form of DGGE and TGGE.	01
	d	Give an example of cell wall lacking bacteria.	01
	e	Give the contribution of Elect Jeffery in molecular biology.	01
	f	Write any two species of free living nitrogen fixing bacteria.	01
	g	Give flagellar diversity of bacteria.	01

Section-2

Q-5		What is Akaryote? Give detail account on viral classification.	14
Q-6	A	Explain the ecological importance of protozoa.	07
	B	Briefly explain the structure and classification of algae.	07
Q-7	A	Discuss economical importance of fungi.	07
	B	Give brief account on salient features of Actinomycetes.	07
Q-8	a	Give two example of plant virus.	01
	b	What are viroids?	01
	C	Lichen is an example of association between which two organisms?	01
	d	Define phycology.	01
	e	Give examples of Actinomycetes involved in Antibiotic production at industrial level.	01
	f	Which algae produces agar-agar?	01
	g	Amoeba is included in which group of microorganisms.	01

← End of Paper →

GANPAT UNIVERSITY
M. Sc. Second Semester Examination (C.B.C.S) April-May 2014
Subject: Microbiology/Biotechnology
Paper BTA/MBA 203: BFT Bioprocess and Fermentation Technology

Time: 3 hours

Total Marks: 70

Instructions:

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

SECTION –I

1. Why improvements of industrial strains are required? Discuss in detail about the methods used for improvement of industrial strains **14**
2. Write in detail about various fermentative substrates used for industrial production of metabolites. **14**
3. Explain disintegration methods to release intracellular products from microbial cells. Discuss liquid-liquid extraction process used for recovery of fermentation products **14**
4. Give answer in short **07**
 - i. Enlist techniques used for measurement of microbial growth.
 - ii. Enlist factors affecting oxygen transfer rate
 - iii. Name two reliable methods used for preservation of microbial cultures.
 - iv. Define antifoam and give two examples
 - v. Give applications of aqueous two phase system
 - vi. Define K_{La}
 - vii. Differentiate primary and secondary screening

SECTION –II

5. Give a brief account on fermentative production of Citric acid. **14**
6. Describe the methods used for production of recombinant monoclonal antibodies and their applications. **14**
7. Describe the fermentative production of Bioplastics and their characteristics. **14**
8. Write short answer **07**
 - i. Enlist various fermented milk products
 - ii. Enlist criteria for overproduction of Glutamic acid
 - iii. Enlist applications of Xanthan
 - iv. Name the enzymes used in the treatments of Cystic Fibrosis
 - v. Name two microorganisms used for fermentative production of Ethanol
 - vi. Give two examples of edible Mushrooms
 - vii. Give examples of Vit B2 producing microorganisms

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GANPAT UNIVERSITY

M. Sc. Second Semester Examination (C.B.C.S) April-May, 2014

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 Define a word “In-silico”. Narrate some biological applications in reference to In-silico analysis. (14)
- Q-2 Write a note on the tools which are used to identify the source organism of an unknown sequence using the concept of similarity. (14)
- Q-3 Differentiate between primary and secondary databases of protein. Discuss various sequential and structural databases of proteins. (14)
- Q-4
- a) What is a “clock speed”? In what it is measured? (7)
 - b) Enlist different data types used in programming.
 - c) Explain use of filters. Which is by-default filter used in BLAST tool?
 - d) What is PAM? Explain its importance.
 - e) Define “Paralogous sequence”.
 - f) Mention types of trees in phylogenetic analysis.
 - g) Explain significance of E-value.

SECTION-II

- Q-5 Explain the concept of “Gene expression” taking an example of suitable commercial technique used for it. Also mention its merits and demerits. (14)
- Q-6 What is “ADME”? Explain the steps involved in new drug discovery and its development. (14)
- Q-7 Explain “Dihedral angle” in reference to the concept of Ramchandran plot. Also discuss one protein visualization tool with its utilities. (14)
- Q-8 Explain the following terms: (7)
- a) BIND
 - b) Docking
 - c) COG
 - d) Proteomics
 - e) Motif
 - f) CATH
 - g) Affymetrix technology

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GANPAT UNIVERSITY
M. Sc. **Second** Semester Examination (C.B.C.S) April-May 2014
Subject: **Biotechnology/Microbiology/Geophysics**
BTB/MBB/GPB205LCS: 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

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| Q-1 | Discuss essentials of Preparing Text of Presentation. | 14 |
| Q-2 | Attempt the following: (Any Two)
a. Discuss Characteristics of successful Group Discussion
b. Give Differences between Group Discussion and Debate
c. Discuss 'Creating Friendly Cooperative Atmosphere' and 'Handling Conflict' as Group Discussion Strategies. | 14 |
| Q-3 | Attempt the following: (Any Two)
a. Discuss different answering strategies useful at the time of interview.
b. Discuss types of interview questions.
c. Discuss impact of 'core interview' over 'decision making interview'. | 14 |
| Q-4 | Answer the following in short:
a. List out different answering strategies.
b. List out characteristics of successful job interview.
c. List out different pre-interview preparation techniques.
d. List out types of interview.
e. Give full form of AIDA.
f. List out essential documents to be added in interview file.
g. Define the term 'Debate' in your own words. | 07 |

SECTION: II

- Q-5 Write Notice, Agenda and Minutes for the meeting organized in your college for tour planning. 14
- Q-6 Write an application for the post of assistant professor in Sunrise Institute of Sciences in B. Sc. Programme. 14
- Q-7 Attempt the following: (Any Two) 14
- a. Discuss types of technical articles in detail.
 - b. Write an individual report on inspection conducted in your institute.
 - c. Write a note on 'Technical Section' and 'Management Section' of a technical proposal.
- Q-8 Answer the following in short: 07
- a. List out different routine reports.
 - b. List out sales aspects of an application letter.
 - c. In which order experience should be written in resume?
 - d. What should be the maximum length of title of a technical proposal?
 - e. List out different blocks of a job application
 - f. List out different sections of a technical proposal.
 - g. Define 'Terms of References' in the light of report writing style.

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