

GANPAT UNIVERSITY

M.Sc. Third semester, EBT 301 Environmental Biotechnology

Nov. Dec. 2012,

Total Marks : 70

Time 3 hours

Instructions: 1 Attempt any 3 question from each section, question 4 and 8 are compulsory

2 Answer each section in separate answer book

SECTION: I

Q. 1 (A) Describe objectives of ecological study in environmental biotechnology. 14

(B) Discuss design and working of rotation biological contactor

Q. 2 (A) Explain role of microorganism in phosphate solubilisation with mechanism 14
for the same.

(B) Describe bio control with reference to Baculoviruses and give importance of such products.

Q. 3 (A) Describe microbial production of ethanol from cellulosic waste. 14

(B) Explain the term SRT and HRT and give their significance in activated sludge treatment process.

Q. 4 Describe properties of Siderophores and give their role in soil fertility 7

OR

What are indicator organisms? Explain their function with suitable example.

Q. 5 Discuss microbial degradation of Azo dyes and explain critical points of the 14
process with reference to anaerobic state of the process.

Q. 6 (A) Explain co metabolism and describe methods used for it's detection. 14

(B) Discuss role of microorganisms in removal of metallic pollutants from waste water.

Q. 7 Discuss principal and mechanism of biodeterioration of paper and leather products. 14

Q. 8 Describe bioextraction of copper from sulphidic ores with name of 7
involved various microorganism in the process.

OR

Discuss production of biosurfactants by Pseudomonas spp.

END OF PAPER

GANPAT UNIVERSITY
M.Sc. Third Semester Examination (C.B.C.S) Nov-Dec, 2012
Subject: Biotechnology/Microbiology
Paper: BTA/MBA 302FTT 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.

SECTION - I

- | | | |
|-----|---|----------|
| Q.1 | Classify starch degrading enzymes. Write in detail about fermentative production and recovery of amylase enzyme | 14 |
| Q.2 | Discuss: Pre-treatment of the raw materials, preparation of inoculum and recovery process in fermentative production of citric acid | 14 |
| Q.3 | Give answer of the followings:
a. Enzymes as therapeutic agents
b. Vector vaccines | 07
07 |
| Q.4 | Write a short note on Industrial ethanol production | 07 |

OR

Role of Biotin and penicillin in fermentative production of Glutamic acid

SECTION -II

- | | | |
|-----|---|----|
| Q.5 | Give an account regarding types of fermented foods and discuss production of any two fermented foods in detail | 14 |
| Q.6 | What are Bioplastics? Discuss in detail about the types and production of bioplastics. Give importance of bioplastic usage. | 14 |
| Q.7 | Discuss in detail about medium components of generally used plant cell culture medium with their functions | 14 |
| Q.8 | Write a short note on Mushrooms | 07 |

OR

Biotransformation of Steroids

END OF PAPER

GANPAT UNIVERSITY
M.Sc. Third Semester Examination (C.B.C.S) Nov-Dec, 2012
Subject: Biotechnology/Microbiology
Paper BTA/MBA 303 RDT Recombinant DNA 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.

SECTION: I

- Q-1 Write short notes on:
- a. Linkers and adaptors 07
 - b. DNA manipulative enzymes 07
- Q-2 Write a shorts notes on :
- a. M13 Bacteriophage 07
 - b. λ phage 07
- Q-3 Explain in details about differences between Genomic library and cDNA library. 14
- Q-4 Write a short note on :
Retroviruses as a vector. 07
- OR
- Blue white selection 07

SECTION: II

- Q-5 Write a short notes on :
- a. Safety measures to be followed for the release of GMOs. 07
 - b. DNA fingerprinting 07
- Q-6 Write short notes on:
- a. Yeast Artificial chromosome. 07
 - b. DNA vaccines 07
- Q-7 What is intellectual property right? Discuss in detail the different forms of its protections. 14
- Q-8 Write a short note on: 07
Explain metabolic engineering with suitable example.
- OR
- Ti Plasmid 07

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

GANPAT UNIVERSITY
M. Sc. Third Semester Examination (C.B.C.S) Nov-Dec, 2012
Subject: Biotechnology/Microbiology
Paper - BTA/MBA 304 BNF 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 What is computer algorithm? Explain the concept of "Decision making" and "Loops" in computer programming. (14)
- Q-2 Explain the concept of "Sequence submission". Discuss essential tools used for sequence submission. (14)
- Q-3 What is "Needleman-Wunsch" algorithm? Discuss various online tools used for sequence similarity in detail. (14)
- Q-4 Differentiate between "Markov model" and "Hidden markov model". Also discuss applications of HMMs in Bioinformatics. (7)
- OR
- Q-4 Explain "Linear and non-linear data structures" taking suitable example. (7)

SECTION - II

- Q-5 Why proteins interact with each other? Explain any one database for the same. (14)
- Q-6 Write a note on "Protein structure visualization". (14)
- Q-7 Why non-covalent attachment is not preferred for oligonucleotide probe? Explain the concept of "Deprotection" in microarray using various technologies. (14)
- Q-8 What is Fever? Explain role of Crocine/Paracetamol in recovery of fever. (7)
- OR
- Q-8 Explain following terms: (7)
- | | |
|--------------------------|---------------------|
| a) Systems Biology | b) Profile |
| c) Pattern | d) Half life |
| e) First pass metabolism | f) Pharmacokinetics |
| g) Peptide bond | |

END OF PAPER

GANPAT UNIVERSITY
M. Sc. Third Semester Examination (C.B.C.S.) Nov-Dec 2012
Subject: Biotechnology/Microbiology/Bioinformatics
Paper: BT B 305 DSM Disaster Management
MB B 305 DSM Disaster Management
BI B 305 DSM Disaster Management

Time: 3 hours

Instructions:

16/11/12 **Total Marks: 70**

- 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

- | | | |
|------|---|----------|
| Q. 1 | What is Disaster management? Why disaster management has become an integral part of everyday life of human beings? Explain various components of Disaster Management continuum. | 14 |
| Q. 2 | Discuss fundamentals, characteristics, causes and effects of Cyclone. Discuss Super Cyclone of Orissa in detail. Add a note on Cyclone risk mitigation practices in India. | 14 |
| Q. 3 | Write short notes on
(a) War and Terrorism
(b) Flood in Mumbai in 2005 | 07
07 |
| Q. 4 | Write a short note on: Bhopal gas leak tragedy
or
Nuclear power accidents and discuss any one major nuclear power accident. | 07 |

SECTION: II

- | | | |
|------|--|----------|
| Q. 5 | Write short notes on
(a) Rehabilitation operations
(b) Management of relief operations | 07
07 |
| Q. 6 | Discuss in detail: Components and functions of local disaster management cell. | 14 |
| Q. 7 | What is NDMA? Describe in detail role of Central government in disaster management. Add a critical note on Primary and Secondary relief functions and The Disaster Management Bill 2005. | 14 |
| Q. 8 | Write a short note on: Utility failure
or
Industrial and residential Fire. | 07 |