

GANPAT UNIVERSITY
M.Sc. First Semester Examination (NEW COURSE) (C.B.C.S) Nov-Dec, 2013
Subject: Biotechnology/Microbiology
Paper: BTA/MBA 101 CMB Cell and Molecular Biology

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 a short notes on | |
| | a. Endoplasmic reticulum | 07 |
| | b. Cell differentiation | 07 |
| Q-2 | Explain structure, ultrastructure, biogenesis and functions of chloroplast. | 14 |
| Q-3 | Write a short notes on | |
| | a. Cell-cell interaction | 07 |
| | b. Sex determination | 07 |
| Q-4 | Answer following questions | 07 |
| | a. Functions of lysosomes. | |
| | b. Who discovered famous white eyes fly | |
| | c. Chromatin functions | |
| | d. Functions of ribosomes | |
| | e. Difference between Pilli and fimbria | |
| | f. Write phases of cell cycle | |
| | g. Define: Dosage compensation | |

SECTION: II

| | | |
|-----|---|----|
| Q-5 | Explain prokaryotic replication. | 14 |
| Q-6 | Write a short notes on: | |
| | a. Role of General Transcriptional Factors in eukaryotic transcription. | 07 |
| | b. 5' capping | 07 |
| Q-7 | Write a short notes on: | |
| | a. Lac. Operon | 07 |
| | b. Genetic counseling | 07 |
| Q-8 | Answer following questions | 07 |
| | a. Full form of CstF and CPSF | |
| | b. With which arm of tRNA, amino acids bind during translation. | |
| | c. Group I & II introns are removed in what form. | |
| | d. Define: Ori <i>c</i> | |
| | e. Define: Cancer | |
| | f. Importance of DNA methylation | |
| | g. Role of Helicase and SSBPs. | |

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

GANPAT UNIVERSITY
M.Sc First Semester Examination Nov-Dec 2013
Subject: Biotechnology/Microbiology
Paper BTA/MBA 102 BCE Biochemistry and Enzymology

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. | Write a note on: (a) Urea cycle (b) Biosynthesis of membrane phospholipids | 07 07 |
| 2. | Discuss catabolism of Glucose with its significance | 14 |
| 3. | Explain synthesis of Purine Ribonucleotides | 14 |
| 4. | 1. Define second law of thermodynamics 2. Give any one example of nucleotide metabolic disorder 3. How many ATPs are produced in TCA cycle? 4. Which one is key intermediate in Aromatic amino acid synthesis? 5. What is role of bile salts in lipid metabolism? 6. Enlist name of any two complex in Electron transfer chain 7. what is chylomicron? | 01 01 01 01 01 01 01 |

SECTION –II

| | | |
|----|--|--|
| 5. | Explain mechanism of Regulatory enzyme with any one suitable example | 14 |
| 6. | Discuss various methods used for Enzyme purification | 14 |
| 7. | Explain mechanism of Gated Ion channel in Signal transduction | 14 |
| 8. | 1) Define Enzyme activity 2) give any one example of Bi-Substrate reaction 3) Give name of second messenger in signal transduction 4) Define immobilization of enzyme 5) what is cofactor? 6) give name of isoenzyme 7) Give MM equation | 01 01 01 01 01 01 01 |

GANPAT UNIVERSITY
M. Sc. First Semester Examination (C.B.C.S) Nov-Dec, 2013
Subject: Biotechnology/ Microbiology
Paper: BT A/ MB A 103 IAT Instrumentation and Analytical Techniques

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 What is sedimentation coefficient? Write basic principles of sedimentation. 14
 Explain differential and density gradient centrifugation in detail.
- Q-2 (a) Write a detailed note on principle, instrumentation, operation and 07
 applications of Atomic Force Microscopy.
 (b) Write a short note on "Potentiometric titrations". 07
- Q-3 Mention different types of chromatography. Discuss principle, working, and 14
 applications of planar chromatography.
- Q-4 (a) What is Rf? How would you calculate Rf value? 07
 (b) Define "RCF". Write formula to calculate RCF.
 (c) Write formula for calculation of pH for a given solution.
 (d) Write examples of fluorophores used in Fluorescence microscopy.
 (e) Write names of operation modes of AFM.
 (f) Enlist various types of detectors (only names) used in High Performance
 Liquid Chromatography
 (g) Give full form of CD, ORD and IR

SECTION: II

- Q-5 What are Biosensors? Discuss Principle and instrumentation of Biosensors. 14
 List different types and generations biosensors and add a note on
 applications of it.
- Q-6 What are radioisotopes? List various radioisotopes used in detection of 14
 substances in biological material. Add a note on Autoradiography.
- Q-7 (a) Write a short note on Principle and applications of 2-D gel 07
 electrophoresis
 (b) Write a short note on Polymerase Chain Reaction 07
- Q-8 (a) List various biocatalysts used in biosensors 07
 (b) Write use of Tracking dye and loading dye.
 (c) Names/techniques used to study the interaction of DNA with protein.
 (d) Write full name of LASER, HCL and SDS?
 (e) Write names of detection modes in MALDI.
 (f) Write names of specialized atomization techniques used in AAS.
 (g) Half life of ^{14}C is _____

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

GANPAT UNIVERSITY
M.Sc. First Semester Examination (C.B.C.S) Nov-Dec, 2013
Subject: Biotechnology/Microbiology
Paper: BTA/MBA 104 Biostatistics and Research Methodology

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 Define biostatistics. Explain how the knowledge of statistics is useful in biosciences? 14
- Q.2 Explain the Chi square test by giving suitable example. Write significance of chi square analysis. 14
- Q.3 Write short note on :
- a) Regression 07
 - b) Students t-test 07
- Q.4 Write short answer Question (each carry one marks) 07
- a) Define standard deviation 07
 - b) Sketch a graph of normal distribution
 - c) Write merits of median
 - d) Write formula for calculation of coefficient of correlation
 - e) Sketch a pie diagram (graph)
 - f) Write significance of F test
 - g) What is hypothesis testing?

SECTION II

- Q.5 Discuss the characteristic and type of scientific research 14
- Q.6 Discuss enlist various experimental design in research and discuss one of them in detail 14
- Q.7 Write short note on :
- a.) Data collection 07
 - b.) Presentation of scientific paper 07
- Q.8 Write short answer Question (each carry one marks) 07
- a.) Principle of Local control 07
 - b.) Define Thesis
 - c.) Difference between abstract and conclusion
 - d.) Principle of Randomization
 - e.) Write format of reference with example
 - f.) Define independent variable
 - g.) Define conference report

END OF PAPER

GANPAT UNIVERSITY
M.SC. SEMESTER-I EXAMINATION (NEW COURSE) (CBCS)
NOV-DEC 2013
BTB/MBA/GPB 105 LCS LANGUAGE AND COMMUNICATION SKILLS-I

Time: 3 hours

Instructions:

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(A) What is communication? Discuss with definitions 07
(B) Discuss the conventional medias of communication. 07
- Q-2(A) Discuss the 7 Cs of communication. 07
(B) Discuss the socio-psychological barriers to communication. 07
- Q-3(A) What is listening? Discuss the modes of listening. 07
(B) Discuss various types of listening. 07
- Q-4 Do as directed. 07
- a. Either the principal or the teachers.....at fault.
(Choose proper verb..... is, are, have)
 - b. HowI help you?
(use proper modal auxiliary)
 - c. People say that money attracts money. (change the voice)
 - d. Change the voice (change the voice)
 - e. I purchased a brand new android mobile phone.(find out adjectives)
 - f. I will attend the lectures. (use present perfect)
 - g. I am a very regular student.
(turn the sentence into negative without changing the meaning)

SECTION: II

- Q-5(A) What is reading? Discuss techniques of effective reading comprehension. 07
(B) Discuss the paralinguistic features of effective speaking. 07
- Q-6(A) Discuss the components of effective speaking in detail. 07
(B) Discuss the importance of word selection in effective writing. 07
- Q-7(A) Suppose you are a lab technician in one college and you have placed an order of various lab- instruments as the new semester is starting very shortly but the goods has not been delivered yet. Write a letter of complaint. 07
(B) As a customer care representative you have received a letter of complaint from a college as you have failed to timely deliver the ordered lab-instruments. Write a letter of adjustment. 07
- Q-8 Answer the following questions in one or two lines. 07
- a. Why is a complaint letter written?
 - b. Explain tone and Stress.
 - c. Explain modified Block form of lay out.
 - d. Write characteristics of effective writing.
 - e. Explain BFG form of layout
 - f. Write purposes of reading.
 - g. Why quotations are invited before placing an order?