



0039103

K19P 1494

Reg. No. : .....

Name : .....

I Semester M.Sc. Degree (CBSS-Reg./Suppl./Imp)

Examination, October - 2019

(2014 Admission Onwards)

BIOTECHNOLOGY / MICROBIOLOGY

BTG 1C01 / MBG1C01: BIOCHEMISTRY

Time : 3 Hours

Max. Marks : 40

**SECTION-A**

Write about each of the following in 2 or 3 sentences. Each question carries 1 mark. (1×10=10)

1. Mention two processes in which pheromones play their role.
2. Phosphatidyl serine present in the cell membrane is a marker of apoptosis. How?
3. What are anomers? Give an example.
4. What is the importance of Ramachandran plot?
5. Name two biological molecules that derive from cholesterol.
6. What is a zwitter ion?
7. What is the biological function of selenium?
8. Name two basic amino acids.
9. What do you know about unusual bases?
10. Give two examples for non-protein amino acids.

**SECTION B**

Write notes on or discuss any **Four** of the following, each question carries 5 marks. (4×5=20)

11. Give an idea about the physiological role of neurotransmitters.
12. Describe the functions and disorders associated with any two macrominerals.
13. What are the salient features of alpha helix and betapleated sheets?

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14. How do saponification number, iodine number and acid number help in the characterization of fats?
15. Discuss about the hormones that affect glucose metabolism.
16. Explain the role of B vitamins as coenzymes.

### SECTION C

Write an essay on any **one** of the following. The question carries **10** marks.  
**(1×10=10)**

17. Classify carbohydrates based on their monomer units. Discuss about their biological functions.
18. Detail the structure of DNA and explain their packing into higher order structures.



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Biotechnology / Microbiology

BTG1C02/MBG 1C02 : BIOPHYSICS

Time : 3 Hours

Max. Marks : 40

### SECTION - A

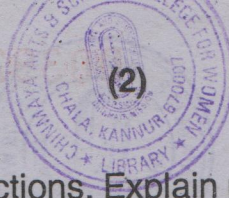
Write about each of the following in 2 or 3 sentences. Each question carries 1 mark. (10×1=10)

1. Define open and closed system.
2. What are detergents ?
3. Give the biological importance of surface tension.
4. What is diffusion ?
5. What is Zn-finger motif.
6. Define rate and order of reaction.
7. What is Adsorption?
8. What is Tyndall effect.
9. What is Topoisomerase?
10. What is peptide bond? Give its characteristics.

### SECTION - B

Write notes on or discuss any **four** of the following. Each question carries 5 marks. (4×5=20)

11. Explain Ramachandran plot.
12. Describe channel mediated transport.



- 13. What is tRNA. Give its functions. Explain unusual base pairs sun in t-RNA.
- 14. Explain fluid mosaic model of cell membrane.
- 15. Describe osmosis and its biological importance.
- 16. Explain classification, properties and uses of colloids.

**SECTION - C**

Write an essay on any **One** of the following. The question carries **10** marks.  
**(1×10=10)**

- 17. Describe the structure and conformation of Rubisco.
- 18. Explain laws of thermodynamics. Give its importance in biological system.



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BIOTECHNOLOGY / MICROBIOLOGY  
BTG1C03 /MBG1C03 : CELL BIOLOGY

Time : 3 Hours

Max. Marks : 40

Instruction : Draw diagrams wherever necessary.

### Section - A

Write about each of the following in 2 or 3 sentences. Each question carries 1 mark. (10x1=10)

1. MPF.
2. Anchorage dependance.
3. Hay flicks limit.
4. G protein coupled Receptors.
5. Oncogenes.
6. Caspases.
7. Histones.
8. Microtubules.
9. Dosage compensation.
10. Confocal microscopy.

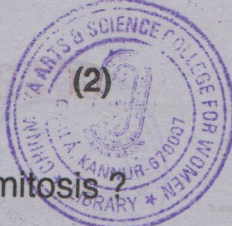
### Section - B

Write notes on or discuss any **Four** of the following. Each question carries 5 marks. (4x5=20)

11. Briefly explain the structural organisation of chloroplast ?
12. Compare and contrast prokaryotic and eukaryotic ribosomes?

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13. Briefly explain the stages of mitosis?
14. Explain the fluid mosaic model of cell membrane?
15. Narrate the main differences between animal and plant cell ?
16. What are the different cell cycle check points?

### Section - C

Write an essay on any **One** of the following the question carries **10** marks.  
**(1×10=10)**

17. Briefly explain the intrinsic and extrinsic pathway of apoptosis?
18. Explain the function of following cell organelles ?
  - a) Endoplasmic reticulum.
  - b) Chloroplast.
  - c) Golgi complex.
  - d) Lysosomes.

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I Semester M.Sc. Degree (CBSS-Reg./Suppl./Imp.)  
Examination, October - 2019  
(2014 Admission Onwards)  
BIOTECHNOLOGY/ MICROBIOLOGY  
BTG1C04/MBG1C04 : GENERAL MICROBIOLOGY

Time : 3 Hours

Max. Marks : 40

SECTION - A

Answer the following in 2 or 3 sentences. Each question carries 1 mark  
(10×1=10)

1. Differentiate between fluorochroming and immunofluorescence.
2. What is the principle of acid fast staining?
3. What are the different types of arrangement of bacterial flagella?
4. What is the reason for lag phase in microbial growth curve?
5. Define thermal death time?
6. What are viroids?
7. What are fungi imperfectii?
8. What is meant by cold sterilization?
9. What is tyndallization?
10. What are fastidious organisms?

SECTION -B

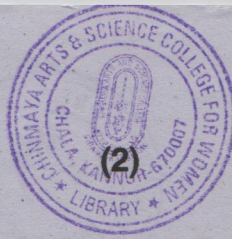
Answer any **Four** of the following. Each question carries 5 marks.

(4×5=20)

11. Explain confocal microscopy.
12. Write a note on contributions of Robert Koch.

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13. Discuss the methods of preservation of bacterial cultures.
14. Compare the cell envelopes of cell wall, of Gram positive and Gram negative bacteria.
15. Write a note on diffusion tests for antibiotic sensitivity.
16. Describe the principle and procedure of Gram staining.

### SECTION- C

Answer any **One** of the following. The question carries **10** marks.

(1×10=10)

17. Organisms formerly classified as Archaeobacteria are being distinguished from other prokaryotes: Explain this statement.
18. Describe the various physical methods of the control of microbes.