

K19U 0552

Reg. No.: .....

Name: .....

**IV Semester B.Sc. Degree (CBCSS – Reg./Supple./Improv.)**

**Examination, April 2019**

**(2014 Admission Onwards)**

**Complementary Course in Biochemistry**

**4C04 BCH : BIOCHEMISTRY – IV**

Time : 3 Hours

Total Marks : 32

**SECTION – A**

**Each carries 1 mark. Answer all 5 questions.**

1. What are abzymes ?

2. What is  $K_m$  ?

3. Name one competitive inhibitor of succinate dehydrogenase.

4. What is group specificity ?

5. What is an allosteric site ?

**(5×1=5)**

**SECTION – B**

Short answer type. **Each carries 2 marks. Answer any 4 questions out of 6.**

Write short note on the following :

6. Apo-enzyme.

7. Ribozyme.

8. Lock and key model.

9. Transferases.

10. Uncouplers.

11. Fatty acid synthase.

**(4×2=8)**

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SECTION - C

Short essay type. **Each** carries **3** marks. Answer **any 3** questions out of 5. Name: .....

12. Name the different classes of enzymes.
13. Write short note on ELISA.
14. Write note on different pigments involved in photosynthesis.
15. Distinguish between oxidative and substrate level phosphorylation.
16. Write note on carnitine cycle.

(3×3=9)

SECTION - D

Long essay type. **Each** carries **5** marks. Answer **any 2** questions out of 4.

17. Write note on allosteric enzymes with suitable examples.
18. Briefly explain the mechanism of action of chymotrypsin.
19. Explain non-cyclic photophosphorylation.
20. Explain beta oxidation of fatty acids.

(2×5=10)

SECTION - B

Short answer type. Each carries 2 marks. Answer any 4 questions out of 6.

Write short note on the following:

6. Apo-enzyme.
7. Ribozyme.
8. Lock and key model.
9. Transferrase.
10. Uncouplers.
11. Fatty acid synthase.

(4×2=8)

P.T.O.



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IV Semester B.Sc. Degree (CBCSS – Reg./Supp./Imp.)

Examination, April 2019

(2014 Admission Onwards)

GENERAL COURSE IN BIOTECHNOLOGY

4A13 BTC : Basic 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. (6×1=6)

1. What is osmotic pressure ?
2. Structure of GTP.
3. What is ATPase ?
4. Glycolipids.
5. Surface tension.
6. Define Molecularity.

SECTION – B

Write short notes on any three of the following. Each question carries 2 marks. (3×2=6)

7. Define Entropy.
8. What is Adsorption ?
9. What is Tyndall effect ?
10. What is Ribozyme ?

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SECTION - C

Write short essay on **any three** of the following. **Each** question carries **4** marks.

(3×4=12)

11. Explain tertiary structure of tRNA.
12. What is Zn finger motif ?
13. What is fluid mosaic model of biological membrane ?
14. Explain Hoogstern base pairing.
15. Describe the conformation of polysaccharides.

SECTION - D

Write essay on **any two** of the following. **Each** question carries **8** marks.

(2×8=16)

16. Explain different structural level of proteins.
17. Describe laws of thermodynamics.
18. Explain the process of propagation of signals in neurons.
19. Describe membrane transport.

SECTION - B

Write short notes on **any three** of the following. **Each** question carries **5** marks.

(3×5=15)

7. Define Entropy.
8. What is Absorption ?
9. What is Tyndall effect ?
10. What is Ribozyme ?



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IV Semester B.Sc. Degree (CBCSS – Reg./Supp./Imp.) Examination, April 2019  
(2014 Admission Onwards)  
**GENERAL COURSE IN BIOTECHNOLOGY**  
**4A14 BTC : Biostatistics**

Time : 3 Hours

Max. Marks : 40

**SECTION – A**

Write about **each** of the following in **2 or 3** sentences. **Each** question carries **1** mark. **(6×1=6)**

1. Primary and secondary data.
2. Standard Error.
3. Coefficient of correlation.
4. Probability.
5. Frequency polygon.
6. Null hypothesis.

**SECTION – B**

Write short notes on **any three** of the following. **Each** question carries **2** marks. **(3×2=6)**

7. Normal distribution curve.
8. Chi-square test.
9. ANNOVA.
10. Coefficient of correlation.

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SECTION - C

Write short essay on **any three** of the following. **Each** question carries **4** marks.

(3×4=12)

11. Measures of central tendency.
12. Types of correlation.
13. Testing of hypothesis.
14. Calculate the standard deviation from the following data :  
2, 4, 6, 8, 10, 12.

15. Find out median from the following data :

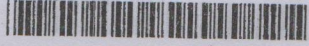
Class	0 - 9	10 - 19	20 - 29	30 - 39	40 - 49
Frequency	12	18	27	20	10

SECTION - D

Write essay on **any two** of the following. **Each** question carries **8** marks. (2×8=16)

16. Describe various methods of presentation of data.
17. Explain laws of probability with examples.
18. Find out Karl Pearson's coefficient of correlation for the following data :

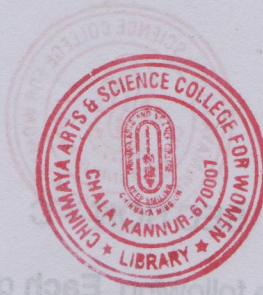
X :	10	12	18	24	30	36	37	40
Y :	17	25	30	32	16	10	9	8
19. An examination was given to two classes consisting of 40 and 50 students respectively. In the first class, the mean mark was 74 with a standard deviation of 8. While in the second class, the standard deviation was 78. Is there any significant difference between the performances of the two classes ?



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Name : .....



IV Semester B.Sc. Degree (CBCSS-Reg./Supp./Imp.) Examination,  
April 2019

(2014 Admission Onwards)  
CORE COURSE IN BIOTECHNOLOGY  
4B06BTC : Animal Physiology

Time : 3 Hours

Max. Marks : 40

SECTION - A

Write about **each** of the following in 2 or 3 sentences. **Each** question carries 1 mark. (6×1=6)

1. Diabetes insipidus.
2. Synaptic potential.
3. Chemoreceptor.
4. Erythropoietin.
5. Blood pressure.
6. Chloride shift.

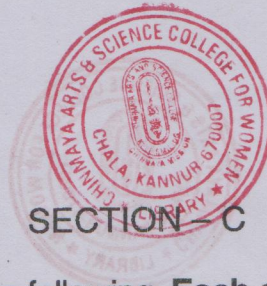
SECTION - B

Write short notes on **any three** of the following. **Each** question carries 2 marks. (3×2=6)

7. Smooth muscle.
8. Heart valves.
9. Adrenal hormones.
10. Resting membrane potential.

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SECTION - C

Write short essay on **any three** of the following. **Each** question carries **4** marks. **(3×4=12)**

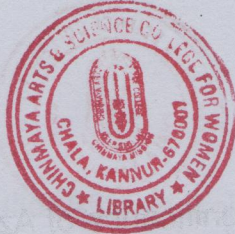
11. Explain myoneural junction.
12. Describe cardiac cycle.
13. Explain olfactory sensation.
14. Discuss the functions of thyroid hormones.
15. Write notes on respiratory pigments.

SECTION - D

Write essay on **any two** of the following. **Each** question carries **8** marks. **(2×8=16)**

16. Describe the structure of neuronal synapse with appropriate diagram. Explain the mechanism involved in neurotransmitter release.
17. Explain haematopoiesis.
18. Write an essay on steroid hormones.
19. Describe respiratory gas transport.





K19U 0589

Reg. No. : .....

Name : .....

**IV Semester B.Sc. Degree (CBCSS – Reg./Supple./Imp.)**  
**Examination, April 2019**  
**COMPLEMENTARY COURSE IN MICROBIOLOGY**  
**4C05 MCB : Applied Microbiology – II**  
**(2014 Admission Onwards)**

Time : 3 Hours

Max. Marks : 32

**SECTION – A**

Answer **all** questions. **Each** question carries **1** mark.

1. The network of fungal mycelia of ectomycorrhiza formed within the cortex of root tissue is called \_\_\_\_\_
2. Name the earth worm commonly used in vermicomposting.
3. What is the composition of biogas ?
4. The sewers designed to carry domestic and industrial waste water is called \_\_\_\_\_
5. Commingled solid waste collected from households, commercial places and institutions are termed \_\_\_\_\_ (5×1=5)

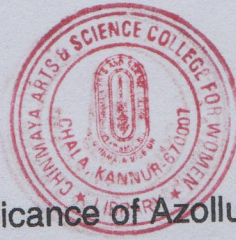
**SECTION – B**

Answer **any four** of the following. **Each** question carries **2** marks.

6. Define bioinoculants.
7. What are sanitary landfills ?
8. What is methanogenesis ?
9. Define synergism.

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10. What is the agricultural significance of Azollu-Anabaena system ?

11. What is biomagnification ?

(4×2=8)

### SECTION – C

Answer **any three** of the following. **Each** question carries **3** marks.  
Write short notes on :

12. Bioremediation of pesticides.
13. Symbiotic nitrogen fixation.
14. Anaerobic sludge digestion.
15. Indicator organisms.
16. Characteristics of solid waste.

(3×3=9)

### SECTION – D

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

17. Define mycorrhizae. Write note on different types of mycorrhizae and their significance.
18. Describe the aerobic treatment of sewage.
19. Describe the design of a gobar gas plant.
20. Discuss different methods of composting.

(2×5=10)