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**M. Sc. (Sem. IV)
Regular/ATKT/Old ATKT/EX
Examination - May, 2023**

(Fourth Semester)

CHEMISTRY

Paper III

Biochemistry

Time : 3 Hours

Maximum Marks : 85

Minimum Pass Marks : 32

Note : Attempt all questions.

Section A

1½×10=15

Objective Type Questions

1. Choose the correct answer :

- (i) Microelement of body is :
- (a) Fe
 - (b) Cu
 - (c) Zn
 - (d) All of the above
- (ii) Insulin contains :
- (a) Na
 - (b) K
 - (c) Zn
 - (d) Mn
- (iii) The maximum type of cytochrome is :
- (a) 1
 - (b) 2
 - (c) 3
 - (d) 4

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(2)

(iv) Mo-nitrogenase has Mo atom :

- (a) 1
- (b) 2
- (c) 4
- (d) 3

(v) The favourable pH for an enzymatic reaction is :

- (a) 2-5
- (b) 4-6
- (c) 5-9
- (d) 8-11

(vi) Enzyme reaction is effected by :

- (a) Temperature
- (b) pH
- (c) The presence of other ion
- (d) All of the above

(vii) TPP is :

- (a) Thymine pyrophosphate
- (b) Co-enzyme
- (c) Both (a) and (b)
- (d) None of the above

(viii) Co-enzyme-A contains :

- (a) β alanine
- (b) Panthoic acid
- (c) Both (a) and (b)
- (d) None of the above

(ix) Cell membrane is formed by :

- (a) Fat
- (b) Pratiem
- (c) Carbohydrate
- (d) All of the above

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(4)

- (x) Nucleus contains :
- (a) Protein
 - (b) Enzyme
 - (c) DNA and RNA
 - (d) All of the above

Section B

5×5=25

Short Answer Type Questions

2. Write short answer of any *one* of the following :
- (a) K^+/Na^+ pump
 - (b) DNA polymerization
3. Write a note on Biological Nitrogen Fixation.

Or

Write the functions of Nitrogenase.

4. What is Michaelis-Menten's equation.

Or

What are reversible inhibition ?

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5. Write a short note on Enzyme Therapy *or* Crown Ether.
6. Explain biological cell.

Or

What are Hydrophobic force ?

Section C

5×9=45

Long Answer Type Questions

7. Describe the structure of Haemoglobin.

Or

Explain synthetic complex of copper.

8. What are cytochromes ? Explain its functions in electron transport processes.

Or

Explain the mechanism of chemical nitrogen fixation.

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9. Write short notes on any *two* of the following :

(a) Fischer's lock and key hypothesis

(b) Lysozyme

(c) Enolic Intermediates

10. What is co-enzyme-A ? Explain its structure and functions.

Or

Write an essay on use of enzymes in food and drink industry.

11. Write short notes on any *two* of the following :

(a) Ion Transport through the cell membrane

(b) Hydrogen ion titration curve

(c) Heli's coils transition