

**2024/TDC (CBCS)/EVEN/SEM/  
ZOOHCC-403T/019**

**TDC (CBCS) Even Semester Exam., 2024**

**ZOOLOGY**

**( 4th Semester )**

Course No. : ZOOHCC-403T

**( Biochemistry of Metabolic Process )**

Full Marks : 50

Pass Marks : 20

Time : 3 hours

*The figures in the margin indicate full marks  
for the questions*

**UNIT—I**

1. Answer any two questions from the following : 2×2=4

(a) What is metabolism?

(b) What do you understand by intermediary metabolism?

(c) "ATP is known as energy currency of the cell." Justify the statement.

24J/656

( Turn Over )



( 2 )

2. Answer any *one* question from the following : 6

- (a) Describe the stages of catabolism with suitable illustration.
- (b) Discuss the shuttle systems and membrane transporters.

UNIT—II

3. Answer any *two* questions from the following : 2×2=4

- (a) What is glycolysis?
- (b) Why is citric acid cycle important?
- (c) Write a short note on glycogenesis.

4. Answer any *one* question from the following : 6

- (a) Mention the steps of citric acid cycle with proper illustrations.
- (b) Discuss the process of gluconeogenesis with a flowchart.

UNIT—III

5. Answer any *two* questions from the following : 2×2=4

- (a) Define ketogenesis.

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( 3 )

- (b) Mention the importance of  $\beta$ -oxidation of fatty acids.

- (c) Write the overall equation for palmitic acid biosynthesis.

6. Answer any *one* question from the following : 6

- (a) Describe the process of  $\beta$ -oxidation of fatty acid with even number of carbon atoms.
- (b) Discuss the enzymatic steps in biosynthesis of palmitic acid.

UNIT—IV

7. Answer any *two* questions from the following : 2×2=4

- (a) What are glucogenic amino acids?
- (b) Define deamination.
- (c) What are ketogenic amino acids?

8. Answer any *one* question from the following : 6

- (a) Describe the process of urea cycle with proper illustration.
- (b) Discuss the catabolism of amino acids.

24J/656

( Turn Over )



UNIT—V

9. Answer any *two* questions from the following :  $2 \times 2 = 4$

- (a) What are inhibitors of ETS?
- (b) Mention the complexes of mitochondrial respiratory chain.
- (c) Define redox system.

10. Answer any *one* question from the following : 6

- (a) Write a review of mitochondrial respiratory chain.
- (b) Mention the uncouplers of electron transport chain. How does they differ from inhibitors of ETC?  $4 + 2 = 6$

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