

**2025/FYUG/ODD/SEM/
ZOODSC-302T/341**

FYUG Odd Semester Exam., 2025

ZOOLOGY

(5th Semester)

Course No. : ZOODSC-302T

(Biochemistry of Metabolic Process)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

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

UNIT—I

Answer any *two* of the following questions :

2×2=4

- (a) Give one example each of catabolic and anabolic reaction.
- (b) Why is ATP known as energy currency of cell?
- (c) What is coupled reaction?

(Turn Over)

(2)

2. Answer any one of the following questions :
- (a) Describe in detail the stages of catabolism you have studied. Add a note on intermediary reaction. $7+3=10$
 - (b) What is shuttle system? Describe the different types of shuttle system present in mitochondrial membrane. $2+8=10$

UNIT—II

3. Answer any two of the following questions :
- (a) Write a short note on glycogenolysis. $2 \times 2 = 4$
 - (b) Why is TCA cycle so important?
 - (c) What is pentose phosphate pathway?

4. Answer any one of the following questions :
- (a) Describe the process of glycolysis with suitable illustration. 10
 - (b) Discuss in detail the pentose phosphate pathway of carbohydrate metabolism. Add a note on its significance. $8+2=10$

UNIT—III

5. Answer any two of the following questions :
- (a) Define ketogenesis. $2 \times 2 = 4$

(3)

- (b) Note down the significance of β -oxidation of fatty acids.
- (c) Name the enzymes involved in the formation of ketone bodies.

- Answer any one of the following questions : 10
- (a) Describe the process of β -oxidation of fatty acid with even number of carbon atoms.
 - (b) Describe in detail the process of ketogenesis you have studied.

UNIT—IV

- Answer any two of the following questions : $2 \times 2 = 4$

- (a) Write a note on urea cycle.
- (b) What are glucogenic amino acids?
- (c) What is deamination?

- Answer any one of the following questions : 10
- (a) Describe the metabolic fate of C-skeleton of amino acids converted to pyruvate.
 - (b) What do you mean by transamination? Describe the mechanism of removal of amino group from amino acids through transamination. $2+8=10$

UNIT—V

9. Answer any *two* of the following questions :

2×2=4

- (a) What is redox system?
- (b) What are inhibitors of ETS?
- (c) What are uncouplers?

10. Answer any *one* of the following questions :

10

- (a) Write an essay on mitochondrial respiratory chain. Add a note on chemiosmotic theory.

8+2=10

- (b) Describe the inhibitors and uncouplers of ETS.

5+5=10

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