D 111931 **(Pages : 2)** **Name.....**

Reg. No.....

THIRD SEMESTER (CBCSS–UG) DEGREE EXAMINATION, NOVEMBER 2024 **557367**

Biochemistry

BCH 3C 03—BIOCHEMISTRY – III

(2020–2023 Admissions)

Time : Two Hours Maximum : 60 Marks

Section A

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

1. Net ATP yield during glycolysis is ————————.
2. Define Km and state its significance.
3. ———————— is the most abundant enzyme in the biosphere.
4. ———————— enzyme is involved in digestion of carbohydrate in mouth.
5. Name an inhibitor of ETC that inhibits complex IV.
6. Cite an example for irreversible inhibitor.
7. What do you mean by zymogen ? Cite an example.
8. How many ATPs are synthesized by the oxidation of NADH ?
9. Dark reaction of photosynthesis occurs in ————————.

(9 × 1 = 9 marks)

Section B

Answer any **seven** *questions.*
Each question carries 3 marks.

10. Differentiate between substrate level and oxidative phosphorylation. Cite an example each.
11. Differentiate between lock and key hypothesis and induced fit hypothesis.
12. Give the reactions that demonstrate the fate of pyruvate in alcohol fermentation.
13. Brief on Kranz anatomy and its significance.
14. Describe the effect of substrate concentration on enzyme velocity.
15. Draw a neatly labelled structure of mitochondria.

Turn over

16. How does cAMP play a role in glycogen metabolism ?

17. Give the difference between light reaction and dark reaction of photosynthesis. **557367**

(7 × 3 = 21 marks)

Section C

Answer any **four** *questions.*
Each question carries 5 marks.

18. Discuss the oxidative phase of pentose phosphate pathway.

19. Calculate the net ATP yield by the complete oxidation of glucose.

20. List out the major classes of enzymes citing one example each.

21. Briefly explain Lineweaver-Burk plot.

22. Discuss cyclic photophosphorylation.

(4 × 5 = 20 marks)

Section D

Answer any **one** *question.*
It carries 10 marks.

23. Elaborate the events occurring in citric acid cycle.

24. Describe the events occurring during aerobic breakdown of glucose during glycolysis.

(1 × 10 = 10 marks)