

U.G. 3rd Semester Examination - 2020

ZOOLOGY

[HONOURS]

Course Code : ZOOL-H-CC-T-07

Full Marks : 40

Time : 2½ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer any **five** of the following: 2×5=10
- What are the major non-covalent bonds involved in stabilizing protein structure?
 - How many ATPs will be produced from complete oxidation of a 79 carbon fatty acid?
 - How temperature affects enzyme kinetics equation?
 - Why pentose phosphate pathway is also called HMP shunt?
 - Name two inhibitors and two uncouplers of Electron Transport System.
 - Draw a labelled diagram of clover leaf model of t-RNA.

- g) What are the products of Krebs's cycle for every pyruvate molecule?
2. Answer any **two** of the following: 5×2=10
- What is fatty acid activation? Enumerate the roles of enzymes involved in beta-oxidation of fatty acids. 1+4
 - What is the link between Krebs's cycle and Urea cycle? Why urea cycle is referred to as Urea bicycle? Provide flowchart. 2+3
 - Write short note on nucleotide metabolism.
 - How Lineweaver-Burk-Plot is derived from M-M-equation?
3. Answer any **two** of the following: 10×2=20
- What are the components of ETS? Show diagrammatically how they are arranged on membrane. What is the role of NADH-shuttle in ETS? Describe oxidative phosphorylation and roles of F₀-F₁ particles in it. 2+2+2+4
 - Compare purines and pyrimidines. Describe the structure of B-DNA. How Z-DNA differs from it? What is hyperchromacity? 2+5+1+2
 - Describe the induced fit model for enzyme structure. Classify enzymes according to

[Turn over]

reaction specificity. How EC numbers are plotted for enzymes? Write briefly about 'competitive reversible' and 'non-competitive irreversible' enzyme inhibition. 2+2+2+4

d) Write briefly about the following : 2×5

i) Isoelectric pH

ii) Significance of gluconeogenesis

iii) Deamination

iv) Isoenzyme

v) V_{\max}
