

2020
University of Calcutta
M.Sc. Second Semester Examination
Zoology
ZCT 208
(Chordate Biology)

*Answer **any two** of the following questions*

1. (a) Mention the significance of vitelline veins in fetal circulation.
- (b) How is pulmonary circulation short-circuited in a fetus?
- (c) Why is the hepatic portal system important in mammals?

3+4+3=10

2. (a) Comment on the significance of jaw suspension mechanism in a cobra and a tiger with respect to their feeding habit.
- (b) Mention the important features of integument in Osteichthyes. Comment on the structure and significance of the Malpighian layer.

5+2+3=10

3. (a) How many different types of drag a swimmer experiences in the aquatic medium? Explain frictional drag on the swimmer's body.
- (b) Tabulate adaptive features of caudal anatomy of aquatic vertebrates and their adaptive significance.
- (c) Comment on limb structures of a horse which are adaptive for running.

1+3+3+3=10

4. (a) Explain the distribution of the force of contraction of tricep muscles in the vertebrate body.
- (b) "The bone muscle system acts as a lever" - explain with an illustration.

5+ 5=10