

Roll No. ....

Total Pages : 03

**CMDE/M-20                      4695**  
**COMPARATIVE PHYSIOLOGY**  
**Z-202**

Time : Three Hours]

[Maximum Marks : 80

**Note :** Attempt *Five* questions in all. Q. No. **1** is compulsory.  
Attempt *two* questions each from Section A and  
Section B.

**1.** Explain the following in brief :

- (a) Osmoconformers and Osmoregulators
- (b) Mesotrophic and Metatrophic Nutrition
- (c) Structure of striped mucules
- (d) Buccopharyngeal respiration
- (e) Corpus luteum
- (f) Cryptorchidism
- (g) Capicitation
- (h) Effect of constant stress.

**2×8=16**

**Section A**

- 2.** (a) Enlist gastric hormones and their functions.  
(b) Explain the mechanism and significance of tracheal  
respiration in insects.

**8,8**

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3. Explain the following :
- (a) Reactions of Urea cycle taking place in mitochondria.
  - (b) Tubular reabsorption in mammalian kidney.
  - (c) Role of ADH in urine formation in mammals. **6,5,5**
4. (a) How do marine animals osmoregulate in a strongly hypertonic medium ?
- (b) Write a brief note on thermoregulation in poikilotherms. **8,8**
5. Write short notes on the following :
- (a) Non-heme respiratory pigments
  - (b) Electric organs
  - (c) Types of hearts found in Animals. **6,5,5**

### **Section B**

6. Explain the following :
- (a) Biology of sex determination in mammals
  - (b) Heterogamy in eukaryotes. **8,8**
7. (a) Explain the mechanism of vitellogenesis in mammals.
- (b) Explain the factors which affect the efficiency of multiple ovulation and embryo transfer. **8,8**

8. (a) Give a comparative account of ovarian physiology and differentiation in vertebrates.  
(b) Discuss Physiological Adaptations for Desert Environments. **8,8**
9. What is Assisted Reproductive Technology ? How often is ART successful ? What are the different types of ARTs ? **16**