

Roll No.

Total Pages : 3

MDE/M-24

4691

COMPARATIVE PHYSIOLOGY

Paper–M-Z-202

Time Allowed : 3 Hours]

[Maximum Marks : 80

Note : Attempt **five** questions in all, selecting **one** question from each Unit. Question No. **1** is compulsory. All questions carry equal marks.

Compulsory Question

1. Explain the following in brief : 8×2=16

- (a) Myogenic and neurogenic heart.
- (b) Cellulose digestion in ruminants.
- (c) Tracheal respiration in insects.
- (d) Role of Acetylcholine.
- (e) Corpus luteum.
- (f) β -catenin and its function.
- (g) Catecholamine.
- (h) Role of estrogen in spermatogenesis

UNIT-I

2. (a) Enlist different gastro intestinal hormones. Explain the functions, site of secretion and site of action of each gastrointestinal hormone. 8

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(b) Explain the mechanism of Duodenal digestion. 8

3. Explain the following : 4×4=16

- (a) Reactions of Urea cycle taking place in mitochondria.
- (b) Uric acid cycle.
- (c) Role of adrenal cortex hormone and posterior pituitary in osmoregulation.
- (d) Tubular reabsorption in mammalian kidney.

UNIT-II

4. Draw a labeled diagram to show Microscopic structure of Striped muscles. Explain sliding filament theory to explain mechanism of muscle contraction explaining the role of associated proteins and enzymes. 16
5. (a) Write a brief note on thermoregulation in poikilotherms. 8
- (b) Explain lymphatic system in mammals. State its significance. 8

UNIT-III

6. Write short notes on the following :
- (a) Functional operation of Spinal cord, Brain stem. 8
 - (b) Autonomic nervous system. 8
7. (a) Explain hormonal regulation of Ovarian differentiation. 8
- (b) Explain the mechanism of Vitellogenesis in mammals. 8

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UNIT-IV

8. (a) Explain post synaptic transmission mechanism. 8
- (b) Write a brief account on neurotransmitters stating their functions. 8
9. (a) Write a note on Physiological adaptations in response to high, low ambient temperature. 8
- (b) What hormones cause stress and anxiety? Explain their mode of action. What triggers stress hormone? 8