

TDC (CBCS) Even Semester Exam., 2019

BIOTECHNOLOGY

(2nd Semester)

Course No. : BTCHCC-201T

(Mammalian Physiology)

Full Marks : 50

Pass Marks : 20

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. Answer any *ten* from the following as directed : 1×10=10
- (a) What is the other name of salivary amylase?
 - (b) What is zymogen?
 - (c) Name two gastro-intestinal hormones.
 - (d) Name two major pigments in bile.
 - (e) What is methaemoglobin?
 - (f) What is angiography?

- (g) What is the full form of GABA?
- (h) What is acromegaly?
- (i) What causes diabetes insipidus?
- (j) What is vasa recta?
- (k) Name a placental hormone.
- (l) What is agglutination?
- (m) What is lymphocyte?
- (n) Reflex action in the body is controlled by (CNS/sympathetic nervous System/ motor nerves).

(Choose the Correct option)

UNIT—I

2. (a) What is digestion? Describe the digestion of carbohydrate in mammals. 1+3=4
- (b) What is the role of liver in digestion? What are the compositions of pancreatic juice? 3+1=4

Or

- (c) What are the different enzymes present in the mammalian intestines for the digestion of major macromolecules? Outline the role of stomach in digestion. 2+2=4

(3)

- (d) What are lipids? Name some essential fatty acids. Describe the mechanism of lipid digestion in mammals. 1+1+2=4

UNIT—II

3. (a) What is respiration? Discuss how CO₂ is transported by blood. 1+3=4
- (b) What is partial pressure? How does partial pressure regulate gas exchange? 1+3=4

Or

- (c) What is respiratory pigment? Discuss its role in gas exchange. 1+3=4
- (d) What are lung volume and lung capacity? What is 'dead space'? What is Haldane Effect? (1+1)+1+1=4

UNIT—III

4. (a) Write short notes on the following : 2+2=4
- (i) Cardiac cycle
- (ii) ABO blood group
- (b) What is haemopoiesis? Outline the mechanism of blood coagulation. 1+3=4

(4)

Or

- (c) Write short notes on the following : 2+2=4
- (i) Plasma proteins
- (ii) Antigen-antibody reaction
- (d) What is the difference between myogenic and neurogenic heart? Briefly outline the working of mammalian heart. 1+3=4

UNIT—IV

5. (a) Outline the structure of skeletal muscle. Explain its mechanism of contraction. 1+3=4
- (b) Name a hormone that regulates water excretion. Discuss the role of Renin-Angiotensin system in the control of kidney function. 1+3=4

Or

- (c) Draw the structure of nephron. What are its functions? What is counter-current mechanism? 1+1+2=4
- (d) Write short notes on the following : 2+2=4
- (i) All or none rule
- (ii) Isotonic and isometric contraction

(5)

UNIT—V

6. (a) Describe the structure of neuron with suitable diagram. Describe the characteristics of nerve impulse. (1+1)+2=4
- (b) What is neurohypophysis? What are the hormones secreted from the neurohypophysis? Enumerate their roles briefly. 1+1+2=4

Or

- (c) What are neurotransmitters? What are their major types? Explain the mode of action of any one neurotransmitter. 1+1+2=4
- (d) Enlist the hormones involved in calcium and phosphate metabolism. Briefly add a note on gonadal hormones. 1+3=4

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