

Sl. No. of Q.P. 2283

Unique paper Code:

2581202

Name of the Paper:

Human Physiology and Anatomy I

Name of the Course:

B.Sc (H) Biomedical Sciences

Semester:

II

Duration:

3 Hrs

F-4

Maximum Marks:

75

#### Instructions for candidates

1. Attempt five questions in all.
2. Question no. 1 is compulsory.
3. Subparts of the questions should be attempted together.
4. Write your roll number on the top immediately on receipt of the question paper.
5. Draw illustrations or diagrams wherever necessary.

Q1. (a) Differentiate between:

(1.5 X 4 = 6 marks)

- (i) Dorsal body cavity and ventral body cavity
- (ii) Emboli and thrombus
- (iii) Single unit and multiunit smooth muscles
- (iv) Axonal transport and axoplasmic flow

(b) Define:

(1X5 = 5 marks)

- (i) Lymph
- (ii) Saggital section
- (iii) Segmentation
- (iv) Accomodation
- (v) Synaptic inhibition

(c) Justify the following statements:

(1.5X4 = 6 marks)

- (i) Blood does not clbt in circulation
- (ii) Action potentials are all-or-none events.
- (iii) REM sleep is also called paradoxical sleep
- (iv) Heart burn does not actually means burning of heart.

(d) Expand the following:

(0.5X4 = 2)

- (i) IPSP
- (ii) EPA
- (iii) MALT
- (iv) GABA

Q2. Write short notes on:

(3.5 X 4 marks)

- (i) Transport and absorption of iron
- (ii) Regulation of erythropoiesis
- (iii) Vestibular apparatus
- (iv) Cross bridge cycle for muscle contraction

Q3. (a) What are neuropeptides? Give two examples. How they are different from neurotransmitters?

(4 marks)

(b) Discuss briefly temperature regulation of the body by

- (i) Skin
- (ii) Hypothalamus

**(3 marks)**

(c) Give location and function of the following:

**(1X5 = 5 marks)**

- (i) Payer's patches
- (ii) Schwann cells
- (iii) T tubules
- (iv) gustatory cells
- (v) ECL cells

(d) RBCs can never be hyperchromic? Explain.

**(2 marks)**

Q4. (a) What is brain stem? What are its functions?

**(3 marks)**

(b) Draw a well labeled diagram of following **(any three)**:

**(6 marks)**

- i. axo-axonic synapse
- ii. enterohepatic circulation of bile salts
- iii. anatomy of an eye ball
- iv. length tension relationship in skeletal muscle

(c) Give an example for:

**(1X5=5 marks)**

- (i) an inhibitory neurotransmitter
- (ii) the solute found in highest concentration in plasma.
- (iii) part of the brain which control emotions
- (iv) the pacemaker cells of intestine.
- (v) a lymphoid organ

Q5. (a) Explain digestion and absorption of carbohydrates.

**(3 marks)**

(b) Compare the effects of sympathetic and parasympathetic divisions of ANS on

(i) Kidneys, (ii) Lungs, (iii) Urinary Bladder and (iv) Cellular metabolism **(4 marks)**

(c) Compare and contrast the excitation-contraction coupling mechanism of smooth muscles and cardiac muscles. Draw a well labelled diagram also. **(6 marks)**

(d) What is Rhodopsin and Iodopsin. **(1 mark)**

Q6. (a) Classify reflexes. Give two examples of each type. **(3 marks)**

(b) Discuss the hormonal regulation of pancreatic juice secretion. **(3 marks)**

(c) Discuss various ways by which ATP required for muscle metabolism can be regenerated? **(3marks)**

(d) What is cerebellum? Where it is located? List some of its major functions. **(3 marks)**

(e) Write briefly about physiology of phagocytic mechanism. **(2 marks)**