



**WEST BENGAL STATE UNIVERSITY**

B.Sc. Honours 2nd Semester Examination, 2022

**FNTACOR04T-FOOD AND NUTRITION (CC4)**

**HUMAN PHYSIOLOGY**

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.  
Candidates should answer in their own words and adhere to the word limit as practicable.  
All symbols are of usual significance.*

**Answer any four questions from the following**

10×4 = 40

1. (a) What is a Sarcomere? 3+(3+4)  
(b) Describe the structure of a neuromuscular junction in skeletal muscles and discuss the mechanism of nerve impulse transmission through this junction.
2. (a) Discuss the mechanism of excitation-contraction coupling in skeletal muscle contraction. 6+(2+2)  
(b) What are meant by chronaxie and rheobase?
3. (a) What is pars intermedia? Name the hormone secreted from it and mention the functions of this hormone. (2+2)+6  
(b) Describe the functions of growth hormone on metabolism.
4. Write short notes on the following:  $2\frac{1}{2} \times 4 = 10$ 
  - (a) Latent period in simple muscle twitch
  - (b) Addison's disease
  - (c) Functions of gastrin
  - (d) Neurolemma and endoneurium.
5. (a) Describe the histological structure of thyroid gland. 4+6  
(b) Discuss the physiological functions of thyroid hormones.
6. (a) Differentiate between isometric and isotonic muscle contraction. Mention the role of creatine phosphate in muscular contraction. (5+2)+3  
(b) What are meant by endomysium and perimysium?

7. (a) Describe the hypothalamo-hypophyseal portal system and mention its functions. (3+2)+(3+2)  
(b) Discuss the functions of secretin and VIP.
8. (a) Describe the role of parathormone and calcitonin in the regulation of blood calcium level. (5+2)+3  
(b) Mention the role of posterior pituitary hormones on uterus and lactating mammary gland.
9. Write short notes on any *two* of the following: 5×2 = 10  
(a) Microscopic structure of smooth muscle cells  
(b) Intercalated disc  
(c) Chemical changes taking place during muscular contraction  
(d) Functions of nerve growth factor.

**N.B. :** *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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