



WEST BENGAL STATE UNIVERSITY

B.Sc. Honours Part-II Examination, 2020

PHYSIOLOGY

PAPER: PHYA-III

Time Allotted: 2 Hours

Full Marks: 50

*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 Question No. 1 and any two from the rest

1. Write short notes on any **four** of the following: 5×4 = 20
 - (a) Mitochondrial electron transport chain
 - (b) De novo pathway of nucleic acid
 - (c) Juxtaglomerular apparatus
 - (d) Renal dialysis
 - (e) Sweat gland
 - (f) Cerebro Spinal Fluid (CSF)
 - (g) Sleep cycle
 - (h) Nicotinic and muscarinic type receptors.

2. (a) What is oxidative phosphorylation? What are the inhibitors of oxidative phosphorylation? 2+2
 - (b) How does glucose synthesized from lactate in liver? What are the rate limiting steps of glycolysis? 3+3
 - (c) What are the significance of hexose monophosphate shunt? 3
 - (d) What is redox potential? 2

3. (a) What is isoelectric point? What is the importance of the amino acid pool? 1+2
 - (b) What are deamination and transamination? Describe each reaction with example. 2+4
 - (c) What do you mean by reactive oxygen species? What is the role of superoxide dismutase as an antioxidant? 2+2
 - (d) What is Rapoport-Luebering cycle? 2

4. (a) What is autoregulation? What are the factors that influence the glomerular filtration rate? 2+3
- (b) Discuss about the role of renal tubules in counter-current mechanism of kidney. 5
- (c) What are the non-excretory functions of kidney? 2
- (d) What is heat stroke? Briefly discuss about its management. 1+2
5. (a) Write down the functions of cerebellum. 3
- (b) Write the origin, course and function of tract of Goll and Burdach. 1+2+2
- (c) Discuss about the presence of different types of nuclei in hypothalamus. 3
- (d) What is the function of blood brain barrier? 2
- (e) Describe the physiological basis of REM sleep. 2

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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