

WBCS MADE EASY

MWC(O)-PHLY-II/23

2023

PHYSIOLOGY

PAPER-II

Time Allowed — 3 Hours

Full Marks — 200

If the questions attempted are in excess of the prescribed number, only the questions attempted first up to the prescribed number shall be valued and the remaining ones ignored.

Answers may be given either in English or in Bengali but all answers must be in one and same language.

Group-A

Answer any six questions.

1. (a) What is end plate potential (EPP)?
(b) How does an end plate potential lead to an increase in Ca^{++} concentration in the Sarcoplasm?
(c) Describe the role of ATP in the power and recovery strokes of Myosin head.
(d) How does the contracted muscle fibre return to its resting length?
(e) What are the causes of Muscle fatigue? 2+4+6+4+4=20
2. (a) Distinguish between resting membrane potential and action potential.
(b) Explain why the force of muscle contraction depends on the length of the muscle prior to stimulation.
(c) What will happen after injection of 'acetylcholine-esterase (AChE)' into the muscle?
(d) State the functions of glycogen and myoglobin present in the Sarcoplasm.
(e) What is Sarcopenia? 6+4+2+4+4=20
3. (a) Discuss the process of Wallerian degeneration of nerve fibre.
(b) Distinguish between neurotransmitter and neuromodulator.
(c) What are glial cells? State their functions.
(d) What is Hursh Factor? 6+(2+2)+(4+4)+2=20
4. (a) What do you understand by ganglion? What are the differences between prevertebral and paravertebral ganglia?
(b) What is diffuse thalamocortical projection system? Discuss its role in the induction of sleep and wakefulness.
(c) Describe the fluent and non-fluent aphasias. (2+4)+(2+4)+(2+6)=20

33273

For guidance of WBCS Prelims, Main Exam and Interview by WBCS Gr A Officers/
Toppers & Experts, WBCS Prelims and Main Mock Test (Classroom At Kolkata, Siliguri &
Other Places & Online), Optional Subjects, Study Materials, Correspondence Course, etc.
Call WBCSMadeEasy™ at 8274048710 / 85858543673 / 9674493673 (Sir) or mail us
at mailus@wbcsmadeeasy.in. Download WBCS MADE EASY app from play store. Miscellaneous
Service, Clerkship & other WBPSC Courses & Mock Test available from WBCS MADE EASY.
Visit www.wbcsmadeeasy.in

Please Turn Over

WBCS MADE EASY

MWC(O)-PHLY-II/23

(2)

5. (a) What are anterograde and retrograde amnesia?
(b) What is operant conditioning?
(c) Describe with a neat diagram the origin, course and termination of Pyramidal track. State the functions of Pyramidal track. $(2+2)+4+(8+4)=20$
6. (a) Why gustation is called special sense?
(b) Describe the structure of taste bud with neat diagram.
(c) Describe the neural pathway of gustatory sensation with appropriate diagram.
(d) What is agnosia? $4+6+6+4=20$
7. (a) What is Steven's power law?
(b) What do you understand by tonic and phasic adaptations of receptors?
(c) Describe the structure of an Olfactory bulb with labelled diagram.
(d) What is Umami sensation?
(e) What is electro olfactogram? $4+4+6+2+4=20$
8. (a) Describe the physiological basis of discrimination of sound frequencies and intensities.
(b) State the functions of middle ear.
(c) What is tip link?
(d) What is deafness? $8+6+4+2=20$
9. (a) What is pyrexia? How does it develop?
(b) What is non-shivering thermogenesis?
(c) What do you mean by hypothermia and hyperthermia?
(d) Discuss the causes and prevention of hypothermia.
(e) How does eccrine sweat gland differ from apocrine sweat gland? $(3+3)+2+4+4+4=20$
10. (a) Describe the chemical changes that occur in the rhodopsin molecule on exposure to light.
(b) What do you mean by "On center" and "Off center" ganglion cells in the retina?
(c) What do you understand by colour blindness? Describe the different types of colour blindness.
(d) What is glaucoma? $8+4+(2+4)+2=20$

WBCS MADE EASY

(3)

MWC(O)-PHLY-II/23

Group-B

Answer *any four* questions.

11. (a) Write the principle of physical training.
(b) What are overtraining and detraining?
(c) Describe the effects of long term physical training on skeletal muscle.
(d) Describe the basic concept of lactate threshold and lactate tolerance.
(e) What do you mean by isotonic and isometric work? Give example. $2+4+6+4+4=20$
12. (a) Describe briefly the physiological functions of growth hormone.
(b) What are the hypothalamic releasing factors? State their functions on anterior pituitary.
(c) How the posterior pituitary hormones are transported from their site of synthesis of the hypothalamus to their site of release at pituitary?
(d) State the origin and functions of somatomedial. $6+(2+4)+4+4=20$
13. (a) T_3 is more potent than T_4 .—Discuss with reason.
(b) Describe the role of pendrin and megalin protein on thyroid hormone biosynthesis.
(c) What are the differences between calcitriol and calcitonin?
(d) What do you mean by Type I and Type II diabetic mellitus?
(e) Why ketosis develops in diabetes mellitus?
(f) What do you mean by Insulin Shock? $2+4+4+4+4+2=20$
14. (a) Discuss the source and functions of Mineralocorticoids.
(b) What are the adrenal medullary hormones? Describe the role of adrenal medullary hormone in the regulation of stress.
(c) What is pheochromocytoma? State its symptoms. $(1+6)+(3+4)+(2+4)=20$
15. (a) Describe with suitable diagram the histological structure of an ovary.
(b) What is menopause? Describe the post-menopausal physiological changes in female.
(c) Name the accessory sex organs in male.
(d) How many spermatozoa are produced from spermatogonia?
(e) What is blood testis barrier? $5+(1+4)+4+2+4=20$
16. (a) Name the diseases that can be controlled by immunization programmes.
(b) What are the social importance of immunization against disease?
(c) Discuss the measures that could be taken for prevention of hepatitis.
(d) Discuss briefly the non-auditory effect of noise on human body.
(e) What are the principles of family planning? $4+6+3+4+3=20$