

15/01/2024

Printing Pages :2

SVSU/R/I

Paper Code: MBBS- 121

Enrollment No.

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M.B.B.S.

First Professional Examination, 2023

Physiology – I

[Time : Three Hours]

[Max. Marks : 100]

Note : Attempt all the questions. Use separate answer sheets for Section A & Section B. Parts of a question must be attempted in sequence. Draw well labeled diagrams wherever necessary.

MCQs (separate sheet will be provided)

[01x20=20]

SECTION - A

1. 58 years old hypertensive male patients came to emergency with complaints of severe chest pain since one hour with nausea, vomiting & perspiration. He also complained about pain in left neck and shoulder region. His blood pressure was 100/70 mmHg. His skin was cold & clammy.

- What is the probable diagnosis? (1 Mark)
- Explain the ECG changes in above condition? (3 Marks)
- What is the Physiological basis of treatment for this condition? (3 Marks)
- Explain the special features of coronary circulation. (3 Marks)

2. Describe in brief.

[5x5=25]

- Active Transport
- Resting Membrane Potential
- Excitation contraction coupling.
- Intrinsic Pathway of coagulation
- Megaloblastic anemia
- Heart Sounds

[P.T.O]

3. Answer in 1-2 lines

[5X1=5]

- a) Explain why mild to moderate hypoxia stimulates the respiration but severe hypoxia depresses it?
- b) Describe role of dietary fibres.
- c) Hering Breur inflation Reflex.
- d) Obligatory Urine Volume
- e) Enumerate functions of Bile salts.

Section - B

1. A 43 year old presents presents to the OPD with complaint of epigastric pain. After a thorough workup, he is diagnosed with "Peptic Ulcer disease". He is started on a medication that inhibits "Proton Pump" of the stomach

[4+3+3=10]

- a. Explain the functioning of "Proton Pump" mentioned above.
- b. What are the factors preventing gastric mucosa from damage ?
- c. What is the role of gastric secretions in digestion of food?

2. Write short notes on

[5x6=30]

- a. Humoral Immunity
- b. Countercurrent Multiplier system
- c. Factors affecting Cardiac Output
- d. Micturition reflex
- e. Acclimatization to high altitude
- f. Homeostasis and feedback mechanisms

Enrollment No.

M.B.B.S.- 121

Invigilator's Signature

FIRST PROFESSIONAL EXAMINATION 2023**PHYSIOLOGY - I****Multiple Choice Questions****Time : 15 Minutes****Max. Marks : 20****Marks Obt. :**

Note : Write your Enroll. Number on Question paper. Each MCQ carries 01 mark. Each Question has only one best correct response. Encircle the correct answer letter. More than one encircle or any over writing will be considered as wrong answer. There is no negative marking. **DO NOT** use pencil for writing.

Q. MCQs**(01x20 = 20)**

1. Which of the following does NOT change with exercise:
 - a) Central venous pressure
 - b) End diastolic Volume
 - c) Cerebral blood flow
 - d) Cutaneous blood flow
2. Korotkoff sounds are produced due to
 - a) aortic valve closure
 - b) Mitral valve opening
 - c) arterial turbulence
 - d) arterial valve expansion
3. Windkessel effect is seen in
 - a) large elastic vessels
 - b) capacitance vessels
 - c) through fare channels
 - d) capillaries
4. Which of the following is an example of positive feedback mechanism
 - a) Secretion of thyroxine by TSH
 - b) LH surge at mid-cycle
 - c) Secretion of Insulin by blood glucose
 - d) Inhibition of Renshaw cell in spinal cord
5. Action potential conduction velocity is influenced by
 - a) Axon diameter
 - b) Myelination
 - c) Temperature
 - d) All of them
6. Which one of the following tissues has highest number of gap junctions?
 - a) Neurons
 - b) Cardiac muscles
 - c) Skeletal muscles
 - d) Epithelial cells
7. Which one of the following processes DOES NOT exhibit 'saturation kinetics'?
 - a) Na⁺ coupled active transport
 - b) Facilitated diffusion
 - c) Simple diffusion
 - d) Na⁺-Ca⁺² exchanger
8. Myelin sheath in peripheral nerves is provided by
 - a) Oligodendrocyte
 - b) Neuron
 - c) Connective tissue cells
 - d) Schwann cell

[P.T.O.]

9. Functions of EOSINOPHILS includes ALL of the following EXCEPT?
- Detoxify allergy producing substances
 - Provide mucosal immunity in Respiratory tract
 - Defense against Parasitic infestation
 - Causes opsonization of Bacteria
10. Immediate Hypersensitivity reaction is due to:
- IgE
 - IgG
 - Activated T cells
 - Cytotoxic T cells
11. Iron deficiency anemia is:
- Normocytic normochromic
 - Microcytic hypochromic
 - Normocytic hypochromic
 - Macrocytic hypochromic
12. HCL secretion is inhibited by all except:
- Secretin
 - Somatostatin
 - Gastric Inhibitory peptide
 - Histamine
13. In Infants, defecation often follows a meal because of
- Gastro colic Reflex
 - Enterogastric reflex
 - Ileogastric Reflex
 - Inhibition of mass movement
14. Which of the following is TRUE regarding gastric emptying?
- Decreased by gastrin
 - Decreased by CCK
 - Increased by Hyperosmotic chyme in duodenum
 - Increased by secretin
15. A person complains of passing clay coloured, bulky, greasy and foul smelling faeces for last 2-3 days, most likely he is having:
- Malabsorption syndrome
 - Pancreatic insufficiency
 - Hepatitis
 - Obstruction of bile ducts
16. Most of the CO₂ that is transported in blood is
- dissolved in the plasma.
 - bound to hemoglobin.
 - In the form of carbonic acid.
 - In the form of bicarbonate ion.
17. Which one is NOT a major buffer in blood?
- Plasma protein
 - Hemoglobin
 - Phosphates
 - Bicarbonate
18. Which is the most potent coronary vasodilator?
- Adenosine
 - Lactate
 - Prostaglandins
 - Dopamine
19. Macula densa cells get stimulated by:
- Hypovolemia
 - Decreased Na⁺
 - Decreased K⁺
 - Increased K⁺
20. Which of the following changes would tend to decrease GFR?
- Increased Afferent arteriolar resistance
 - Decreased hydrostatic pressure in Bowman's capsule
 - Increased glomerular capillary filtration coefficient
 - Decreased plasma colloid osmotic pressure

[P.T.O.]

SECTION – B

Q.1 Write short notes on :

(5x2 = 10)

- Write down components of Basal Ganglia and comment on Parkinson's disease.
- Explain why is reading newspaper/ magazine in moving bus so difficult?

Q. 2 Write short notes on :

(5x6=30)

- Accommodation reflex
- regulation of Body temperature
- Refractive errors of eye
- Enlist ascending tracts and draw labeled diagram of Dorsal Column Medial Lemniscus System
- Spinal Shock
- Withdrawal reflex

Enrollment No.

M.B.B.S.-122

Invigilator's Signature

FIRST PROFESSIONAL EXAMINATION JANUARY 2023

Physiology - II

Multiple Choice Questions

Time : 15 Minutes

Max. Marks : 20

Marks Obt. :

Note : Write your Enroll. Number on Question paper. Each MCQ carries 01 mark. Each Question has only one best correct response. Encircle the correct answer letter. More than one encircle or any over writing will be considered as wrong answer. There is no negative marking. DO NOT use pencil for writing.

Q. MCQs

(1x20 = 20)

Q.1 Wolff-Parkinson- White Syndrome is characterized by

- (a) Prolongation of PR interval (b) QRS deflection shortens with slurred up stroke
(c) Presence of irritable ectopic focus in the ventricles (d) Normal PJ interval

Q.2 The hallmark finding in the ECG of acute myocardial infarction is

- (a) Depression of the ST segment in the leads overlying the area of infarct
(b) Elevation of the ST segment in the leads overlying the area of infarct
(c) Appearance of Q wave in the leads in which normally it is absent
(d) The absence of Q wave in the leads in which normally it is present

Q.3 The most important organ of peripheral vascular resistance is

- (a) Skeletal muscles (b) Brain
(c) Heart (d) Liver

Q.4 Warm shock is the term applied to the

- (a) Hypovolemic (b) Cardiogenic shock
(c) Low resistance shock (d) Surgical shock

Q.5 Which of the following statement is false?

- (a) Obstructive shock may be caused by tension pneumothorax
(b) Myocardial infarction predispose to congested shock
(c) Reflex warming of a shock patient is helpful to maintain adequate tissue perfusion
(d) Generalised antigen-antibody reaction produces anaphylactic shock

Q.6 ACTH secretion gets inhibited by

- (a) Baroreceptor discharge (b) Emotional stimuli (anger, anxiety, fear, frustration)
(c) Stress (surgical operation, haemorrhage, hypoxia etc.) (d) Trauma, exercise, exposure to cold

Q.7 In Addison's disease the following is seen

- (a) Hyperkalemia (b) Increase in ECFV
(c) Hyperglycemia (d) High blood pressure

Q.8 Turner's syndrome, not true is

- (a) Abnormality associated with female phenotype
(b) Commonest presenting constitution with genetically female
(c) Patients are tall with webbing of neck
(d) Sexual development of female type

Q.9 Onset of puberty is under check by all of following except

- (a) Hypothalamus is more sensitive to inhibitory effects of gonadal steroids
(b) Inhibitory effect of melatonin
(c) Decreased circulating levels of FSH and LH
(d) High circulating levels of FSH & LH

Q.10 Time of ovulation is usually

- (a) 12 days prior to menses
- (c) 16 days prior to menses

- (b) 14 days prior to menses
- (d) 18 days prior to menses

Q.11 Autonomic ganglia are

- (a) Cholinergic
- (c) Noradrenergic

- (b) Adrenergic
- (d) Dopaminergic

Q.12 Brown sequard syndrome is characterized by all except

- (a) Pain and temperature loss on opposite side
- (c) Motor paralysis on same side

- (b) Loss of kinesthetic sensations on opposite side
- (d) Fine touch preserved on same side

Q.13 Neocerebellum is concerned with control of

- (a) Skilled voluntary movements
- (c) Postural reflexes

- (b) Trunk limb muscles
- (d) Equilibrium

Q.14 The cerebellum

- (a) Has a totally inhibitory output from its cortex
- (b) Has only inhibitory signal output from its deep nuclear layers
- (c) Has a conscious interpretation of motor activity
- (d) Has inhibitory influence on muscle tone in humans

Q.15 Which of the papilla do not contain taste buds?

- (a) Fungiform
- (c) Vallate

- (b) Filiform
- (d) Foliate

Q.16 Bilateral destruction of primary cortex causes

- (a) Difficulty in interpretation of sound
- (c) Complete loss of hearing

- (b) Difficulty in hearing
- (d) Vertigo

Q.17 Intraocular fluid, not true is

- (a) Formed from capillaries of ciliary process
- (c) Maintains intraocular pressure

- (b) Reabsorbed into intrascleral venous plexus
- (d) Provides nutrition to choroid

Q.18 In athletes bradycardia is because of

- (a) Increased sympathetic tone
- (c) Decreased cardiac output

- (b) Increased vagal tone
- (d) Low venous return

Q.19 Yoga differs from conventional exercise that in yoga

- (a) Sympathetic nervous system dominates
- (c) Provides normalization of muscle tone

- (b) Is goal oriented
- (d) Awareness is external

Q.20 Antioxidant vitamins include all except

- (a) Vitamin E
- (c) Vitamin A

- (b) Vitamin C
- (d) Vitamin D
