BR-M20173

Seat No. _____

First year M. B. B. S. Examination

April - 2021

Physiology : Paper-1

Time : **3** Hours] [Total Marks : **100**

SECTION-I

1 Enumerate different clotting factors and describe the mechanism of coagulation. **12**

OR

What is immunity ? What are the different types of immunity ? Describe the role of lymphocytes in immunity. **12**

2 Write notes on : (any three out of four) **12**

(a) Gastric motility
(b) Surfactant
(c) Heart sound
(d) Respiratory centers

3 (a) Describe professional qualities and roles of physician. **6**

(b) Explain in few sentences : (all are compulsory) **10**

(a) Folic acid deficiency leads to megaloblastic anaemia.
(b) Vitamin K deficiency leads to bleeding disorder.
(c) Bile salts are necessary for digestion of fat.
(d) Deep sea diver should be brought to surface slowly.
(e) Normal and quiet expiration is a passive act.

4 Give the answer of the following MCQs from given options : (all are compulsory) **10**

(1) Globulin is synthesized from all except :
(A) Tissue macrophages (B) Plasma Cells
(C) Lymphocytes (D) Kidney

(2) Combination of haem with oxygen is called :
(A) Oxyhaemoglobin (B) Oxidation
(C) Oxygenation (D) Oxidized haem

(3) Neutropenia is seen in :
(A) Bone marrow depression
(B) Menstruation
(C) Pregnancy
(D) Exercise

(4) Immediate hypersensitivity reaction is due to :
(A) IgE (B) Activated T cells
(C) IgG (D) Cytotoxic T cells

(5) All of the following muscles help in respiration except :
(A) Sternocleidomastoids (B) Intercostals
(C) Deltoid (D) Serratus anterior

(6) Pons contains :
(A) Apneustic centre
(B) Ventral group of neurons
(C) Dorsal group of neurons
(D) All of the above

(7) Hyperbaric oxygenation is useful in all except :
(A) Congenital heart disease
(B) Gas gangrene
(C) carbon monoxide poisoning
(D) Nitrogen toxicity

(8) Venous return is increased in :
(A) Inspiration
(B) Expiration
(C) Coronary artery disease
(D) Standing

(9) The stomach secretes all of the following except :
(A) Gastrin (B) Hydrochloric acid
(C) Pepsin (D) Intrinsic factor

(10) Which of the following contractions are not seen in the colon ?
(A) Segmental (B) Peristaltic
(C) Mass action (D) Eccentric

SECTION - II

5 Describe pressure and volume changes of right side of heart during Cardiac cycle. Correlate these changes with phonocardiogram and Jugular venous pulse. **12**

OR

Define cardiac output. How it is measured and discuss factors controlling it ? **12**

6 Write notes on : (any three out of four) **12**
(a) Dysbarism
(b) Transport of oxygen in body
(c) Glomerular filtration rate
(d) Juxtaglomerular apparatus

7 (a) What is normal body temperature ? Explain regulation of body temperature. **6**

(b) Explain in few sentences : (all are compulsory) **10**

(a) Juxtaglomerular apparatus plays a role in blood pressure regulation.

(b) Cardiac muscles have longest refractory period.

(c) Vasa recta acts as a counter current exchanger.

(d) When body feels cold, shivering occurs.

(e) Cardiac output increases with increase of heart rate.

8 Give the answer of the following MCQs from given options : (all are compulsory) **10**

(1) Oxygen affinity with haemoglobin decrease in :

(A) Hypoxia (B) Hypothermia

(C) HbF (D) Increase in blood pH

(2) A person is having normal lung compliance and increased airway Resistance. The most economical way of breathing for him:

(A) Rapid and deep (B) Rapid and shallow

(C) Slow and deep (D) Slow and shallow

(3) All are the examples of pacemaker tissue of the heart except :

(A) SA node

(B) AV node

(C) Ramification of Bundle of His

(D) Internodal atrial pathways

(4) The component of cardiac tissue having the highest propagation velocity is :

(A) Purkinje fibers (B) AV node

(C) Atrial muscle (D) Ventricular muscle

(5) Which of the following is true about fourth heart sound ?

(A) Can be heard by the unaided ear

(B) Frequency is greater than 20 Hz

(C) Heard during ventricular filling phase

(D) Heard during ventricular ejection phase

(6) Normal QRS complex is approx.....

(A) 0.02 sec. (B) 0.04 – 0.06 sec

(C) 0.08-0.12 sec (D) 0.1-0.15 sec

(7) Renin is secreted by

(A) Aldosterone (B) Angiotensin I

(C) Angiotensin II (D) Juxta glomerular cells

(8) Hormones secreted by kidney include all except :

(A) Vitamin D (B) Erythopoietin

(C) Renin (D) Vitamin A

(9) Tubular secretion is essential for all except :

(A) K+ (B) H+

(C) Drugs (D) Glucose

(10) Pancreatic juice secretion is increased by all except :

(A) Products of digestion (B) Cholecystokinin

(C) Secretin (D) Gastrin