



PHYS 800
Time allowed three Hours
Total marks : 270

MSC Physiology
Second Paper

Tanta University
Faculty of Medicine
Date: 22 /11/2020

All the questions must be answered :-

- 1. Discuss: Physiological significance of central venous pressure , Venous return and cardiac output in regulating cardiovascular functions under normal condition and in cases of hypoeffective and hypereffective hearts . (40 marks)**
- 2. Discuss: The physiological basis reflecting the interaction between elastic recoil and compliance of lung and chest wall on respiratory function of the lung. (40marks)**
- 3. Discuss : Physiological significance of carbonic anhydrase enzyme. (30 marks)**
- 4. Discuss: Role of higher centers in controlling autonomic functions. (30 marks)**
- 5. Discuss : Role of secondary active transport in different renal tubules. (30 marks)**
- 6. Discuss : Physiological significance of tissue macrophage system in inflammatory response to injury. (30 marks)**
- 7. Case study . (25 marks)**

40 years old patient admitted to emergency department complaining of increasing dyspnea . Chest physician diagnose him as pulmonary fibrosis and refered for pulmonary function testing to assess the progression of the disease.

Which of the following laboratory values is consistent with his diagnosis.

- a. Decrease FEV1/ VC %.
- b. Decrease diffusion capacity of the lung.
- c. Increase residual volume.
- d. Increase airway resistance.

8. Choose only one choice (45 marks for 15 MCQ)

1- Normally capillary permeability is lowest in:

- a. Brain. b. Kidney. c. Liver. d. Spleen.

2- Which of the following values is greater in pulmonary circulation than systemic:

- a. Mean arterial blood pressure.
b. Blood volume.
c. Vascular compliance.
d. Sympathetic tone.

3- Peroid between first and second heart sounds represent:

- a. Ventricular systole.
b. Isometric relaxation phase.
c. Atrial systole.
d. A-V nodal delay..

4- Parasympathetic stimulation to bronchial smooth muscle induce:

- a. Increase anatomical dead space.
b. Increase lung compliance.
c. Increase resistive work of breathing.
d. Increase elastic work of breathing.

5- Spirometer could be used directly to measure :

- a. Inspiratory capacity.
b. Residual volume.
c. Functional residual capacity.
d. Total lung capacity.

6- In which of the following conditions the respiratory muscles are relaxed:

- a. Functional residual capacity.
b. Residual volume.
c. Expiratory reserve volume.
d. Inspiratory reserve volume.

7- Respiratory alkalosis differ from metabolic alkalosis in that there is:

- a. Increase bicarbonate blood level.
b. Increase arterial PCO_2 .
c. Decrease arterial PCO_2 and Increase bicarbonate blood level.
d. Normal or low blood level of bicarbonate.

8- Most of the filtered bicarbonate is reabsorbed in :

- a. Proximal convoluted tubules. c. Medullary collecting ducts
b. Distal convoluted tubules. d. Loop of Henel.

9- Normally sodium reabsorption in descending limb of loop of Henle:

- a. Not occur.
- b. Occur by primary active transport.
- c. Occur by secondary active transport.
- d. Occur by facilitated diffusion.

10- The causes of jaundice is likely to be hemolysis if there is :

- a. Pale stool.
- b. Dark urine.
- c. Increase blood cholesterol level.
- d. Normal fat digestion.

11- The following could increase rate of gastric emptying:

- a. Increase intraduodenal volume.
- b. Increase intragastric volume.
- c. Hyperosmolarity of duodenum.
- d. Acidity of duodenum.

12- Blocking of alpha adrenergic receptors could induce:

- a. Decrease total peripheral vascular resistance.
- b. Decrease sweating .
- c. Bronchoconstriction.
- d. Contraction to pyloric sphincter

13- Vagal stimulation induce:

- a. Long P-R interval .
- b. Short P-R interval.
- c. Contraction to splenic capsule.
- d. Decrease peripheral vascular resistance.

14- Plasmin is involved in enzymatic:

- a. Destruction of clotting factors.
- b. Activation of clotting factors.
- c. Activation of thrombin.
- d. Activation of prothrombin.

15- Formation of erythropoietin is:

- a. Stimulated by acidosis.
- b. Stimulated by alkalosis.
- c. Inhibited by androgen.
- d. Inhibited by Vitamin B12.