Biomedical Engineering Program
Academic Year 2018/2019
Level 300
Midterm Physiology Exam

Examiner (s) Name (s): Dr. Rasha Soliman Elghaba	
Course Title: Introduction to Medical physiology, Level 300	**Exam Date: 2-04-2019**
Exam Pages: 5 pages	**Exam Time: 12.45 pm** To **13.45 pm**
	Exam Total Mark: 20 marks

Student's Name:..... **Student's University ID:** .....

Question #	Question Style	Number of Question Items	Item Mark	Question Total Mark	Student's Mark
A	MCQ	10 questions	1 mark	10 marks	
B	Define	4 questions	1 mark	4 marks	
C	Enumerate	3 questions	2 mark	6 marks	

Examiner (s) Signature:.....Rasha Elghaba.....

Students' Exam Instructions

1. Commitment to the exam time is mandatory.
2. No extra exam time is allowed.
3. No extra answer sheets would be allowed.
4. The examiner will be available only for the first ***10 minutes*** of the exam. You are advised to glance at the exam questions in case you need more clarification from the examiner.
5. All questions are to be answered.

Best Wishes

Question # A: choose the best single answer **(10 marks)**

1) Which of the following is a characteristic of simple diffusion

a) Occurs against an electrochemical gradient
b) Is saturable
c) Requires energy
d) Is not rate limited

2) Concerning intracellular fluid, which of the following is true?

a) It includes the plasma and interstitial fluid
b) Normally, it is about 3 litres
c) It is the fluid outside the cells.
d) Contain high K^+ ions and less Na^+ ions

3) The RBCs functions include which of the followings:

a) They play a role defense functions against microorganisms
b) They carry O_2 and CO_2
c) They play a role in haemostasis
d) They exert osmotic pressure of blood

4) Erythropoiesis in adult individuals occurs normally in the:

a) Liver.
b) Red bone marrow.
c) Yellow bone marrow.
d) Spleen.

5) Functions of platelets include which of the followings?

a) O_2 transport from lungs to tissues
b) Defense function against infections
c) Production of RBCs
d) Stop of bleeding from injured blood vessels
e)

6) The normal respiratory rate in adults is

a) 2-6 breath/min
b) 12-16 breath /min
c) 40-60 breath /min
d) 80-100 breath /min

7) The respiratory part of lung performs which of the following functions?

a) They are important in conditioning of inspired air
b) They are important in filtration of inspired air
c) They are important in gases exchange
d) They are important in moistening of inspired air

8) During depolarization phase of action potential in nerve fibers:

a. Voltage activated Na^+ channels open.
b. The membrane becomes impermeable to Na^+.
c. The membrane potential becomes more negative.
d. K^+ ions diffuse outside.

9) During skeletal muscle contraction, Ca^{2+} ions bind to which of the following proteins ?

a) Troponin
b) Actin
c) Myosin
d) Tropomyosin

10) Salutary conduction in nerve fibers:

a) Occurs in unmyelinated nerve fibers.
b) Occurs by jumping of charges from one node of Ranvier to another.
c) Is relatively slow 0.5-2.0 meter / second.
d) Occurs in the neuromuscular junction.

Question # B: Define the following

1) Homeostasis **(1 marks)**

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2) Osmosis **(1 mark)**

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3) Erythropoiesis **(1 marks)**

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4) Action potential of the nerve fiber. **(1 mark)**

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Question # C: Enumerate the following

1) Causes of resting membrane potential (RMP) in the nerve fiber (2 marks)

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2) Types of hypoxia (2 marks)

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3) Steps of skeletal muscle contraction (2 marks)

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End of Exam