Biomedical Engineering Program
Academic Year 2017/2018
Level 300
Final Term Physiology Exam

Examiner (s) Name (s): Prof. Dr. Abdelaziz M. Hussein	
Course Title: Medical Physiology, Level 300	**Exam Date: 4-06-2018**
Exam Pages: 7 pages	**Exam Time:** From **9.00 pm** To **11.00 pm**
	Exam Total Mark: 50 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	1.0 mark	10 marks	
B	Matching	5 questions	1.0 mark	5 marks	
C1	Complete			4 marks	
C2	Complete			4 marks	
C3	Complete			3 marks	
C4	Complete			5 marks	
C5	Complete			3 marks	
C6	Complete			5 marks	
C7	Complete			4 marks	
C8	Complete			3 marks	
C9	Complete			4 marks	
Examiner (s) Signature:.....					

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.
6. .....

Best Wishes

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

1- During depolarization phase of action potential in nerve fibers:

a. Voltage activated Na^+ channels open.

b. The membrane becomes highly permeable to K^+.

c. The membrane potential decreases from +35 mv to - 70 mv

d. K^+ ions diffuse inside.

2- Continuous conduction of nerve impulse in nerve fibers:

a. Occurs in myelinated 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.

3) Which of the followings is NOT a function of plasma proteins?

a) Transport of O2 from lungs to tissues

b) Defense function

c) Buffering of blood pH

d) Share in blood viscosity

4) Which of the following types of hypoxia is due to defect in internal respiration ?

a) Hypoxic hypoxia

b) Anemic hypoxia.

c) Histotoxic hypoxia

d) Stagnant hypoxia

5) The WBCs perform which of the following functions?

a) They play a role in O2 transport

b) They share in blood viscosity

c) They play a role in immunity

d) They contain excellent acid base buffer (hemoglobin)

6) Which of the followings is a function of respiratory conducting part of the lungs?

a) They are important in conditioning of inspired air

b) They are important in gases exchange

c) They are important in filtration of inspired air

d) They are important in moistening of inspired air

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

a) Troponin

b) Actin

c) Myosin

d) Tropomyosin

8) Which of the followings is the normal pacemaker of the heart ?

a) SA node

b) AV node

c) AV bundle

d) Purkinje fibers

9) Which of the followings hormone is regulate water reabsorption from distal segment of nephron?

a) Oxytocin

b) Insulin

c) Aldosterone

d) Antiduiretic hormone (ADH)

10) Which of the following is <u>NOT a</u> function of Body water?

a) Moistens tissues and organs

b) Lubricate joints

c) Dissolve minerals

d) Protein synthesis

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Question # B: **(5.0 marks)**

Match the parameter in column (A) with its normal value in column (B)

A	B
11) Systolic arterial blood pressure 120 (b)	a) – 70 mV
12) Cardiac output 5L/min (g)	b) 120 mmHg
13) Normal RBCs count in females e	c) 25 L/ min
14) Resting membrane potential in nerve fibers –70 mV	d) 1200 ml/min
15) Renal blood flow d	e) 4.5- 5.0 millions/mm^3
	f) 135 ml
	g) 5 L/min
	h) 80 mmHg

Question # C:

1) Regarding rhythmicity of the cardiac muscle **(4 marks)**

a) Definition.....

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b) Factors affecting

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2) Facilitated diffusion **(4 marks)**

a) Definition

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b) Types (give example for each type)

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3) Functions of distal tubules include **(3 marks)**

a) .....

b) .....

c) .....

4) Regarding erythropoiesis (RBCs formation) **(5 marks)**

a) Site

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b) Factors affecting its formation (4 factors)

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5) Functions of air conducting zone (part) of the lung include **(3 marks)**

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6) Regarding cardiac output **(5 marks)**

a) Definition.....

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b) Factors affecting

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7) Regarding resting membrane potential in nerve fibers **(4 marks)**

a) Definition.....

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b) Causes (3 causes)

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8) Mention steps of neuromuscular transmission **(3 marks)**

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9) Waves of electroencephalogram (EEG) **(4 marks)**

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End of Exam