


<p>Tanta University Faculty of Medicine Anesthesia Department. Date: 22-8-2021.</p>	<p>Exam: 1st part of MD (Physiology) No. of Questions: Time allowed: 3 hours Total marks: 45</p>	
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1. The liver is the largest internal organ and the largest gland in the body (15 marks)

A. Outline hepatic blood flow. Contrast the implications of anesthesia and surgery on it. (4 marks)

B. Define the normal values of plasma proteins. Where is albumin produced? What are the main functions of plasma proteins? (4 marks)

C. Mention the causes of decreased plasma albumin. What are the implications of low plasma protein levels in surgical patients? (5 marks)

D. Should low albumin be corrected in critically ill patient? (2 marks)

2. The primary functions of the respiratory system are delivery of O₂ to tissue and elimination of CO₂ from it. (15 marks)

A. Outline changes in oxygen tension from atmospheric air to tissues at sea level. (4 marks)

B. Define functional residual capacity and closing volume. Discuss their changes in elderly patient undergoing upper abdominal surgery. (4 marks)

C. Contrast factors affecting oxygen and carbon dioxide transport across alveolar-capillary membrane. (3 marks)

D. Explain physiological basis of hypoxemia due to hypoventilation. (4 marks)

3. Homeostasis is the ability of the body to maintain its environment within the physiological functions including but not limited to prevention of intravascular thrombosis. (15 marks)

A. Outline the physiological basis of the coagulation. (4 marks)

B. Describe the process of fibrinolysis. (4marks)

C. Explain with examples the increased risk of perioperative venous thromboembolism. (4 marks)

D. Explain the causes of death complicating a patient with poly-trauma. (3 marks)

.....GOOD LUCK.



**Tanta University, Faculty of Medicine,
Department of Ophthalmology
MD Examination
[Final Semester]
Ocular Physiology
AUGUST, 2021**

**All questions to be answered
Exam Duration (3) hours**

- 1. Discuss Blood retinal barriers: Types and clinical values** 5 degrees
- 2. Discuss Theories of binocular vision and clinical applications:** 5 degrees
- 3. Discuss briefly**
 - a. Translamina cribrosa pressure difference (TLCPD) and how this influences the appearance of optic nerve head in various diseases** 2.5 degrees
 - b. Factors determining the amount of medications that penetrate the cornea** 2.5 degrees



**Multiple choice questions: Choose only one answer
(15 degrees, 2 degrees for each question)**

1. Retinal ganglion cells: All is true EXCEPT:

- a. Transmit impulses faster in narrow-diameter axons
- b. Mediate the transmission of spatially coded signals
- c. Mostly have axons that contribute to the parvocellular system
- d. That form the magnocellular system encode non-color information
- e. That form the parvocellular system encode high spatial frequency information

2. In Horner's syndrome, all is true EXCEPT:

- a. Cocaine prevents reuptake of noradrenaline at adrenergic synapses
- b. Hydroxyamphetamine dilates a postganglionic sympathetic lesion
- c. Postganglionic lesions dilate with 1:1000 adrenaline
- d. Postganglionic lesions demonstrate denervation supersensitivity
- e. Preganglionic and central lesions cannot be distinguished pharmacologically

3. Ciliary body epithelium, which is TRUE:

- a. Regulates intraocular pressure via adrenergic receptors
- b. Is the major site of action for pilocarpine (in reducing intraocular pressure)
- c. Contains more alpha 1 than alpha 2 adrenergic receptors
- d. Contains more beta 1 than beta 2 adrenergic receptors

4. The volume of aqueous humor in the anterior chamber is:

- a. 400 microlitres
- b. 250 microliters
- c. 100 microliters
- d. 50 microliters
- e. 15 microliters

5. Which statement is FALSE? The transport of molecules across the lens surface:

- a. Primarily utilizes the Na^+/K^+ ATPase pump within the lens epithelium
- b. Including chloride and water involves an active transport mechanism
- c. Utilizes specific glucose transporters
- d. Utilizes specific ascorbate transporters

6. A complex cell in the visual cortex:

- a. Responds best to lines - but requires visual input from both eyes



- b. Responds best to moving lines of any orientation
 - c. Responds best to angles
 - d. Responds maximally when a line is anywhere in its receptive field providing it is in the correct orientation
7. Which one of the following concerning the effects of light on rod outer segment metabolism is FALSE?
- a. Light absorption leads to configurational changes in rhodopsin and activation of transducing
 - b. Transducing, through an amplification cascade, activates phosphodiesterase
 - c. Phosphodiesterase causes a fall in cyclic guanosine monophosphate (cGMP) levels
 - d. Falling intracellular cGMP leads to closure of sodium channels, with subsequent further depolarization of the rod outer segment
8. The lipid layer has the following functions EXCEPT:
- a. retard evaporation
 - b. convert the corneal epithelium from a hydrophobic to a hydrophilic layer, which is essential for the even and spontaneous distribution of the tear film
 - c. contribute to the optical properties of the tear film because of its position at the air-tear film interface
 - d. maintain a hydrophobic barrier (lipid strip) that prevents tear overflow by increasing surface tension
9. Adrenergic agonists generally
- a. Increase aqueous humor production, increase outflow facility, and increase intraocular pressure
 - b. Increase aqueous humor production, decrease outflow facility, and increase intraocular pressure
 - c. Increase aqueous humor production, increase outflow facility, and decrease intraocular pressure
 - d. Decrease aqueous humor production, decrease outflow facility, and decrease intraocular pressure
10. A change in Goldmann visual field stimulus from I4e to II4e is equivalent to
- a. 1 log
 - b. 2 log
 - c. 3 log
 - d. 4 log



11. An Amsler grid held at 33 cm measures approximately how many degrees of central vision?

- a. 5
- b. 10
- c. 20
- d. 30

12. An optokinetic nystagmus (OKN) strip moved to the left stimulates what part of the brain?

- a. right frontal, left occipital
- b. right frontal, right occipital
- c. left frontal, left occipital
- d. left frontal, right occipital

13. Which statement concerning the visual evoked response (VER) is FALSE?

- a. The VER is an electrical signal that must be extracted from the simultaneously generated electroencephalogram
- b. The stimulus may consist of either a flash or white light or a pattern, presented either transiently or continuously via pattern reversal
- c. VER is not useful for distinguishing optic neuropathy from retinal disorders
- d. Flash VER is used for visual acuity assessment in preverbal children.

14. On routine examination of a 37-year-old man, you find multiple midperipheral yellowish flecks in both eyes with flecks in the posterior pole. Fluorescein angiogram reveals a characteristic silent choroid appearance. Which one of the following electrophysiologic findings is characteristic for this condition?

- a. EOG light peak to dark trough is profoundly reduced
- b. Photopic ERG amplitudes are extinguished
- c. Scotopic ERG amplitudes are extinguished
- d. ERG amplitudes are often normal

15. Which of the following is TRUE about Jones dye test in epiphora:

- a. it is used to diagnose complete obstruction of the lacrimal drainage system
- b. if the Jones I (primary) test is normal, the cause may be due to hypersecretion of tear
- c. if the Jones II (secondary) test is positive, there is a partial nasolacrimal duct obstruction
- d. if the Jones II (secondary) test is negative, the abnormality may be due to pump failure



Department of physiology

Time allowed: Three hours

Total marks: 90

Physiology
MD Psychology

Tanta University
Faculty of Medicine
Code: Neuro PSCH 900P1
Date: 17 /8/ 2021

All questions must be answered:

1. Discuss: Types and mechanisms of sleep . (25 marks)
2. Discuss: Types and mechanisms of learning. (25 marks)
3. State: Physiological significance of cortical association areas. (20 marks)
4. Differentiate between : Static and dynamic stretch reflex . (20 marks)

إمتحان الشفهي يوم السبت 28/8/2021 في قسم الفسيولوجي الساعة التاسعة صباحا



Department of physiology
Time allowed: Three hours
Total marks: 90

Physiology
MD Tropical

Tanta University
Faculty of Medicine
Code: TROP 9001
Date: 17 /8/ 2021

All questions must be answered:

1. **Discuss: Role of enteric nervous system in regulating gastrointestinal function . (20marks)**
2. **Discuss: Physiological basis of cholagogues and cholertics. (20 marks)**
3. **Discuss : Causes of respiratory and metabolic acidosis and their physiological correction. (20 marks)**
4. **State: Factors maintaining arterial blood pressure. (20 marks)**
5. **State : Mechanism of fever. (10 marks)**

إمتحان الشفهي يوم السبت 2021 /8/28 في قسم الفسيولوجي الساعة التاسعة صباحا