Tanta University
Faculty of Medicine
Department of Ophthalmology

Examination for August Semester
Doctorate Degree
Physiology of The Eye
12/8/2018

Time allowed: 3 hours
Total marks: 45 marks
All questions to be attempted

A) What is the Physiological basis of the following:

1. **Corneal dehydration (5 marks)**

2. **Outflow mechanism of Aqueous humor (5 marks)**

3. **Requirements for binocular single vision (5 marks)**

B) MCQ: Choose only one answer:

(15 points, 2 marks for each point)

1) **The following is present in higher concentration in the tear than in the serum:**
   a) Sodium
   b) Potassium
   c) IgG
   d) Glucose

2) **The following fact is true about human tears:**
   a) The pH of tears is 6.0
   b) The pH of tears is 7.4
   c) Tears do not contain ammonia
   d) Tears do not contain albumin

3) **Glucose metabolism in the lens principally occurs by:**
   a) Anaerobic glycolysis
   b) Aerobic metabolism
   c) Hexose monophosphate shunt
   d) Sorbitol pathway

4) **When produced, aqueous humor passes out through the membranes of:**
   a) Trabecular meshwork
   b) Corneal endothelial cells
   c) Non-pigmented cells of the ciliary body
   d) Pigmented cells of the ciliary body

5) **The principle of IOP measurement is defined by:**
   a) Schwalbe's equation
   b) Poiseuille's law
   c) Imbert-Fick principle
   d) Holladay's equation

6) **The corneal stroma is mainly composed of:**
   a) Keratan sulphate
   b) Chondroitin sulphate
   c) It is acellular
   d) Chondroitin phosphate

7) **Arrangement of stromal lamellae contributes to corneal transparency can be explained by:**
   a) Maurice theory
   b) Schwalbe's equation
   c) Imbert-Fick principle
   d) Holladay's equation

8) **Which of the following is NOT a function of RPE?**
   a) Secretion of mucopolysacharide
   b) It plays a role in the embryological development of photoreceptors
   c) Absorption of stray light
   d) Adherence to other RPE cells via zona adherens to form the blood retinal barrier

9) **In phototransduction, activation of rhodopsin occurs via:**
   a) Isomerization of retinol
   b) Glycosylation of transducing
   c) Opening of GLUT-1 receptors
   d) Unfolding of opsin

10) A number of corresponding points on the retina that projects to a definite single point in space:

a) The Auberg phenomenon
b) A horopter
c) Panum's area
d) The Pulfrich phenomenon

11) Which is the minimum threshold of Vernier hyperacuity?

a) 1 second of arc
b) 10 seconds of arc
c) 20 seconds of arc
d) 1 minute of arc

12) Which of the following can be used to isolate cone response in ERG?

a) Dim background lighting condition
b) 50 Hz flicker
c) 10 Hz flicker
d) Single flash ERG

13) In EOG, the normal Arden ratio is:

a) 1.35
b) 1.45
c) 1.55
d) 1.65

14) Regarding a relative afferent pupillary defect, which of the following statement is accurate?

a) It can't be tested if one pupil is pharmacologically dilated
b) It can be tested if both pupils are pharmacologically dilated
c) It is likely to occur with a cataract
d) It is always associated with anisocoria

15) Regarding VEP, which of the following statements is NOT accurate?

a) VEPs are a measure of the response of the occipital cortex to visual stimulation
b) VEPs can be used to assess crossover of visual pathway fibers at the optic chiasm
c) An amblyopic eye will usually have an abnormal pattern and flash VEP
d) VEPs can be used to approximate the visual acuity

-- Good Luck --