

Tanta university
Department of ophthalmology
Master degree(MSC) Examination
Ocular physiology
2022

All questions must be answered

1-Discuss blood retinal barriers (5 marks)

2-Factors affecting corneal drug permeability (5 marks)

3-Disuss light-near dissociation (5 marks)

Multiple choice questions: Chose only correct answer (1 mark each question)

1-Adaptation for vision in poor light is

- a. Complete after 2–3 minutes
- b. Due mainly to dilatation of the pupil
- c. Due to regeneration of rod but not cone pigments
- d. More effective for peripheral than central vision

2- The cones in the retina differ from rods in that they are more [Select all that apply]

- a. Numerous
- b. Concerned with color vision
- c. Sensitive to light
- d. Affected by vitamin A deficiency

3- Dilation of the pupil increases the

- A. Refractive power of the eye
- B. Spherical aberration
- C. Depth of focus
- D. Field of vision

4- In the refracting system of the eye

- A. More refraction occurs at the inner surface of the cornea than at the outer surface.
- B. The lens, by becoming more convex, can more than double the total refractive power of the eye.
- C. The back surface of the lens contributes more to accommodation than the front.
- D. Ageing reduces the maximum refractive power of the eye.

5-which of the following is not a monocular depth clue?

- A-Superimposed objects
- B-Linear perspectives
- C-Angle of image disparity
- D-Lights and shades

6-The Uthoff's phenomenon describes:

- A-Inability to distinguish faces
- B-Decrease in vision when the body is overheated
- C-Skew eye movement
- D-Decrease of vision with neck flexion

7-Uveoscleral outflow is increased by all of the following medication except:

- A-Bimatoprost
- B-Atropin
- C-Pilocarpin
- D-Apraclonide

8-Motion blindness occurs as a result of lesion in the:

- A-Frontal lobe
- B-temporal gyrus
- C-superior temporal sulcus
- D-inferior temporal sulcus

9-The following is present in higher concentration in the tear than in serum:

- A-Sodium
- B-Potassium
- C-IgG
- D-Glucose

10-Saccadic type eye movement are initiated by :

- A-The oculomotor cerebellar center
- B-Abducent nerve nucleus
- c-Trochlear nerve nucleus
- D-The temporal cortex

11-Which of the following is not a physiological property of the vitreous:

- A-transmit 85% of light wave length 300-1400 nm
- B-Prevents the globe from collapsing
- C-Refractive index of 1.66
- D-Allows accumulation of waste products such as lactic acid which can be toxic to the retina

12-which of the following statements regarding ERG is not accurate?

- A-The pattern ERG represents retinal ganglion cell activity
- B-The P50 components is always affected in macular disease
- C-The N50 components corresponds to ganglion cell activity
- D-The pattern ERG is always affected in optic nerve disease

13-Rgarding a relative afferent pupillary defect, which of the following statements is accurate ?

- A-It cannot be tested if one pupil is pharmacologically dilated
- B-It cannot be tested if both pupils are pharmacologically dilated
- C-It is likely occur with cataract
- D-Its always associated with anisocoria

14-Where is the physiological blind spot relative to the center of the visual field?

- A-superior
- B-Inferior
- C-Nasal
- D-Temporal

15-In phototransduction, activation of Rhodopsin occurs via

- A-Isomerization of retinol
- B-Glycosylation of transducing
- c-Opening of GLUT1 receptors
- D-Unfolding of opsin

Good luck

Optics Examination
Master Degree in Ophthalmology
Second Semester. February 2022
Date: 2/3/2022
Time allowed: 3 hours
Total marks: 30 marks



ANSWER ALL QUESTIONS

ILLUSTRATE WITH DIAGRAMS WHENEVER APPLICABLE

Discuss the following: (5 Marks EACH)

1. Optical principle and significance of pinhole test.
2. Clinical applications of prisms.
3. Optical principle and applications of duochrome test.

Multiple Choice Questions (1.0 Mark Each. Single answer applies)

1. The wavelength of light:
 - A. Does not change as it passes through a denser medium.
 - B. Is the distance between the summit and the trough of the wave.
 - C. Is inversely proportional to its frequency.
 - D. Is the same as the amplitude.

2. The image formed by a convex mirror is:
 - A. The same size of the object.
 - B. Erect.
 - C. Located between F and C.
 - D. Real.

3. The following is true about symmetrical prisms:
 - A. The angle of the prism apex is called the refracting angle.
 - B. They form real images of objects.
 - C. Light is deviated towards the apex.
 - D. Light with longer wavelength is deviated more than light with shorter wavelength.

4. The following technique is used for intraocular lens power calculation:
 - A. Retinoscopy.
 - B. Keratometry.
 - C. Indirect ophthalmoscopy.
 - D. B-Scan ultrasonography.

5. A glasses prescription of + 2.5 DS / - 3.5 DC X 55 is equivalent to:
- A. + 6.0 DS / - 3.5 DC X 55.
 - B. - 1.0 DS / - 3.5 DC X 145.
 - C. - 1.0 DS / + 3.5 DC X 55.
 - D. - 1.0 DS / + 3.5 DC X 145.
6. A myopic patient reports that he sees distant objects better when he pushes his glasses back closer to his eyes. This means that his glasses:
- A. Need adjustment of the inter-pupillary distance.
 - B. Need prism base out addition.
 - C. Undercorrect his myopia.
 - D. Overcorrect his myopia.
7. The following is true about contact lenses:
- A. The base curve of a contact lens is the curvature of the central portion of the back surface of the lens.
 - B. A high plus contact lens has a central thin portion.
 - C. Hard lenses abolish lenticular astigmatism.
 - D. The haptic of a scleral lens is the corneal portion.
8. The crystalline lens:
- A. Has an in-situ effective power less than its power in air.
 - B. Contributes more power than the cornea towards the refraction of the eye.
 - C. If extracted without implant can correct myopia that needs spectacle correction of -15.00D.
 - D. Has a uniform refractive index.

9. The following prescription has with-the-rule astigmatism:
- A. +3.00 / +1.25 X 180.
 - B. +3.00 / -1.25 X 90.
 - C. +3.00 / -1.25 X 135.
 - D. -3.00 / +1.25 X 90.
10. During retinoscopy at a working distance of 75 cm, the end point of refraction was reached using a +2.5 spherical lens at all meridian. The corresponding prescription of that eye is:
- A. +1.5 DS.
 - B. +4.0 DS.
 - C. +1.0 DS
 - D. -1.0 DC.
11. The following is true about dissociated image tests:
- A. The Maddox wing dissociates the eyes at distance.
 - B. Maddox rod may be used to determine cyclotropia.
 - C. When the Maddox rod cylinders are horizontal, the image seen is also horizontal.
 - D. With a Maddox rod in the vertical orientation in front of the right eye, the left eye sees a horizontal red line.
12. The original SRK formula is written as follows:
- A. $P=A-2.5L-0.9K$
 - B. $P=A-2.5K-0.9L$
 - C. $P=A+2.5K+0.9L$
 - D. $P=A+2.5L+0.9K$

13. The direct ophthalmoscope:
- A. Makes the disc of a hyperope appear larger than that of a myope.
 - B. Makes the disc of a myope appear larger than that of an emmetrope.
 - C. Gives an angular magnification of 5X
 - D. Gives a virtual erect image.
14. During retinoscopy, when there is a break indicates that
- A. The power of cylinder must be incorrect.
 - B. Both the power and the axis of cylinder must be incorrect.
 - C. The true power of astigmatism must be more positive than the trial cylindrical lens.
 - D. The true axis of astigmatism is generally between the direction of the reflex in the pupil and the band outside it.
15. In measuring the corneal curvature:
- A. There are two types of keratometers: Javal-Schiotz and Placido disc.
 - B. The central 4 mm of the cornea is assumed to be spherical.
 - C. Von Helmholtz keratometer uses a fixed image size.
 - D. The Javal-Schiotz keratometer uses two rotating glass plates to double the image.

GOOD LUCK

Tanta University
Faculty of Medicine
Department of General Surgery

Master of Ophthalmology (According to 2013 Bylaws)

General Surgery Examination – February 2022

Date: 23 Feb 2022

Time: 3 hours

Total Marks: 45

All questions should be answered

- 1) Causes, types, presentation and management of Septic Shock? (15 Marks)
- 2) Types. clinical picture, investigation and management of Thyrotoxicosis? (15 Marks)
- 3) Differential diagnosis, investigations and management of cervical lymphadenopathy? (15 Marks)

GOOD LUCK

الامتحان الاكلينيكي و الشفوى بقسم الجراحة العامة بالمستشفى التعليمى الفرنساوى
(الدور السابع)

يوم السبت ٥ مارس ٢٠٢٢ الساعة الثامنة صباحا

Tanta University
Faculty of Medicine
Ophthalmic Department



MS Ophthalmic Anatomy Examination (26/2/2022)

Part I: Answer the following questions:

- 1- Describe anatomy and applied anatomy of optic nerve head?
- 2- Describe anatomy of ophthalmic nerve and course and distribution of its branches?
- 3- Describe embryology of retina and ultrastructure of photoreceptors?

Part II: Chose the correct answer:

1- Which of the following regarding optic canal is correct?

- (A) Optic canal is funnel shaped with mouth open posteriorly.
- (B) Olfactory tract lies above optic canal.
- (C) Optic foramen lies above and lateral to superior orbital fissure.
- (D) Optic nerve and ophthalmic vein runs through optic canal.

2- Which of the following regarding cornea is correct?

- (A) Annular nerve plexus consists of myelinated fibres.
- (B) Nerve fibres travel in corneal stroma before supplying Descemet's membrane and endothelium.
- (C) Intraepithelial nerves of cornea are myelinated.
- (D) Basal cells of corneal epithelium and endothelium are columnar.

3- Which of the following regarding angle of anterior chamber is correct?

- (A) Scleral spur lies posterior to Schlemm's canal.
- (B) Wall of Schlemm's canal formed of endothelial cell layer with continuous basement membrane.
- (C) Trabecular meshwork is drained by aqueous veins.
- (D) Ciliary muscle has no role in aqueous outflow.

4- Which of the following regarding limbus is correct?

- (A) Corneal layers becomes continuous with sclera at limbus.
- (B) Surgical limbus lies slightly posterior to anatomical limbus.
- (C) Corneal limbus lie 1mm posterior to conjunctival limbus.

(D) Endothelium forms palisades of Vogt at the limbus.

5- Regarding crystalline lens the following are correct except:

- (A) Lens capsule is thickest basement membrane in body.
- (B) Lens fibre has highest protein content of any cell in the body.
- (C) Lens capsule is about 22um in thickness at anterior pole.
- (D) Lens fibre is long hexagonal prism.

6- Which of the following regarding eyelids is correct?

- (A) Orbital septum is continuous with periosteum at anterior lacrimal crest.
- (B) Orbital septum lies anterior to medial but posterior to lateral palpebral ligaments.
- (C) Upper tarsal plate measures 5mm centrally.
- (D) Medial palpebral ligament connects tarsi to posterior lacrimal crest.

7- Regarding conjunctiva the following are correct except:

- (A) Orbital conjunctiva lies between attached border of tarsal plates and fornices.
- (B) Superior fornix is about 10mm from limbus.
- (C) Scleral conjunctiva is loosely adherent to underlying tissues.
- (D) Caruncle is a modified mucus membrane.

8- Which of the following regarding lacrimal gland is correct?

- (A) Preganglionic parasympathetic fibres to lacrimal gland synapse in ciliary ganglion.
- (B) Preganglionic parasympathetic fibres to lacrimal gland "hitchhike" on branches of maxillary and ophthalmic nerves.
- (C) Lacrimal gland is a lobulated tubuloacinar structure.
- (D) Acinar cells of lacrimal gland have apically located nucleus.

9- Which of the following regarding extraocular muscles is correct?

- (A) From rectus muscles lateral rectus has longest tendon & medial rectus has shortest tendon.
- (B) Superior oblique arise from annulus of Zinn.
- (C) Inferior oblique arise from orbital rim.
- (D) Superior and inferior oblique muscles insert in front of globe equator.

10- Regarding extraocular muscles the following are wrong except:

- (A) Common tendinous ring spans around optic foramen and superior orbital fissure.
- (B) Common tendinous ring attached only to spina recti lateralis.

- (C) Superior oblique gives rise to narrow tendon about 1cm after its passage through trochlea.
- (D) Trochlea lies about 4mm behind orbital rim.

11- Regarding optic tract the following are correct except:

- (A) Optic tract form anterolateral boundary of interpeduncular space.
- (B) Posterior cerebral artery runs below and parallel to optic tract.
- (C) Posterior communicating artery crosses over optic tract from lateral to medial.
- (D) Middle part of optic tract crosses pyramidal tract and the lemnisci carrying sensory fibres.

12- Which of the following regarding lateral geniculate nucleus is correct?

- (A) Lateral geniculate nucleus serves as relay station in projection of visual fibres to optic radiation.
- (B) Optic radiations emerge from ventral aspect of lateral geniculate body.
- (C) Lateral geniculate body is enfolded by pulvinar of thalamus.
- (D) Fibres from contralateral optic nerve end in layers 2, 3 & 5 of lateral geniculate nucleus.

13- Which of the following regarding facial nerve is correct?

- (A) Motor nucleus of facial nerve supply muscles of first brachial arch.
- (B) Autonomic nucleus of facial nerve supply secretomotor fibres to lacrimal gland only.
- (C) Sensory nucleus of facial nerve receives taste sensation from anterior 1/3 of tongue.
- (D) Facial nerve has large motor & small sensory roots, which appear at lower border of pons.

14- Which of the following regarding ciliary ganglion is correct?

- (A) Ciliary ganglion lesions may cause tonic pupil.
- (B) Preganglionic parasympathetic fibres reach ciliary ganglion via branch of 3rd nerve to inferior rectus.
- (C) Sensory fibres reach ciliary ganglion via short ciliary nerves and relay to join nasociliary nerve.
- (D) All short ciliary nerves run below optic nerve.

15- Which of the following regarding vascular system is correct?

- (A) Anterior ciliary arteries are 8 in number, two for each rectus muscle.
- (B) Anterior conjunctival arteries arise from recurrent ciliary arteries.
- (C) Recurrent ciliary arteries arise solely from circulus irides major.
- (D) Recurrent ciliary arteries break up into choriocapillaris.