



CNS revision questions

The Eye	
Enumerate layers seen by light microscopic picture of cornea	<ol style="list-style-type: none"> 1. Epithelium 2. Bowman's membrane 3. Substantia propria 4. Descemet's membrane 5. Descemet's endothelium
Enumerate causes of corneal transparency	<ol style="list-style-type: none"> 1- The continuous evaporation of water from its surface. 2- The absence of blood vessels. 3- The cells, fibers and matrix have the same refractive indices. 4- The regular arrangement of the fibers and cells of the substantia propria. 5- The regular arrangement of the cells of the covering epithelium
Why sclera appear opaque?	<ol style="list-style-type: none"> 1- The refractive indices of all its elements is not equal. 2- The irregular arrangement of its C.T. fibers. 3- The presence of great amount of water.
Enuemrate the four layers of choroid	<p>1. Epichoroid or suprachoroid. It is the most outer layer. It consists of a loose C.T. layer rich in melanocytes, fibroblast, macrophages, nerve fibers and ganglion cells.</p> <p>2-The vessel layer: A highly vascular C.T. rich in elastic fibers and pigment cells.</p> <p>3. The choriocapillaries: It is formed of a single layer of fenestrated blood capillaries.</p> <p>. Bruch's membrane: formed of 5 layers by E.M. The central layer is composed of a network of elastic fibers which is lined on its two surfaces with</p>



	layers of collagen fibers its outer most and inner most collagen layers are covered by basal lamina .-plays an important role in limiting access of inappropriate macromolecules from the fenestrated capillaries to the retina.
Describe the structure of bruch`s membrane	See above
Define ciliary body	<p>It is the thickened anterior part of the choroid. It appears as a thickened ring at the inner aspect of the sclera.</p> <ul style="list-style-type: none">• In transverse section, it has a triangular shape, one of its faces is in contact with the vitreous body, one with the sclera and the third with the lens and posterior chamber of the eye. Its apex is continuous posteriorly with the choroid
Enumerate two functions of ciliary body	<ol style="list-style-type: none">1. Formation of the aqueous humor by the ciliary processes.2. The ciliary body are responsible for the processes of accommodation of the lens to near and far objects as the ciliary muscles are attached to the suspensory ligament of the lens.
Enumerate three functions of iris	<ol style="list-style-type: none">1. Changes the pupillary size.2. Shares in the formation of aqueous humor.3. Gives the color of the eye.
Describe the histological structure of iris stroma	<p>contains loose C.T. that differentiates into 2 layers:</p> <ol style="list-style-type: none">a- Anterior stromal layer more pigmented but less vascular.b- Posterior vessel layer is more vascular and contains the muscles of iris: <ul style="list-style-type: none">➤ The dilator pupillae muscles, which are myoepithelial cells, radially arranged lie



	<p>➤ The constrictor pupillae muscle is a circular band of smooth muscle fibers that is situated at the pupillary margin of the iris they constrict the pupil.</p>												
<p>Enumertae components of refractive media of the eye</p>	<ol style="list-style-type: none"> 1. Cornea 2. Aqueous humor 3. Lens 4. Vitreous body 												
<p>Compare between rods and cons</p>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 35%;">Rods</th> <th style="width: 35%;">Cones</th> </tr> </thead> <tbody> <tr> <td>(A) Number:</td> <td>120 millions</td> <td>6-7 millions</td> </tr> <tr> <td>(B) Function:</td> <td>- Adapted to function in dim light</td> <td>- Adapted to function in bright light.</td> </tr> <tr> <td>(C) Site:</td> <td>Not present at the fovea centralis</td> <td>The only receptors found in the fovea centralis.</td> </tr> </tbody> </table>		Rods	Cones	(A) Number:	120 millions	6-7 millions	(B) Function:	- Adapted to function in dim light	- Adapted to function in bright light.	(C) Site:	Not present at the fovea centralis	The only receptors found in the fovea centralis.
	Rods	Cones											
(A) Number:	120 millions	6-7 millions											
(B) Function:	- Adapted to function in dim light	- Adapted to function in bright light.											
(C) Site:	Not present at the fovea centralis	The only receptors found in the fovea centralis.											
<p>Enumertae layes of retina</p>	<p>A- The pigmented epithelium: Consists of high cubical cells with rounded nuclei. The cytoplasm contains melanin granules</p> <p>B- The neural part of the retina: The retinal layers are 9 layers:</p> <ol style="list-style-type: none"> 1- The rods and cones layer 2- The outer limiting membrane: (dark line) 3- The outer nuclear layer: Contains the cell bodies of rod and cone cells (the 1st order neurons). 4- Outer plexiform (reticular) layer: 5- The inner nuclear layer: It contains the cell bodies of: <ol style="list-style-type: none"> a. The bipolar cells (the 2nd order neurons) b. Horizontal cells c. Amacrine cells d. Muller Cells 												

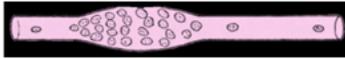
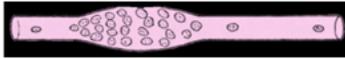
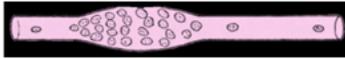


	<p>6- The inner plexiform (reticular layer)</p> <p>7- The ganglion cell layer (the 3rd order neuron)</p> <p>8- The nerve fiber layer</p> <p>9- The inner limiting membrane: (dark line)</p>
Describe the histological structure of conjunctiva	<p>1- Epithelium:</p> <p>a- At the fornix: stratified columnar with few goblet cells.</p> <p>b- At the bulbar part stratified squamous.</p> <p>c- At the palpebral part: stratified squamous</p> <p>2- Corium: loose connective tissue</p>
enumerate types of glands in eye lids	<p>1- Meibomian glands</p> <p>2- Gland of Moll</p> <p>3- Gland of Zeis</p>
The ear	
Describe the structure of auricle and mention its function	<p><u>Structure:</u></p> <ul style="list-style-type: none"> • Yellow elastic fibro-cartilage • Thin skin on both sides <p><u>Function:</u></p> <ul style="list-style-type: none"> • Collects the sound waves and directs them towards the external auditory meatus.
Describe the wall of external auditory meatus	<p>Its wall is formed of:--</p> <p>Outer 1/3 cartilaginous (yellow elastic) inner 2/3 bony (spongy)</p> <p>▪ It is lined by thin skin which contains:----</p> <p>a- Stiff hairs (outer part)</p> <p>b- Sebaceous gland</p> <p>c- Ceruminous gland</p>
Enumerate contents of middle ear	<p>3 ossicles- 2 muscles- 2 windows- Chorda tympani nerve</p>



<p>Mention the contents of the vestibule of inner ear and its function</p>	<p>It contains 2 membranous structures: utricle and saccule</p> <p>Each of the utricle and the saccule contains a neuro-epithelial structure: macula utriculi and macula sacculi</p> <p>Function: maintain the body equilibrium in relation to gravity</p>
<p>Enumerate boundaries of cochlear duct.</p>	<p>a- Vestibular membrane b- Basilar membrane c- Stria vascularis</p>
<p>Enumerate hair cells of organ of corti</p>	<p>1. The inner hair cells: arranged in one row lying on the inner phalangeal cells.</p> <p>2The outer hair cells: arranged in 3-5 rows lying on the outer phalangeal cells.</p> <p>free surface of each hair cell is provided with stereocilia (non-motile cilia).</p> <p>basal part is surrounded by the ends of bipolar nerve cells of spiral ganglia.</p>
<p>Enumerate 4 supporting cells of organ of corti</p>	<ol style="list-style-type: none"> 1. The inner and outer pillar cells: 2. The inner and outer phalangeal cells: 3. Cells of Claudius 4. The Hensen's cells 5. The border cells
<p>Enumerate types of mechanoreceptors</p>	<p>Epidermal: Merkel's complex.</p> <p>Dermal:</p> <p>a- Papillary Layer → Meissner' s corpuscles.</p> <p>b- Reticular Layer → Pacinian, Ruffini corpuscles - Krause end bulbs</p>
<p>Describe the histological structure of</p>	<p>Capsule: Thin separated from the corpuscle by a subcapsular space</p> <p>Axial core:</p>



<p>Pacinian corpuscle. اى جزء فيها يجى سؤال</p>	<ul style="list-style-type: none"> • 20 – 80 concentric layers of flat modified Schwann cells joined together by desmosomes and separated by intercellular spaces containing collagen fibers and tissue fluid. • L.S: onion like appearance. <p>Nerve fiber: Myelinated, penetrates the corpuscle at one pole to become non myelinated, then run to the opposite pole to terminate by an expanded terminal</p>														
<p>Compare between nuclear bag fibers and chain fibers</p>	<table border="1"> <thead> <tr> <th></th> <th data-bbox="683 615 1068 741"> Nuclear bag fibers  </th> <th data-bbox="1076 615 1523 741"> Nuclear chain fibers  </th> </tr> </thead> <tbody> <tr> <td data-bbox="407 751 678 789">Size:</td> <td data-bbox="683 751 1068 789">Thicker × longer</td> <td data-bbox="1076 751 1523 789">Thinner × shorter</td> </tr> <tr> <td data-bbox="407 800 678 837">No:</td> <td data-bbox="683 800 1068 837">Fewer</td> <td data-bbox="1076 800 1523 837">Numerous</td> </tr> <tr> <td data-bbox="407 848 678 963">Central Part:</td> <td data-bbox="683 848 1068 963"> 1) Expanded 2) Contains a bag of nuclei. </td> <td data-bbox="1076 848 1523 963"> 1) Not expanded 2) Contains a chain of nuclei </td> </tr> </tbody> </table>				Nuclear bag fibers 	Nuclear chain fibers 	Size:	Thicker × longer	Thinner × shorter	No:	Fewer	Numerous	Central Part:	1) Expanded 2) Contains a bag of nuclei.	1) Not expanded 2) Contains a chain of nuclei
	Nuclear bag fibers 	Nuclear chain fibers 													
Size:	Thicker × longer	Thinner × shorter													
No:	Fewer	Numerous													
Central Part:	1) Expanded 2) Contains a bag of nuclei.	1) Not expanded 2) Contains a chain of nuclei													