

**FEDERAL STATE BUDGET EDUCATIONAL  
HIGHER EDUCATION INSTITUTION  
"ROSTOV STATE MEDICAL UNIVERSITY"  
MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION**

**FACULTY OF TREATMENT AND PREVENTION**

Assessment materials for the discipline

"Ophthalmology"

(appendix to the work program of the discipline)

Specialty 05/31/01 General Medicine

**1. List of competencies formed by the discipline (in full or partially)\***

Code and name general professional competence	Indicator(s) of achieving general professional competence
OPK 4 - Able to use medical devices provided for in the procedure for providing medical care, as well as conduct examinations patient for the purpose of diagnosis	OPK 4 - Able to use medical devices provided for in the procedure for providing medical care, as well as conduct examinations patient for the purpose of diagnosis
GPC 7 - Able to prescribe treatment and monitor its effectiveness and safety	GPC 7 - Able to prescribe treatment and monitor its effectiveness and safety
PC 3 - Prescribing treatment and monitoring its effectiveness and safety	PC 3 - Prescribing treatment and monitoring its effectiveness and safety

**2. Types of assessment materials in accordance with the competencies being developed**

Name competencies	Types of assessment materials	number of tasks <b>for 1 competency</b>
OPK-4	Closed tasks	25 with sample answers
	Open type tasks: Situational tasks Interview Questions	75 with sample answers
OPK-7	Closed tasks	25 with sample answers
	Open type tasks: Situational tasks Interview Questions	75 with sample answers
PK-3	Closed tasks	25 with sample answers
	Open type tasks: Situational tasks Interview Questions	75 with sample answers

## OPK -4.

Closed type tasks (25 tasks)

1. Visual acuity is called

- 1) space visible to the eye with a fixed gaze
- 2) the ability of the eye to perceive colors based on sensitivity to different radiation ranges of the visible spectrum
- 3) the ability of the eye to distinguish two points separately with a minimum distance between them
- 4) the ability of the eye to perceive light and distinguish the degree of its brightness

*Correct answer:*3) the ability of the eye to distinguish two points separately with a minimum distance between them

2. The field of view is called

- 1) space visible to the eye with a fixed gaze
- 2) the ability of the eye to perceive colors based on sensitivity to different radiation ranges of the visible spectrum
- 3) the ability of the eye to distinguish two points separately with a minimum distance between them
- 4) the ability of the eye to perceive light and distinguish the degree of its brightness

*Correct answer:*1) space visible to the eye with a fixed gaze

3. When studying visual acuity, the patient is located at a distance from the table

- 1) 1 m
- 2) 2 m
- 3) 3 m
- 4) 4 m
- 5) 5 m

*Correct answer:*5) 5 m

**4. In the Snellen formula, d means**

- 1) the distance from which the subject recognizes the optotype
- 2) the distance from which the subject must recognize the optotype
- 3) the distance from which the study is carried out

*Correct answer:*1) the distance from which the subject recognizes the optotype

5. Chromatic colors are

Yes	No	red
Yes	No	grey
Yes	No	blue
Yes	No	white
Yes	No	green

*Correct answer:*

<b>Yes</b>	No	red
Yes	<b>No</b>	grey
<b>Yes</b>	No	blue

Yes	<b>No</b>	white
<b>Yes</b>	No	green

## 6. Perimetry

- 1) a method for determining on a plane the peripheral boundaries of the visual field and defects in it
- 2) a method for determining the central parts of the visual field and defects in it on a hemisphere
- 3) a method for determining on a plane the central parts of the visual field and defects in it
- 4) a method for determining the peripheral boundaries of the visual field and defects in it on a hemisphere

*Correct answer:*4) a method for determining the peripheral boundaries of the visual field and defects in it on a hemisphere

7. The following types of asthenopi are distinguished: And:

Yes	No	accommodative
Yes	No	dysbinocular
Yes	No	muscular
Yes	No	symptomatic
Yes	No	neurogenic

*Correct answer:*

<b>Yes</b>	No	accommodative
Yes	<b>No</b>	dysbinocular
<b>Yes</b>	No	muscular
<b>Yes</b>	No	symptomatic
<b>Yes</b>	No	neurogenic

## 8. Types of clinical refraction

- 1) disbinocular, obscuration
- 2) cornea, lens
- 3) vitreal, retinal
- 4) static, dynamic

*Correct answer:*4) static, dynamic

9. Difference between eyelid emphysema and inflammatory edema

- 1) presence of skin hyperemia
- 2) pain on palpation
- 3) crepitus
- 4) all of the above

*Correct answer:*3) crepitus

10. Simple blepharitis is characterized by

Yes	No	moderate redness of the eyelid margins
Yes	No	significant redness of the edges of the eyelids
Yes	No	moderate itching
Yes	No	the presence of grayish-white scales

*Correct answer:*

<b>Yes</b>	No	moderate redness of the eyelid margins
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Yes	<b>No</b>	significant redness of the edges of the eyelids
<b>Yes</b>	No	moderate itching
Yes	<b>No</b>	the presence of grayish-white scales

11. Ulcerative blepharitis is characterized by

Yes	No	severe itching
Yes	No	the presence of grayish-white scales
Yes	No	yellow purulent crusts at the roots of the eyelashes
Yes	No	deformation of the edges of the eyelids

*Correct answer:*

<b>Yes</b>	No	severe itching
Yes	<b>No</b>	the presence of grayish-white scales
<b>Yes</b>	No	yellow purulent crusts at the roots of the eyelashes
<b>Yes</b>	No	deformation of the edges of the eyelids

12. Difference between deep diffuse tuberculous keratitis and deep syphilitic keratitis

Yes	No	infiltration occurs at the limbus
Yes	No	infiltration occurs in any part of the cornea
Yes	No	the infiltrate consists of individual small streaks
Yes	No	the infiltrate consists of large grayish-yellow foci

*Correct answer:*

Yes	<b>No</b>	infiltration occurs at the limbus
<b>Yes</b>	No	infiltration occurs in any part of the cornea
Yes	<b>No</b>	the infiltrate consists of individual small streaks
<b>Yes</b>	No	the infiltrate consists of large grayish-yellow foci

13. A common feature of all acquired cataracts is

Yes	No	stationary nature of the process
Yes	No	progressive nature of the process
Yes	No	complicated by amblyopia
Yes	No	visual functions are not lost

*Correct answer:*

Yes	<b>No</b>	stationary nature of the process
<b>Yes</b>	No	progressive nature of the process
Yes	No	complicated by amblyopia
<b>Yes</b>	No	visual functions are not lost

14. The functional block of Schlemm's canal is determined by

Yes	No	displacement of the trabecula into the anterior chamber
Yes	No	displacement of the trabecula towards the outer wall of Schlemm's canal
Yes	No	increased trabecular permeability
Yes	No	decreased trabecular permeability

*Correct answer:*

Yes	<b>No</b>	displacement of the trabecula into the anterior chamber
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<b>Yes</b>	No	displacement of the trabecula towards the outer wall of Schlemm's canal
Yes	<b>No</b>	increased trabecular permeability
<b>Yes</b>	No	decreased trabecular permeability

15. Diagnosis of open-angle glaucoma is based on the detection of the following main symptoms

Yes	No	change in iris color
Yes	No	typical glaucomatous changes in the visual field
Yes	No	deterioration of the outflow of intraocular fluid
Yes	No	presence of precipitates on the corneal endothelium
Yes	No	cobra symptom
Yes	No	pericorneal injection

*Correct answer:*

Yes	<b>No</b>	change in iris color
<b>Yes</b>	No	typical glaucomatous changes in the visual field
<b>Yes</b>	No	deterioration of the outflow of intraocular fluid
Yes	<b>No</b>	presence of precipitates on the corneal endothelium
<b>Yes</b>	No	cobra symptom
Yes	<b>No</b>	pericorneal injection

16. Diagnostic methods used for retinal diseases ki

Yes	No	fluorescein angiography
Yes	No	electroretinography
Yes	No	ultrasound biomicroscopy
Yes	No	all of the above

*Correct answer:*

<b>Yes</b>	No	fluorescein angiography
<b>Yes</b>	No	electroretinography
Yes	No	ultrasound biomicroscopy
Yes	No	all of the above

17. Clinical picture of optic neuritis (papillitis)

Yes	No	pain when moving the eyeball
Yes	No	papilledema
Yes	No	optic disc hyperemia
Yes	No	narrowing of the visual field

*Correct answer:*

Yes	<b>No</b>	pain when moving the eyeball
<b>Yes</b>	No	papilledema
<b>Yes</b>	No	optic disc hyperemia
<b>Yes</b>	No	narrowing of the visual field

18. Difference between optic disc congestion and neuritis

Yes	No	central vision decreases sharply
Yes	No	field of view remains intact for a long time
Yes	No	Various types of scotomas appear
Yes	No	frequent headaches

*Correct answer:*

Yes	<b>No</b>	central vision decreases sharply
<b>Yes</b>	No	field of view remains intact for a long time
Yes	<b>No</b>	Various types of scotomas appear
<b>Yes</b>	No	frequent headaches

19. The third stage of central serous chorioretinitis is characterized by

Yes	No	macular edema
Yes	No	white-gray dotted precipitates in the macular zone
Yes	No	dyspigmentation
Yes	No	decreased central vision

*Correct answer:*

Yes	<b>No</b>	macular edema
Yes	<b>No</b>	white-gray dotted precipitates in the macular zone
<b>Yes</b>	No	dyspigmentation
<b>Yes</b>	No	decreased central vision

20. The initial stage of primary glaucoma is characterized by

- 1) the appearance of small paracentral scotomas
- 2) narrowing of the visual field by more than 10° on the nasal side
- 3) narrowing the border of the visual field to 15° degrees or less from the point of fixation
- 4) loss of objective vision

*Correct answer:*1) the appearance of small paracentral scotomas

21. The advanced stage of primary glaucoma is characterized by

- 1) the appearance of small paracentral scotomas
- 2) narrowing of the visual field by more than 10° on the nasal side
- 3) narrowing the border of the visual field to 15° degrees or less from the point of fixation
- 4) loss of objective vision

*Correct answer:*2) narrowing of the visual field by more than 10° on the nasal side

22. The advanced stage of primary glaucoma is characterized by

- 1) the appearance of small paracentral scotomas
- 2) narrowing of the visual field by more than 10° on the nasal side
- 3) narrowing the border of the visual field to 15° degrees or less from the point of fixation
- 4) loss of objective vision

*Correct answer:*3) narrowing the border of the visual field to 15° degrees or less from the point of fixation

23. The end stage of primary glaucoma is characterized by

- 1) the appearance of small paracentral scotomas
- 2) narrowing of the visual field by more than 10° on the nasal side
- 3) narrowing the border of the visual field to 15° degrees or less from the point of fixation
- 4) loss of objective vision

*Correct answer:*4) loss of objective vision

24. Swelling of the lens at the stage of immature cortical cataract leads to the development of secondary phacogenic glaucoma

- 1) phacotopic
- 2) phacomorphic
- 3) phacolytic

*Correct answer:*2) phacomorphic

25. Initial cortical cataract is characterized by the presence of opacity

- 1) in the optical zone of the lens cortex
- 2) in the equatorial zone of the lens cortex
- 3) the entire cortex
- 4) the whole core

*Correct answer:*2) in the equatorial zone of the lens cortex

Open type tasks: **TOTAL75 tasks\***

1. Myopia is corrected by \_\_\_\_ lens that provides maximum visual acuity

*Correct answer:* least negative

2. Hypermetropia is corrected with a \_\_\_\_ lens that provides maximum visual acuity *Correct answer:* greatest positive

3. Emmetropia is corrected with a \_\_\_\_ lens that provides maximum visual acuity

*Correct answer:* no correction required

4. Astigmatism is a combination of \_\_\_\_\_ in one eye *Correct*

*answer:* different degrees of refraction or its different types

5. The sclera is \_\_\_\_ of the fibrous membrane

*Correct answer:* 5/6

6. Hypertensive angiopathy corresponds to \_\_\_\_ stage of hypertension *Correct*

*answer:* I-II

7. Hypertensive angiosclerosis corresponds to the \_\_\_\_ stage of hypertension

*Correct answer:* II A, II B

8. Hypertensive retinopathy corresponds to \_\_\_\_ stage of hypertension *Correct*

*answer:* III A, III B

9. The copper wire symptom is due to \_\_\_\_

*Correct answer:* hypertrophy of the vascular wall and deposition on the walls of blood vessels lipids

10. The silver wire symptom is caused by \_\_\_\_ *Correct*

*answer:* obliteration of blood vessels

11. The first degree of the Salus-Hun symptom is characterized by \_\_\_\_



*Correct answer:*at the intersection site, the vein is thinned and conically narrowed on both sides of the artery

12. The second degree of the Salus-Hun symptom is characterized by \_\_\_\_

*Correct answer:*the vein in front of the chiasm bends, forming an arch and is sharply thinned passing under the artery

13. The third degree of the Salus-Hun symptom is characterized by \_\_\_\_

*Correct answer:*the vein is invisible for some distance before and after the intersection

14. *Task.*After being injected with a needle into the center of the cornea, the patient lost his vision. What structures were injured? Why did I lose my vision?

*Reference.*Penetrating injury to the cornea may result in injury to the lens. Developing traumatic cataracts cause decreased vision.

15. *Task.*Under focal illumination, a black spot is detected on the iris at the limbus; in transmitted light, a pink fundus reflex is visible in the area of the spot and pupil. What does this indicate?

*Reference.*There is a hole in the iris near the limbus - a basal coloboma.

16. *Task.*After hypothermia (in a draft), the patient developed lagophthalmos (non-closure of the palpebral fissure). Vision was not affected. What is the reason for this phenomenon? *Reference.*The patient has paresis of the facial nerve, which innervates the orbicularis oculi muscle, responsible for closing the palpebral fissure.

17. *Task.*The patient complains of blindness in the left eye. When illuminated from the side, the pupil area is gray; in transmitted light, there is no pink fundus reflex. What explains the lack of vision?

*Reference.*The cause of blindness is clouding of the lens.

18. *Task.*The patient has a penetrating wound of the sclera. Will the depth of the front camera change?

*Reference.*When the sclera is injured, the anterior chamber deepens, since the sclera the vitreous body falls out.

19. *Task.*Transmitted light method against the background of a pink fundus reflex A black cloudiness is detected, moving in accordance with the movement of the eyeball. Where is the turbidity located? What methods will allow us to clarify its localization?

*Reference.*The clouding is localized either in the cornea or in the anterior regions lens The method of lateral focal illumination and biomicroscopy will help to clarify the localization.

20. *Task.* During a car accident, the driver received a penetrating injury to the cornea. What intraocular structures could be damaged? Will the depth of the anterior chamber change?

*Reference.*With a penetrating injury to the cornea, injury to the iris and lens is possible. The anterior chamber will be shallow as intraocular fluid leaks.

21. *Task.*An external examination revealed incomplete ptosis of the upper eyelid on the right side of the patient. What is this pathology called? What explains it? What additional methods are needed to clarify the diagnosis?

*Reference.* The patient has ptosis, which may be associated with damage to the oculomotor nerve or Horner's syndrome (sympathetic superior cervical ganglion). It is necessary to carry out lateral illumination, determine the size of the pupil, the position of the eyeball and the range of its movements.

22. *Task.* After falling from a swing, the child developed ptosis, exophthalmos, immobility of the eyeball, and dilated pupil of the left eye. What changes could occur in the orbit? Reasons for the changes?

*Reference.* The child has superior orbital fissure syndrome associated with a fracture base of the skull or hematoma in the area of the superior orbital fissure.

23. *Task.* Biomicroscopy - what is this method? Changes in which parts of the organ of vision can be detected by this method?

*Reference.* Biomicroscopy is an examination of the patient with a slit lamp. Reveals pathology of the eyelids, conjunctiva, sclera, cornea, anterior chamber, iris, pupil area and lens.

24. *Task.* How can we explain that choroiditis (inflammation of the choroid itself) can occur in isolation, while inflammation of the iris and ciliary body usually occur together?

*Reference.* Explained by the peculiarity of the blood supply: the choroid is supplied with blood from the posterior short ciliary arteries, and the iris and ciliary body have a common blood supply - from the posterior long ciliary arteries and the anterior ciliary arteries (a continuation of the muscular arteries).

25. *Task.* What methods are used to study the transparency of the lens?

*Reference.* The transparency of the lens is examined using the lateral focal method, lighting, transmitted light method, biomicroscopy.

26. *Task.* When studying central visual acuity, a patient correctly names the letters in the first line of the Golovin-Sivtsev table from a distance of 2.5 m. What is the visual acuity of this patient?

*Reference.* Visual acuity is determined using the Snellen formula and is equal to 0.05.

27. *Task.* When examining the patient using a campimeter, in the field of view of the right eye on the temporal side, 15° from the point of fixation, an absolute scotoma was revealed with dimensions of 12° vertically and 10° horizontally. How should the result be assessed?

*Reference.* The examination revealed a physiological scotoma, corresponding projections of the optic nerve head. The boundaries of the physiological scotoma are expanded. Normal boundaries: vertically - 8-9° and horizontally - 5-8°.

28. *Task.* When studying the acuity of central vision, the patient correctly names all the letters of the 10th line of the table from a distance of 1 m. Determine visual acuity. What formula are you using?

*Reference.* Formula:  $\text{visus} = d/D$ . In this case:  $1\text{m}/5\text{m} = 0.2$ .

29. *Task.* The patient has chronic tonsillitis. After its exacerbation against the background of acute respiratory infections, pain appeared in the eye, and the eye turned red. Objectively: moderately severe symptoms of irritation; there is a grayish cloudiness in the cornea in the shape of a tree branch. The sensitivity of the cornea is reduced. Diagnosis?

*Reference.* Diagnosis: herpetic dendritic keratitis.

thirty. *Task.* The patient worked as a harvesting machine operator. Something got into the eye, after which pain in the eye and redness of the eye appeared. Upon examination, clouding of the cornea and a yellow strip of pus at the bottom of the anterior chamber were detected. Diagnosis?

*Reference.* Diagnosis: creeping ulcer of the cornea

31. *Task.* A young mother complained of photophobia, lacrimation, blepharospasm, foreign body sensation, and redness of the left eye. Three hours ago, while feeding the child, the child hit his mother in the eye with his hand. Diagnosis?

*Reference.* Diagnosis: corneal erosion, corneal syndrome.

32. *Task.* The patient, while walking 3 days ago, came across a spruce branch and did not seek medical help. At the time of examination, there were complaints of photophobia, lacrimation, blepharospasm, foreign body sensation, redness of the left eye, pain, decreased vision. Objectively: swelling of the upper eyelid, mixed injection, on the cornea at 6 o'clock, 4 mm from the limbus, a whitish infiltrate measuring 2 mm in diameter, around there is swelling, involving the optical zone. Diagnosis?

*Reference.* Diagnosis: traumatic exogenous keratitis.

33. *Task.* After an acute respiratory illness, the patient developed pain in the eye and the eye became red. There was a history of purulent discharge from the right nostril. Was treated by an ENT specialist. The process repeated itself. Objectively: OD - pericorneal injection, the iris is discolored, the pupil is narrow, painful on palpation, IOP is reduced. Make a diagnosis. Make a differential diagnosis.

*Reference.* Diagnosis: acute iridocyclitis due to focal infections (sinusogenic). The diagnosis is confirmed by pain in the eye, pericorneal injection, and changes in the color of the iris. A history of inflammation in the paranasal sinus. Additional examination is necessary: x-ray of the sinuses, consultation with a pediatrician and dentist.

34. *Task.* The patient suffered inflammation of the eye without severe pain. There was practically no treatment. During a medical examination at the plant, a decrease in visual acuity in the right eye was revealed. Objectively: upon examination, slight irritation of the eye appears, the anterior chamber is small, the pupil is narrow and irregular in shape. The eye is denser than normal.

Make a diagnosis. Carry out differential diagnosis.

*Reference.* Diagnosis: secondary uveal glaucoma. The diagnosis is confirmed by anamnesis, increased intraocular pressure, shredding of the anterior chamber, deformation of the pupil. Differentiate from secondary neoplastic glaucoma. Required: echodiagnosis, diaphanoscopy.

35. *Task.* During a medical examination, a 2nd grade student was diagnosed with decreased vision in both eyes. Objectively: clouding of the cornea along the horizontal diameter, deformation of the pupil, clouding of the posterior parts of the lens. History of rheumatism. Diagnosis?

*Reference.* Diagnosis: uveitis due to Still's disease.

36. *Task.* A 5-year-old child periodically, more often in the fall, has inflammation in both eyes. He was treated in a hospital. Good effect when using corticosteroid hormones. Currently, the eyes are calm; isolated pigment deposits on the lens capsule are visible. Presumptive diagnosis? Additional examinations?

*Reference.* Diagnosis: rheumatic uveitis. The diagnosis is confirmed by anamnesis (good effect of hormone therapy), the presence of pigment on the lens capsule. Biomicroscopy is necessary to exclude precipitates and posterior synechiae, and examination of the fundus.

Differentiate from adenoviral conjunctivitis, in which there is no effect of corticosteroids.

37. *Task.* During a medical examination, a factory worker was diagnosed with divergent concomitant strabismus. History of viral infection. Objectively: the right eyeball is deviated outward by 20°, the anterior segment of the eye is not changed, the refraction is emmetropic. On ophthalmoscopy, there was a large atrophic focus in the macular area, bordered by lumps of pigment. The edges of the lesion are fiston-shaped. Presumptive diagnosis?  
*Reference.* Diagnosis: late phase of central chorioretinitis, apparently viral etiology.

38. *Task.* A 30-year-old man complained of distortion of objects in front of his right eye and decreased vision. Objectively: visual acuity 0.5 with correction by a positive spherical lens (+) 1.5 D is 0.9. Refraction is emmetropic. When examining the fundus of the eye, there is fungoid edema in the macular area and no hemorrhages. Presumptive diagnosis?  
*Reference.* Diagnosis: central serous chorioretinitis, unknown etiology.

39. *Task.* A 50-year-old woman complained of intermittent blurring in front of her right eye. Objectively: the eye is calm, IOP is 32 mm. Hg Art., precipitates on the endothelium. Presumptive diagnosis?  
*Reference.* Diagnosis: uveopathy, glaucomocyclic crisis, secondary glaucoma.

40. *Task.* A patient complains of decreased vision after suffering from the flu. Objectively: the anterior segment of the eye is without any features, the media are transparent. The optic disc is enlarged in size, the boundaries are blurred. Diagnosis? Differential diagnosis?  
*Reference.* Diagnosis: papillitis (neuritis). Differentiate with congestive optic disc nerve. To clarify the diagnosis, it is necessary to determine visual acuity, an x-ray of the skull and paranasal sinuses, and an examination by a rhinologist and neurologist. A patient with papillitis will be treated by an ophthalmologist.

41. Subjective signs of dry eye syndrome. *Correct answer:*

1. Painful reaction to instillation of indifferent eye drops into the conjunctival cavity.
2. Poor tolerance to wind, air conditioning, smoke.
3. Feeling of "dryness" in the eye.
4. Sensation of a foreign body in the conjunctival cavity.
5. Sensation of burning and stinging in the eye.
6. Deterioration of visual performance in the evening.
7. Fluctuations in visual acuity during the working day.
8. Photophobia.
9. Watery eyes.

42. Methods for diagnosing dry eye syndrome  
*Correct answer:*

1. Collection of complaints and medical history.
2. Biomicroscopy of the free edge of the eyelids, cornea and conjunctiva.
3. Use of diagnostic dyes (sodium fluorescein, Belgan pink, lissamine green).
4. Determination of the stability of the precorneal tear film (Norn test).

5. Determination of the amount of total tear production (Schirmer test).

43. Clinical picture of acute nonspecific catarrhal conjunctivitis *Correct answer:*

The disease occurs sharp, accompanied by expressed subjective sensations such as itching, burning, foreign body sensation. Both eyes are usually affected. An objective examination reveals a pronounced conjunctival injection, swelling of the transitional fold of the conjunctiva, and abundant yellowish mucopurulent discharge from the conjunctival cavity.

44. Clinical picture of pneumococcal conjunctivitis

*Correct answer:*

The disease occurs acutely and is accompanied by pronounced subjective sensations. Both eyes are affected. It is characterized by pronounced conjunctival injection, swelling of the transitional fold and the appearance of delicate whitish-gray films on the conjunctiva of the eyelids and transitional folds, which are easily removed with a cotton swab

45. Etiology of acute epidemic conjunctivitis *Correct answer:*

The causative agent is Haemophilus conjunctivitis (Koch-Wicks bacterium). The disease is transmitted by contact. The carrier is flies. Incubation period 1-2 days

46. Describe the stages of trachoma *Correct answer:*

I stage – progressive inflammation.

- pronounced hyperemia of the conjunctiva, which acquires a cherry-purple hue;
- infiltration of the mucous membrane, hypertrophy of the papillae and proliferation of follicles;
- the process begins with the upper transitional fold, then spreads to the conjunctiva of the upper eyelid.

II stage – developed process (active trachoma).

- large follicles appear, increasing infiltration and papillary hyperplasia of the conjunctiva of the upper eyelid;
- individual follicles undergo necrosis with the formation of delicate scars;
- appearance of trachomatous pannus.

Stage III – cicatricial trachoma.

- inflammation phenomena subside, single follicles may remain, scarring processes predominate;
- characteristic complications appear - trichiasis, madarosis, symblepharon, entropion, xerosis. This stage can last for years, accompanied by periodic exacerbations. Stage IV – clinically cured trachoma.
- the conjunctiva is whitish in color, covered with multiple scars.

47. What is corneal pannus

*Correct answer:*

This is opacification of the cornea in the upper part with vascular ingrowth, which is divided into: thin - minimal vascularization and infiltration of the cornea, vascular - moderate vascular ingrowth and infiltration, fleshy - abundant vascularization and infiltration

48. Reasons for the development of infectious-allergic iridocyclitis

*Correct answer:*

Infectious-allergic iridocyclitis arise on background chronic sensitization of the body to internal bacterial infection or bacterial toxins. More often, infectious-allergic iridocyclitis develops in patients with metabolic disorders due to obesity, diabetes, renal and liver failure, vegetative-vascular dystonia

49. Degrees of cellular reaction of chamber moisture in iridocyclitis

*Correct answer:*

The degree of cellular reaction varies from 1+ to 4+ and is determined by the preservation of the visibility of the iris structures:

- with the first degree of cellular reaction, the iris is clearly visible,
- with the second degree of cellular reaction, the iris is visible behind the flair, but the structures of the iris are still distinguishable,
- with the third degree of cellular reaction, the structures of the iris can be differentiated with difficulty,
- with the fourth degree of cellular reaction, the iris is not visible.

50. Forecast of the course of herpetic iridocyclitis

*Correct answer:*

Iridocyclitis of herpetic nature is characterized by a large number of large precipitates merging with each other, swelling of the iris and cornea, the appearance of hyphema, and decreased sensitivity of the cornea. The prognosis worsens significantly when the inflammatory process spreads to the cornea - keratoiridocyclitis (uveokeratitis) occurs. The duration of such an inflammatory process, which involves the entire anterior part of the eye, is no longer limited to several weeks, sometimes it drags on for many months.

51. List the common symptoms of red eye with pain syndrome

*Correct answer:*

eye block injection (pericorneal, conjunctival); impaired transparency of the cornea, which may be caused by precipitates, edema, infiltration; pain syndrome, heterogeneous in the nature of pain and its irradiation; varied levels of intraocular pressure

52. Structure and functions of the anterior epithelium of the

cornea *Correct answer:*

The anterior epithelium is multilayered (5-7 layers), non-keratinizing. Histologically, a layer of flat cells, a layer of pterygoid cells and a deep layer of basal cells are distinguished. The epithelium has the ability to quickly regenerate, so its damage does not lead to scar formation

53. Structure and functions of Bowman's membrane of the cornea

*Correct answer:*

The outer limiting (Bowman's) membrane is an acellular surface layer of stroma approximately 10-12 microns thick. It is a layer of collagen fibrils and takes part in the re-epithelialization of the cornea. However, Bowman's membrane does not have regenerative properties, so when it is damaged, scars form

54. Structure and functions of the corneal stroma

*Correct answer:*

The stroma (comprising up to 90% of the thickness of the cornea) is a layer of regularly oriented collagen fibers. Almost 80% of the stroma consists of water. The space between

Collagen fibers are filled with ground substance, chondroitin sulfates, keratensulfates, and keratocytes.

55. Structure and functions of the endothelium of the cornea *Correct answer:*

The endothelium (posterior epithelium) is a monolayer of hexagonal cells 4-6  $\mu\text{m}$  thick. This structure does not have the ability to regenerate, but is of great importance for maintaining the hemostatic and functional state of the cornea. Normal endothelial density is considered to be 1400-2500 cells/mm. With age, the number of endothelial cells decreases, but due to the stretching of the remaining cells, the cornea remains transparent. The critical endothelial density is 1100 cells/mm. When the number of cells decreases, the structure of the endothelial monolayer is disrupted, and the transparency of the cornea is significantly reduced

56. Clinical picture of a creeping corneal ulcer *Correct answer:*

A triad of symptoms is noted: the specific appearance of the ulcer, hypopyon, iridocyclitis. The disease develops acutely. At the site of infection, a rounded infiltrate of grayish-yellow color is formed, which subsequently ulcerates. Patients complain of severe pain in the eye, lacrimation and blepharospasm. The conjunctiva of the eyeball is sharply hyperemic and swollen. A purulent ulcer is formed with a undermined edge, raised above the cornea, surrounded by a strip of purulent infiltrate. Swelling of the tissue is noted around the ulcer. Exudate and hypopyon are visualized at the bottom of the anterior chamber

57. Diagnosis of acanthamoeba keratitis *Correct answer:*

Anamnesis is of great importance for diagnosis. A microbiological examination of contact lenses is performed, and the material obtained from the cornea is inoculated onto non-nutritive agar with an E. coli culture.

58. Clinical picture of epithelial herpetic keratitis *Correct answer:*

Small bubbles form on the surface of the cornea, which quickly burst and leave behind erosions. The process is accompanied by pronounced corneal syndrome. Purulent infiltrates appear at the site of erosion. The process ends with the formation of cloud-like opacities.

59. Clinical picture of dendritic herpetic keratitis *Correct answer:*

The onset of the process is acute, reminiscent of epithelial keratitis. Then the bubbles merge into a single pattern, reminiscent of a tree branch. The onset of the disease is accompanied by pronounced corneal syndrome. Vascularization appears in the epithelialization phase.

60. Clinical picture of metaherpetic herpetic keratitis *Correct answer:*

The disease has an acute onset, resembling dendritic keratitis, which quickly spreads into the deep layers of the cornea. In the phase of disintegration of the infiltrate, a deep ulcer with irregular edges is formed. The duration of the disease is 2-3 months.

61. Clinical picture of discoid herpetic keratitis *Correct answer:*

Localized in the central part of the cornea in the deep layers. The infiltration is white-gray in color; in the infiltrated area, the cornea thickens 2-3 times. There is no corneal syndrome, since the epithelial layer is not damaged. The disease is accompanied by iridocyclitis

62. Stages of syphilitic keratitis

*Correct answer:*

1. Infiltration stage - duration 3-4 weeks.
2. Vascularization stage - duration 6-8 weeks.
3. Resorption stage - duration 1-2 years.

63. List the risk factors that contribute to the progression of glaucoma

*Correct answer:*

- Moderate and high myopia. Myopia is characterized by a decrease in the rigidity of the fibrous membranes of the eye and intraocular structures (trabecular and ethmoid diaphragms), as well as an increased size of the scleral canal of the optic nerve.
- Early development of presbyopia, weakening of the ciliary muscle.
- Pronounced pigmentation of the trabecular apparatus.
- The thickness of the cornea in the optical zone is less than 520 microns as an indicator of changes in the viscoelastic properties of the fibrous membrane of the eye.
- Pseudoexfoliation syndrome.
- Peripapillary chorioretinal atrophy.
- Hemorrhages on the optic nerve head (ONH) (impaired autoregulation of hemodynamics in the ONH).
- History of inflammatory eye diseases.
- Long-term use of steroid installation drugs.
- The occurrence of asymmetry in indicators characteristic of the glaucomatous process between paired eyes (IOP level, different sizes of the ratio of the maximum excavation size to the diameter of the optic disc, etc.).

64. List the main symptoms of open-angle glaucoma *Correct*

*answer:*

The main symptom of glaucoma is:

- reduction (narrowing) of the visual field of vision.
- The appearance of "rainbow circles" before the eyes when looking at a bright light;
- Significant deterioration in visual function in poor lighting;
- Progressive decrease in visual acuity;
- Pain, pain, redness and feeling of heaviness in the eyes;
- Headache;
- Intraocular pressure may be increased.

66. The degree of damage to the optic nerve in the initial stage of glaucoma

*Correct answer:*

Intraocular pressure remains at normal or moderately elevated levels. The boundaries of the visual field of vision are normal, but the blind spot expands, and defects are observed in the paracentral parts of the visual field (scotoma). The excavation of the optic disc is expanded (0.3-0.5 disc diameter), does not reach the edges of the disc. There is no deterioration in visual function.

67. The degree of damage to the optic nerve in advanced stages of glaucoma *Correct answer:*



Intraocular pressure is moderately elevated or high. Changes in the visual field in the paracentral region persist, combined with its concentric narrowing of more than 10 degrees in the superonasal segment. The excavation of the optic nerve disc is expanded (0.6-0.7), in some parts it can reach the disc cavity. There is a decrease in visual acuity.

68. The degree of damage to the optic nerve in advanced stages of glaucoma

*Correct answer:*

Intraocular pressure rises to high numbers (33 mm Hg or more). The boundaries of the visual field are concentrically narrowed and in one or more segments is located less than 15 degrees from the point of fixation, the marginal subtotal excavation of the optic disc is expanded (0.8-0.9), reaching the edge of the disc.

69. The degree of damage to the optic nerve in end-stage glaucoma

*Correct answer:*

Complete loss of visual acuity and visual field or preservation of light perception with incorrect projection. Sometimes a small island of the visual field is preserved in the temporal sector. Total excavation.

70. Absolute signs of penetrating injury to the eyeball *Correct answer:*

- the presence of a through wound in the outer shell of the eye
- gaping wound edges
- loss of the inner membranes of the eye from the wound
- presence of a foreign body inside the eye
- hole in the iris
- entrapment of a foreign body between the edges of the wound

71. Relative signs of penetrating injury to the eyeball *Correct answer:*

- shallow anterior chamber
- deep anterior chamber
- sharp swelling of the conjunctiva with blood accumulated under it
- tear of the pupillary edge of the iris;
- pulling the iris towards the cornea and deformation of the pupil;
- clouding of the lens;
- hypotension

72. List the factors influencing the course of diabetic retinopathy *Correct answer:*

1. Diabetic nephropathy.
2. Cataract extraction.
3. Hypertension.
4. Lipid metabolism.
5. Age and gender of the patient.
6. Overweight.
7. Level of education and physical activity.
8. Other factors (alcohol, myopia, thrombosis of the central vein)

73. Distinctive signs of hard and soft exudate in diabetic retinopathy

*Correct answer:*

Solid exudates are formations of lipids, fibrin, macrophages and cellular debris. They look like yellowish lesions and are localized in the outer plexiform layer. On a fluorescein angiogram they appear as hypofluorescence due to shielding of background choroidal luminescence

Soft exudates are zones of acute circulatory disturbance in the inner layers of the retina. With ophthalmoscopy, these zones are visible as round, poorly defined cotton wool-shaped lesions of white color. Soft exudates may slightly protrude into the vitreous. On a fluorescein angiogram, they appear as hypofluorescent lesions, often in proximity to nonperfused areas of the capillary bed.

74. Characteristic signs of the preproliferative stage of diabetic retinopathy

*Correct answer:*

Preproliferative diabetic retinopathy is characterized by: soft and hard exudates, intraretinal microvascular anomalies (IRMA), retinal venous anomalies, hemorrhages (preretinal, retinal and subretinal).

75. Describe microaneurysms and microhemorrhages in the fundus in diabetes mellitus

*Correct answer:*

Microaneurysms arise as a result of the loss of pericytes and weakening of the tone of the vascular wall, and are localized near ischemic zones. They are located in the inner nuclear layer of the retina. They look like small red dots. Intraretinal hemorrhages are observed when microaneurysms rupture and capillaries decompensate.

Microhemorrhages can take different forms. When localized in the middle layers of the retina, they look like dots or spots of various sizes, bright red in color with clear contours; when located in the layer of nerve fibers, they look like streaks or stripes; around the optic disc, hemorrhages have a radial location.

## **OPK-7.**

Closed type tasks (25 tasks)

1. To read, an emmetropic person at 40 years old needs glasses

- 1) (+)1.0 D
- 2) (+)2.0 D
- 3) (-)1.0 D
- 4) (-)2.0 D

*Correct answer:*1) (+)1.0 D

2. Treatment of eyelid abscess at the infiltration stage

- 1) dry heat
- 2) injection of infiltrate with antibiotics
- 3) autopsy
- 4) all of the above

*Correct answer:*1.2

3. Treatment of external styte at the infiltration stage

- 1) dry heat
- 2) lubricating the skin with 70% alcohol solutions

- 3) squeezing barley
- 4) opening of barley

*Correct answer:*1.2

- 4. Treatment of external barley at the stage of suppuration
  - 1) dry heat
  - 2) lubricating the skin with 70% alcohol solutions
  - 3) squeezing barley
  - 4) opening of barley

*Correct answer:*4) opening of barley

5. Chalazion treatment

Yes	No	rubbing in 1% yellow mercury ointment
Yes	No	lubricating the skin with 70% alcohol solutions
Yes	No	Introduction of thick corticosteroids solutions
Yes	No	surgery

*Correct answer:*

<b>Yes</b>	No	rubbing in 1% yellow mercury ointment
Yes	<b>No</b>	lubricating the skin with 70% alcohol solutions
<b>Yes</b>	No	Introduction of thick corticosteroids solutions
<b>Yes</b>	No	surgery

- 6. When removing a chalazion, an incision is made in the conjunctiva of the eyelid
  - 1) parallel to the edge of the eyelid
  - 2) perpendicular to the edge of the eyelid
  - 3) at an angle to the edge of the eyelids
  - 4) the direction of the cut does not matter

*Correct answer:*2) perpendicular to the edge of the eyelid

7. The following types of asthenopi are distinguished: And:

Yes	No	accommodative
Yes	No	dysbinocular
Yes	No	muscular
Yes	No	symptomatic
Yes	No	neurogenic

*Correct answer:*

Yes	No	accommodative
Yes	No	dysbinocular
Yes	No	muscular
Yes	No	symptomatic
Yes	No	neurogenic

8. Drugs used in the treatment of pneumococcal conjunctivitis

Yes	No	tetracycline
Yes	No	acyclovir
Yes	No	albucid
Yes	No	erythromycin

*Correct answer:*

<b>Yes</b>	No	tetracycline
Yes	<b>No</b>	acyclovir
<b>Yes</b>	No	albucid
<b>Yes</b>	No	erythromycin

#### 9. Criteria for cure of gonococcal conjunctivitis

- 1) absence of patient complaints
- 2) absence of discharge
- 3) absence of clinical signs of conjunctivitis
- 4) negative results of examination of the contents of the conjunctival cavity

*Correct answer:*3.4

#### 10. Drugs used to prevent gonoblenorrhoea newborns

Yes	No	2% boric acid solution
Yes	No	2% silver nitrate solution
Yes	No	10% silver nitrate solution
Yes	No	30% sodium sulfacyl solution

*Correct answer:*

<b>Yes</b>	No	2% boric acid solution
<b>Yes</b>	No	2% silver nitrate solution
Yes	<b>No</b>	10% silver nitrate solution
<b>Yes</b>	No	30% sodium sulfacyl solution

#### 11. Drugs used to treat diplobacillary disease onjunctivitis

Yes	No	20% sodium sulfacyl solution
Yes	No	0.5% zinc sulfate solution
Yes	No	1% zinc oxide ointment
Yes	No	1% tetracycline ointment

*Correct answer:*

Yes	<b>No</b>	20% sodium sulfacyl solution
<b>Yes</b>	No	0.5% zinc sulfate solution
<b>Yes</b>	No	1% zinc oxide ointment
Yes	<b>No</b>	1% tetracycline ointment

#### 12. Consequences of trachoma

Yes	No	trichiasis
Yes	No	cataract
Yes	No	madarose
Yes	No	symblepharon
Yes	No	entropion

*Correct answer:*

<b>Yes</b>	No	trichiasis
Yes	<b>No</b>	cataract
<b>Yes</b>	No	madarose
<b>Yes</b>	No	symblepharon
<b>Yes</b>	No	entropion

13. Eye drops used in the treatment of allergic conjunctivitis

- 1) 0.1% dexamethasone solution
- 2) opatanol
- 3) 1% prednisolone solution
- 4) 1% atropine sulfate solution

*Correct answer: 1,2,3*

14. Concentration of dexamethasone solution used in eye drops

- 1) 0.01%
- 2) 0.1%
- 3) 1.0%
- 4) 10%

*Correct answer: 2) 0.1%*

15. Treatment of diphtheria conjunctivitis is carried out

- 1) at home
- 2) in the infectious diseases department in the general ward
- 3) in the infectious diseases department in an isolated box

*Correct answer: 3) in the infectious diseases department in an isolated box*

16. Phlyctena is a sign

- 1) fungal keratitis
- 2) syphilitic keratitis
- 3) toxic-allergic tuberculous keratitis
- 4) hematogenous tuberculous keratitis

*Correct answer: 3) toxic-allergic tuberculous keratitis*

17. Treatment of cloudy corneal opacities

- 1) keratoprosthesis
- 2) layered keratoplasty
- 3) penetrating keratoplasty
- 4) resorption therapy

*Correct answer: 4) resorption therapy*

18. Treatment of vascularized corneal cataract

- 1) keratoprosthesis
- 2) resorption therapy
- 3) layered keratoplasty
- 4) penetrating keratoplasty

*Correct answer:*1) keratoprosthesis

19. A fresh lesion in the choroid is characterized by

- 1) clear boundaries
- 2) unclear boundaries
- 3) yellowish-gray color
- 4) white with pigmented edge

*Correct answer:* 2,3

20. An old lesion in the choroid is characterized by

- @1) clear boundaries  
@2) fuzzy borders @3) yellowish-gray color @4) white with pigmented edge

*Correct answer:*1,4

21. Drugs prescribed for the treatment of iridocyclitis

- 1) atropine
  - 2) pilocarpine
  - 3) adrenaline
  - 4) dexamethasone
- +++ 1011\*4\*3\*\*\*

*Correct answer:*1,3,4

22. The first and most important measure in the treatment of iridocyclitis is the prescription of drugs

- 1) antibacterial
- 2) anti-inflammatory
- 3) mydriatics
- 4) miotics

*Correct answer:*3) mydriatics

23. The end stage of primary glaucoma is characterized by

- 1) the appearance of small paracentral scotomas
- 2) narrowing of the visual field by more than 10° on the nasal side
- 3) narrowing the border of the visual field to 15° degrees or less from the point of fixation
- 4) loss of objective vision

*Correct answer:*4) loss of objective vision

24. A complicated vitreous hernia is

- 1) prominence of the vitreous into the anterior chamber
- 2) prominence of the vitreous body into the pupil area
- 3) exit of the vitreous body into the anterior chamber
- 4) infringement of the vitreous body in the wound

*Correct answer:*3) exit of the vitreous body into the anterior chamber

25. Optimal correction of aphakia

- 1) spectacle
- 2) contact
- 3) intraocular
- 4) keratophakia

*Correct answer:*3) intraocular

Open type tasks: *TOTAL 75 tasks\**

1. *Task.* The patient is 48 years old. Refractometry data: hyperopia of the right eye 3.0 D, hyperopia of the left eye 5.0 D. Interpupillary distance 62 mm. Write out glasses.

*Reference:*

Rp.: Bifocal glasses:

OD = sph. convex (+) 3.0 D  
sph. convex (+) 4.75 D

OS = sph. convex (+) 5.0 D  
sph. convex (+) 6.75 D

2. *Task.* The patient is 40 years old. Works as a draftsman. Complains of decreased distance vision, especially near vision, and experiences painful sensations in the eyeballs when reading. The anterior segment of the eye is not changed, the media are transparent. The fundus is without pathology. Diagnosis? Recommendations.

*Reference:* Diagnosis: transition of latent hypermetropia (compensated by accommodation) to obvious hypermetropia due to the appearance of presbyopia, accommodative asthenopia.

Recommendations: glasses are required for distance and close-up work.

3. *Task.* After a traumatic brain injury, a patient began to complain of diplopia. Objectively: the eye is deviated medially, visual acuity of both eyes is 1.0. What is your recommended treatment?

*Reference:* Treatment by a neurologist is recommended. If there is no effect, but not before in less than a year, surgery may be recommended.

4. *Task.* The patient has some difficulty in nasal breathing, periodically has purulent nasal discharge, and high fever. Two days ago, pain appeared in the right orbit and protrusion of the eyeball. Objectively: swelling and hyperemia of the eyelids, limitation of eye movements, swelling and hyperemia of the conjunctiva. Make a diagnosis, recommend additional examination, prescribe treatment.

*Reference:* Diagnosis: orbital phlegmon. The diagnosis is based on inflammatory swelling of the eyelids, restriction of eye movement, exophthalmos. Required: X-ray of the paranasal sinuses, consultation with a rhinologist. Differentiate with cavernous sinus thrombosis syndrome, which is characterized by bilateral ocular symptoms, the presence of mydriasis, and cerebral and meningeal symptoms. Treatment: antibiotics and sulfonamides locally and systemically (ampicillin, gentamicin, lincomycin), hospitalization in an otorhinolaryngological hospital and opening of the sinuses; if symptoms increase, opening and drainage of the orbit.

5. *Task.* The patient suddenly developed swelling of the upper eyelid of the right eye, local hyperemia at the root of the eyelash with a purulent head, and severe pain. Diagnosis? Treatment? *Reference:* Diagnosis: external stye of the upper eyelid of the right eye. Treatment: hair removal affected eyelash, 20% albuicide solution 4 times a day, UHF, dry heat, 1% yellow

mercury ointment or any eye ointment containing an antibacterial agent on the eyelids 2 times a day until the infiltrate resolves.

6. *Task.* The patient had constant lacrimation for a year. A few days ago, redness, sharp pain, and reactive swelling of the eyelids appeared at the inner corner of the eye. On palpation of the infiltrate zone there is sharp pain, no fluctuations, purulent discharge from the lacrimal openings. Diagnosis? Treatment?

*Reference:* Diagnosis: acute purulent dacryocystitis. Treatment: dry heat, UHF therapy, instillation of Albucid 20% 6-8 times a day. When fluctuations occur, open and drain. As the process subsides, perform dacryocystorhinostomy or dacryocystorhinodrainage.

7. *Task.* Three months ago, a 50-year-old patient developed mild itching and hyperemia of the eyelid margins with slight peeling, and increased eyelash loss. I instilled Albucid 20% without effect. Presumptive diagnosis? What studies are needed to clarify the diagnosis? Treatment?

*Reference:* The patient has chronic blepharitis, probably caused by Demodex mites. It is necessary to conduct a microscopy of the eyelashes to determine the presence and number of mites. If the result is positive, prescribe rubbing the edges of the eyelids with alcohol and applying ointment, Demolon to the ciliary edge of the eyelids, using shampoos and soaps against lice, and maintaining personal hygiene.

8. *Task.* The patient complains of severe itching in both eyes, a feeling of a foreign body, a small amount of purulent discharge accumulating in the corners of the palpebral fissure in the morning. Symptoms of the disease appeared several weeks ago and are gradually getting worse. Objectively: the skin of the canthus is swollen, hyperemic, and there are isolated cracks. Conjunctival hyperemia is moderately expressed. What disease should you think about? Prescribe treatment.

*Reference:* Diagnosis: angular diplobacillary conjunctivitis of Morax-Axenfeld. The diagnosis is confirmed by the typical localization of the process and subacute course. A bacterioscopy of a smear of conjunctival discharge is necessary. Treatment: 1% zinc sulfate solution, 1 drop 1 time a day or 0.25% zinc sulfate solution, 1 drop 3 times a day.

9. *Task.* The patient looks sleepy and has been suffering from eye disease for several years. Treatment was irregular. A few days ago there was a sharp pain in the eye and blurred vision. Objectively: corneal syndrome, scars and hyperemia of the conjunctiva, its thickening, deformation of the eyelids, in the center of the cornea there is cloudiness with a yellowish tint, its surface is stained with fluorescein. In the anterior chamber (below) there is a cream-colored opacification in the shape of a crescent. Diagnosis? Treatment?

*Reference:* Diagnosis: trachoma III, purulent corneal ulcer. The diagnosis is based on medical history, the presence of scars and areas of thickening in the conjunctiva, corneal ulceration and the presence of hypopyon. Treatment should begin with bacteriological and bacterioscopic examination. Locally - anti-inflammatory drugs, including antibiotics, in drops, under the conjunctiva, parabolbarly; mydriatics, enzymes - in the stage of regression.

10. *Task.* The patient has chronic tonsillitis. After its exacerbation against the background of acute respiratory infections, pain appeared in the eye, and the eye turned red. Objectively: moderately severe symptoms of irritation; there is a grayish cloudiness in the cornea in the shape of a tree branch. The sensitivity of the cornea is reduced. Diagnosis? Treatment?

*Reference:* Diagnosis: herpetic dendritic keratitis. The diagnosis is confirmed eye disease after exacerbation of tonsillitis. Treatment: 1) antiviral drugs (interferon, interferonogens, kerecid, DNAase), 2) atropine, 3) B vitamins.



eleven. *Task.* After an acute respiratory illness, the patient developed pain in the eye and the eye became red. There was a history of purulent discharge from the right nostril. Was treated by an ENT specialist. The process repeated itself. Objectively: OD - pericorneal injection, the iris is discolored, the pupil is narrow, painful on palpation, IOP is reduced. Make a diagnosis. Prescribe treatment.

*Reference:* Diagnosis: acute iridocyclitis due to focal infection (sinusogenic). Treatment: rehabilitation of the paranasal sinuses, mydriatics, topical corticosteroid hormones, absorbable agents.

12. *Task.* During a medical examination, a factory worker was diagnosed with divergent concomitant strabismus. History of viral infection. Objectively: the right eyeball is deviated outward by 20°, the anterior segment of the eye is not changed, the refraction is emmetropic. On ophthalmoscopy, there was a large atrophic focus in the macular area, bordered by lumps of pigment. The edges of the lesion are fiston-shaped. Presumptive diagnosis? Treatment?

*Reference:* Diagnosis: late phase of central chorioretinitis, apparently viral etiology. Dynamic monitoring is recommended to exclude the development of relapse. Secondary strabismus is caused by heterophoria, which manifests itself in connection with a decrease in vision below 0.3 in the right eye.

13. *Task.* 4 years after extracapsular cataract extraction, the patient developed fog in front of the eye and significantly decreased vision. In side lighting, a gray film is visible in the pupil area. Presumptive diagnosis? What research methods will confirm it? Treatment?

*Reference:* Diagnosis: secondary cataract. The method will help confirm the diagnosis biomicroscopy. Treatment: discission of secondary cataracts (with a knife or laser).

14. *Task.* A man visited an ophthalmologist complaining of eye pain. Objectively: IOP 35 mm. Hg Art., anterior segment of the eye without features. In the fundus there is retinal detachment in the lower half. Diaphanoscopy examination is negative in the lower-outer region. What is your presumptive diagnosis? Treatment recommendations? *Reference.* Diagnosis: melanoma, secondary neoplastic glaucoma. Recommended: enucleation with histological examination of the obtained material.

15. *Task.* A patient seen by an ophthalmologist for cataracts in the left eye complains of pain in the left eye. Objectively: congestive injection of the eyeball, decreased depth of the anterior chamber, gray lens with a pearlescent tint. IOP – 32 mm. What is your diagnosis? Treatment recommendations?

*Reference:* Diagnosis: secondary phacomorphic glaucoma.

Recommendations:

extracapsular cataract extraction.

16. *Task.* A 68-year-old man, after prolonged work with his head tilted forward, developed pain in his left eye, radiating to his head. Objectively: injection of the superficial vessels of the eyeball, swelling of the corneal epithelium, decreased depth of the anterior chamber, pupil 6 mm, hard on palpation of the eyes. What is your presumptive diagnosis? What research methods will confirm it? Treatment recommendations?

*Reference:* Diagnosis: acute attack of angle-closure glaucoma. To confirm Diagnosis requires tonometry and gonioscopy. Treatment: according to the treatment regimen for an acute attack of angle-closure glaucoma.

17. *Task.* The patient complains of blindness in the left eye. When illuminated from the side, the pupil area is gray; in transmitted light, there is no pink fundus reflex. What explains the lack of vision?

*Reference.* The cause of blindness is clouding of the lens.

18. *Task.* The patient has a penetrating wound of the sclera. Will the depth of the front chamber?

*Reference.* When the sclera is injured, the anterior chamber deepens, since the sclera the vitreous body falls out.

19. *Task.* Transmitted light method against the background of a pink fundus reflex A black cloudiness is detected, moving in accordance with the movement of the eyeball. Where is the turbidity located? What methods will allow us to clarify its localization?

*Reference.* The clouding is localized either in the cornea or in the anterior regions lens The method of lateral focal illumination and biomicroscopy will help to clarify the localization.

20. *Task.* The patient complains of a sharp decrease in vision in both eyes. Over the last year he has been suffering from recurrent furunculosis and has an increased need for fluid intake. Make a presumptive diagnosis, recommend additional examination, prescribe treatment.

*Reference.* Diagnosis: diabetic retinopathy. To clarify the diagnosis you need: ophthalmoscopy and fluorescein angiography, which will reveal microaneurysms and newly formed retinal vessels typical for diabetes, blood and urine tests for sugar, consultation with an endocrinologist. Treatment: laser coagulation in combination with nucleic acid preparations, cytostatics, enzymes. General treatment by an endocrinologist.

21. *Task.* A patient complains of decreased vision after suffering from the flu. Objectively: the anterior segment of the eye is without any features, the media are transparent. The optic disc is enlarged in size, the boundaries are blurred. Diagnosis? Differential diagnosis? Treatment?

*Reference.* Diagnosis: papillitis (neuritis). Differentiate with congestive optic disc nerve. To clarify the diagnosis, it is necessary to determine visual acuity, an x-ray of the skull and paranasal sinuses, and an examination by a rhinologist and neurologist. A patient with papillitis will be treated by an ophthalmologist. Treatment: anti-inflammatory, desensitizing therapy. Electrophoresis with adrenaline, leeches, mustard plasters on the back of the head. Etiotropic treatment.

22. *Task.* A 45-year-old patient complains of decreased visual acuity when reading. The ophthalmologist discovered the following ophthalmological picture: the optic disc is slightly enlarged in size, slightly protruding, the color is dirty pink, the veins are dilated and tortuous. There are single hemorrhages on the disc. Diagnosis? Differential diagnosis? Treatment?

*Reference.* Diagnosis: congestive optic disc. Differentiate with presbyopia. In a presbyope without any underlying disease, the optic disc is normal. It is necessary to determine visual acuity and visual field, an x-ray of the skull and paranasal sinuses, and consult a neurologist. Treatment: if the diagnosis of "stagnant disc" is confirmed, treatment is carried out by a neurologist or neurosurgeon.

23. *Task.* A 26-year-old patient complains of decreased vision and headache. The patient's brother has been blind since the age of 16. Fundus: the optic discs of both eyes are waxy, the boundaries are clear. Differential diagnosis? Treatment?

*Reference.* Diagnosis: hereditary optic atrophy. Differentiate with retinal pigmentary dystrophy. Additional research: determination of visual acuity, visual field, adaptometry, ophthalmoscopy of the peripheral retina. Treatment: vasodilators, osmo- and vitamin therapy, biostimulants, ultrasound, nucleic acid preparations, hyperbaric oxygenation.

24. *Task.* A patient suffering from hypertension complains of sudden blindness in the right eye. Visual acuity 0.01. Diagnosis? Differential diagnosis? Treatment?

*Reference.* Diagnosis: acute obstruction central arteries retina. Differentiate with thrombosis of the central retinal vein. Required: determination of the visual field, campimetry, ophthalmoscopy, fluorescein angiography, blood pressure measurement and examination by a therapist. Treatment: vasodilators, direct anticoagulants, thrombolytic drugs, decongestants.

25. *Task.* There is a history of repeated hospitalization in the narcological department for an acute condition with disorientation, hallucinations, and delusional status. After detoxification therapy, a decrease in visual acuity of both eyes of 0.3-0.4 D was revealed. Diagnosis? Treatment?

*Reference.* Diagnosis: optic nerve atrophy of alcoholic origin. Treatment: 1) detoxification agents; 2) vitamin therapy; 3) dispensary observation.

26. Treatment methods for dry eye syndrome

*Correct answer:*

1. Conservative therapy:

- tear fluid substitutes;
- keratoplasty preparations.

2. Surgical methods of closing the outflow tract of tear fluid from the eye (used when conservative treatment is ineffective therapy):

- blocking the lower lacrimal punctum by diathermo- or laser coagulation;
- blocking the lower lacrimal opening with a silicone obturator;
- closing the lumen of the lacrimal canaliculi;
- conjunctival coating of the lower lacrimal punctum.

3. Additional therapeutic measures:

- metabolic therapy;
- antiallergic treatment;
- normalization of immune status;
- treatment of concomitant ocular pathologies;
- treatment of common diseases associated with dry eye syndrome.

27. Treatment of acute nonspecific catarrhal conjunctivitis? *Correct answer:*

1. Compliance with personal hygiene rules.

2. Rinsing with antiseptic solutions.

3. Instillation of antibiotics every 2 hours during the first few days, and as the inflammatory process subsides, the frequency of instillation is reduced. The course of treatment is 7-10 days.

28. Principles of therapy for pneumococcal conjunctivitis

*Correct answer:*

1. Maintain proper personal hygiene.
2. Rinsing with antiseptic solutions, films are removed with a damp cotton swab.
3. Instillations with antibiotic solutions, ointment forms are best used at night. The course of treatment is 7-10 days.

29. Principles of therapy for diphtheria conjunctivitis

*Correct answer:*

1. Anti-diphtheria serum is injected intramuscularly;
2. Antibiotics systemically for 5-8 days;
3. The conjunctival cavity is washed with antiseptic solutions;
4. Instillation with antibiotic solutions;
5. Detoxification therapy (for severe symptoms of intoxication);
6. Vitamin therapy.

30. Principles of therapy for diplobacillary conjunctivitis

*Correct answer:*

- instillation of 0.25-0.5% solution of zinc sulfate 4-6 times a day or solution of zinc sulfate and boric acid (used for 1-2 months, after the symptoms disappear, the drug is used 2 times a day for 7-10 days);
- antibacterial drugs;
- NSAID solutions.

31. Principles of trachoma

therapy *Correct answer:*

- compliance with personal hygiene rules;
- antibacterial drugs locally and systemically for 1-3 months (tetracyclines, macrolides, fluoroquinolones), it is better to use ointment forms;
- systemic therapy with interferons and interferonogens;
- squeezing out trachomatous follicles.

32. Principles of therapy for herpetic conjunctivitis

*Correct answer:*

- instillation of 0.1% idoxyuridine solution (Oftan IDU) 6-8 times a day;
- placing 3% ointment containing acyclovir behind the eyelids; you can also use 0.25% oxolinic ointment, 0.5% florenal and 0.5% tebrofen ointment 2-3 times a day;
- nonspecific immunotherapy (interferon, poludan);
- general vitamin therapy.

3. What should be considered when collecting anamnesis in a patient with iridocyclitis

*Correct answer:*

- patient complaints indicating inflammation inside the eye - redness of the eye, pain in the eye, "blurred vision", decreased visual function, the presence of "floaters";
- onset of the disease (acute or invisible to the patient);
- duration of symptoms;
- one-sidedness or bilaterality of the lesion;
- factors that contribute to increased symptoms (hypothermia, stress, alcohol, smoking, exacerbation of systemic disease);
- diseases that preceded uveitis and could become its cause;
- symptoms associated with systemic diseases;

- concomitant local and systemic therapy;
- probable contacts with infectious patients (tuberculosis), contacts with animals (due to professional activities - shepherds, milkmaids), dietary habits (consumption of foods that have not undergone sufficient heat treatment, and the same water from unknown sources);
- a history of eye surgery, trauma, radiation and chemical exposure.

34. *Task.* The patient suffered inflammation of the eye without severe pain. There was practically no treatment. During a medical examination at the plant, a decrease in visual acuity in the right eye was revealed. Objectively: upon examination, slight irritation of the eye appears, the anterior chamber is small, the pupil is narrow and irregular in shape. The eye is denser than normal.

Make a diagnosis. Carry out differential diagnosis.

*Correct answer:* Diagnosis: secondary uveal glaucoma. The diagnosis is confirmed anamnesis, increased intraocular pressure, shredding of the anterior chamber, pupil deformation. Differentiate from secondary neoplastic glaucoma. Required: echodiagnosis, diaphanoscopy.

35. Describe influenza iridocyclitis

*Correct answer:*

Usually develops during an influenza epidemic. The disease begins with the onset of acute pain in the eye, then all the characteristic symptoms quickly appear. In each season, the course of the disease has its own characteristics, which are manifested primarily in the nature of the exudative reaction, the presence or absence of a hemorrhagic component, and the duration of the disease. In most cases, with timely treatment, the outcome is favorable. There are no traces of the disease left in the eye.

36. Describe rheumatoid iridocyclitis

*Correct answer:*

It occurs in an acute form, is characterized by periodic relapses, and accompanies joint attacks of rheumatism. Both eyes may be affected simultaneously or alternately. In the clinical picture, I note a bright pericorneal injection of blood vessels, a large number of small light precipitates on the posterior surface of the cornea, opalescence of the anterior chamber moisture, the iris is flaccid, swollen, the pupil is constricted. Superficial epithelial posterior synechiae are easily formed. The nature of the exudate is serous, a small amount of fibrin is released, so strong adhesions of the pupil do not form. Synechiae are easily ruptured. The duration of the inflammatory process is 3-6 weeks. The outcome is usually favorable.

37. Complications of iridocyclitis

*Correct answer:*

a) complete recovery (with timely treatment started) b)

single posterior synechiae

c) band-like degeneration of the cornea - develops due to chronic long-term uveitis

d) complicated cataract – a complication of both anterior and posterior uveitis; factors contributing to the development of cataracts: malnutrition of the lens; action of toxins; changes in the epithelium of the lens. First, opacities appear in the posterior part of the lens, gradually other parts of the lens become cloudy, and complete or almost complete complicated cataracts develop.

e) secondary glaucoma – a complication of anterior uveitis; reasons: fusion (occlusion) of the pupil; increased production of intraocular fluid; obstruction of outflow in the corner

anterior chamber due to swelling of the corneoscleral trabecula; deposits of exudate and excess pigment; formation of goniosynechia.

f) intraocular hypotension – a complication of anterior or panuveitis; the reason is deep dystrophic processes in the ciliary body - inhibition of the function of the ciliary body and, as a consequence, inhibition of the production of intraocular fluid. Following hypotension, subatrophy and atrophy of the eyeball develops.

g) phenomena of stagnation, exudation, small and large hemorrhages in the retina followed by exudative retinal detachment - develops more often with posterior, less often with anterior, uveitis

h) optic neuritis – occurs with prolonged hypotension

38. *Task.* A 30-year-old man complained of distortion of objects in front of his right eye and decreased vision. Objectively: visual acuity 0.5 with correction by a positive spherical lens (+) 1.5 D is 0.9. Refraction is emmetropic. When examining the fundus of the eye, there is fungoid edema in the macular area and no hemorrhages.

Presumptive diagnosis?

*Correct answer:* Diagnosis: central serous chorioretinitis, unclear etiology.

39. *Task.* A 50-year-old woman complained of intermittent blurring in front of her right eye. Objectively: the eye is calm, IOP is 32 mm. Hg Art., precipitates on the endothelium. Presumptive diagnosis?

*Correct answer:* Diagnosis: uveopathy, glaucomocyclic crisis, secondary glaucoma.

40. *Task.* A patient complains of decreased vision after suffering from the flu. Objectively: the anterior segment of the eye is without any features, the media are transparent. The optic disc is enlarged in size, the boundaries are blurred. Diagnosis? Differential diagnosis?

*Correct answer:* Diagnosis: papillitis (neuritis). Differentiate with stagnant disc optic nerve. To clarify the diagnosis, it is necessary to determine visual acuity, an x-ray of the skull and paranasal sinuses, and an examination by a rhinologist and neurologist. A patient with papillitis will be treated by an ophthalmologist.

41. General principles of treatment of choroiditis *Correct answer:*

42. Methods of treating orbital phlegmon *Correct answer:*

Treatment must be individual, its intensity and duration are determined by the infectious agent, the severity and localization of the process, and the severity of immunological reactions. In this regard, drugs used for the treatment of choroiditis are divided into etiotropic, anti-inflammatory (nonspecific), immunocorrective, symptomatic, affecting complex regenerative and biochemical processes in the structures of the eye, membrane protectors, etc. Systemic use of drugs is combined with local (parabulbar and retrobulbar injections), if necessary, surgical treatment is performed.

Etiotropic treatment involves the use of antiviral, antibacterial and antiparasitic drugs, however, broad-spectrum antibiotics are used in the treatment of choroiditis only after determining the sensitivity of infectious agents to them. In the active phase of the disease, broad-spectrum antibiotics from

groups of amino-glycosides, cephalosporins and others are used in the form of parabolbar, intravenous and intramuscular injections and taken orally. Antibacterial specific drugs are used for choroiditis caused by tuberculosis, syphilis, toxoplasmosis, brucellosis, etc. For choroiditis of a viral nature, antiviral drugs are recommended.

43. Changes in the eye during toxicosis of pregnancy *Correct answer:*

Toxicosis of pregnancy occurs in the form of nephropathy or eclampsia. Toxicosis usually begins with functional changes in blood vessels, which manifest themselves in the fundus in the form of arterial spasms or dilated veins. A picture of retinal angiopathy appears. A disorder of the innervation of the vascular wall can lead to an increase in its transparency and the exudation of the liquid part of the blood and even the formed elements. At this time, retinal swelling and hemorrhages (angioretinopathy) can be detected in the fundus. With large extravasation from the vessels of the choroid, fluid accumulates between the retina and choroid and forms a retinal detachment. In the final stage of development of pregnancy toxicosis, the optic nerve may be involved in the process in the form of its edema, followed by atrophy of the optic fibers (neuroretinopathy). Treatment is associated with timely diagnosis and measures aimed at reducing toxicosis. However, retinal detachment due to toxicosis becomes an indication for termination of pregnancy, and involvement of the optic nerve in the process (neuroretinopathy), in addition to emergency termination of pregnancy, requires reducing swelling of the optic nerve and preventing its atrophy, and therefore blindness.

44. Differential diagnosis of thyrotoxic and edematous exophthalmos.

*Correct answer:*

Thyrotoxic exophthalmos is always observed against the background of thyrotoxicosis. Damage to the organ of vision, as a rule, is bilateral, but at the onset of the disease, monolateral damage is possible. The leading clinical manifestations of thyrotoxic exophthalmos are: slight protrusion of the eyeballs (does not exceed 2 mm compared to the norm), rare blinking (Stellwag's symptom), retraction of the upper eyelid (Dalrymple's symptom), lag of the upper eyelid with slow lowering of the eyes (Graefe's symptom), tremor closed eyelids (Rosenbach's symptom), increased shine of the eyes (Krause's symptom), convergence insufficiency (Mobius's symptom) and impaired abduction of the eyeballs outward, a gaze (gasp) due to a decrease in the frequency and amplitude of blinking.

Edematous exophthalmos develops against the background of hyperthyroidism, as well as in patients with primary or postoperative hypothyroidism, less often in a euthyroid state. There are three stages of the disease: compensated, subcompensated and decompensated edematous exophthalmos.

45. Changes in the eye with acquired toxoplasmosis.

*Correct answer:*

There are atrophic chorioretinal foci with pigmented edges. As a rule, they are bilateral and are discovered by chance. When focal retinitis occurs, single inflammatory foci have different sizes in each individual case. The pathology is accompanied by opacification of the vitreous body, often localized near the old pigment focus. Examination of the lesion itself is complicated by an exudative reaction in the vitreous body, which has the shape of a "cap". Vasculitis may occur; in some cases, the posterior hyaloid membrane is detached and covered with inflammatory precipitates.

Another sign of ocular toxoplasmosis is papillitis, characterized by inflammation of the optic nerve head, which is usually secondary.

46. Basic principles of treatment of creeping ulcers of the cornea.

*Correct answer:*

Definitely in hospital. Locally: frequent instillation of solutions of antibiotics, sulfonamides, pupil dilators. Antibiotics are injected under the conjunctiva. General treatment: intramuscular, intravenous antibiotics, orally - sulfonamides, desensitizing agents. In severe cases, cryoapplication is performed (i.e. at a low temperature minus 90-180.C), diathermocoagulation (with high frequency current), extinguishing with a 10% alcohol solution of iodine, covering the ulcer with biologically active tissues (conjunctiva, placenta, donor cornea).

47. Tuberculous hematogenous keratitis: treatment, outcomes.

*Correct answer:*

Treatment is aimed at the underlying disease (sometimes up to a year), the choice of general therapy regimen is carried out by a phthisiatrician (a rational scheme for combining drugs of the first and second line, the duration of the course of treatment, the duration of the second course, taking into account the patient's immune status, diet, diet with limited salt and carbohydrates, the need and duration of climatotherapy, sanatorium treatment). The ophthalmologist carries out local therapy (instillation of 3% tubazide or 5% saluzide, or streptomycin-calcium chloride complex 50,000 units in 1 ml of distilled water, application of 5-10% PAS ointment or vitamin ointments, or 20% actovegin; corticosteroids in drops of ointments and under the conjunctiva, alternating them every other day with Saluzide 5%). Otherwise, the principles of treatment are common to all keratitis. The outcome of hematogenous keratitis is unfavorable, as dense vascularized cataracts form.

48. Parenchymal syphilitic keratitis: treatment, outcomes.

*Correct answer:*

The first course of treatment is carried out in an eye hospital, and subsequent courses, after regression of ocular changes, are carried out in a dermatovenerological clinic.

Frequent installations of a 1% atropine solution are prescribed locally. If intraocular pressure increases, miotics are instilled.

Subconjunctival injections of corticosteroids.

The use of heat in the form of heating pads, poultices, heating with a Sollux lamp, UHF, paraffin applications.

To resolve infiltration, iontophoresis is prescribed with 0.1% dionine or 2% quinine, 5-10% potassium iodide, placing 1% yellow mercury ointment behind the eyelids, and instilling dionine in increasing concentrations.

In cases of indolent keratitis, a therapeutic non-through corneal transplant is recommended in addition.

General treatment is carried out after consultation and under the supervision of a venereologist. They start with intramuscular injections of ampicillin, 5,000,000 IU or more per course.

Courses are conducted using preparations of iodine, mercury, arsenic, and bismuth.

Carrying out tissue therapy.

Prescription of vitamins (A, B, C, D).

49. Discoid and metaherpetic keratitis: basic principles of treatment. *Correct answer:*



As part of etiologic therapy, the installation of antiviral drugs (interferon, acyclovir, deoxyribonuclease) and interferon inducers, the application of tebrofen, bonaftor and oxaline ointments are prescribed. For severe viral keratitis, oral administration of large doses of antiviral drugs (acyclovir) is also indicated. To correct the immune status, levamisole, extracts of the thymus gland, and intramuscular injections of nonspecific gamma globulin are used.

In order to prevent secondary infection in viral keratitis, antiseptic solutions (sulfacetamide) and antibacterial ointments (tetracycline or erythromycin) can be prescribed locally. In the course of treatment of viral keratitis, painkillers (novocaine, analgin), antihistamines (chloropyramine, diphenhydramine), NSAIDs (phenylbutazone, indomethacin), proteolysis enzyme inhibitors (aprotinin), mydriatics (atropine, cyclopentolate), antioxidants (vitamin E, methylethylpyridinol) are used. vitamins (A, C, PP, group B). For herpetic ulcers, cryoapplication and laser coagulation are performed; to improve blood supply and trophism of the cornea - diathermy, diadynamic currents, medicinal electrophoresis, stimulation of regeneration with a helium-neon laser. Corticosteroids for viral keratitis can only be used in very small doses in the form of drops with complete epithelization of the cornea in the regressive period of the disease.

50. Uveal cataract: causes, treatment.

*Correct answer:*

The most common causes include unfavorable heredity, chromosomal abnormalities, and genetic changes in the structure of proteins. The condition may be associated with taking certain medications or previous infections. Endocrine system disorders or bad habits increase the risk of pathology. Symptoms: the patient complains of a blurry image; the pupil acquires a whitish or yellow tint; the image begins to double; vision cannot be corrected by using glasses or contact lenses; difficulties arise in recognizing nearby objects; the patient complains of glare at night; the quality of vision gradually or sharply decreases; sensitivity to light increases. Treatment is phacoemulsification with IOL implantation. A thorough diagnosis must be performed before surgery is scheduled. At the initial consultation, patients undergo biomicroscopy. This method makes it possible to carefully study the condition of the front shade of the eye. Tonometry is performed to evaluate intraocular pressure, visual acuity and the condition of the fundus.

According to indications, an ultrasound examination is performed - it is necessary for severe opacification of the vitreous body in order to establish the exact localization and extent of pathological changes. To assess the patient's general condition, laboratory tests are prescribed, including urine and blood tests, immunological analysis, and PCR. A thorough diagnosis before a planned operation is aimed at timely identification of possible limitations to therapy.

51. Toxic cataracts: causes, treatment.

*Correct answer:*

Opacities of the lens that occur in common severe poisoning are called toxic cataracts. Among the factors that cause the development of cataracts are ergot, naphthalene, thallium, dinitrophenol, trinitrotoluene, and nitro dyes. There are known cases of cataracts occurring when taking certain medications, such as sulfonamides and corticosteroids. These drugs include: local and systemic steroids. Posterior subcapsular cataracts develop more often, and

then the front one. Reversal of cataract development is possible when steroids are discontinued or reduced; chlorpromazine; In cataracts associated with this drug, small yellow-brown granules are visible on the anterior capsule of the lens. Visual acuity, as a rule, does not change. The drug has retinotoxicity and can cause pigmentation of the conjunctiva; miotics, in particular long-acting cholinesterase inhibitors with long-term use; busulfan and other drugs that can lead to the development of cataracts. Treatment is phacoemulsification with IOL implantation.

52. Radiation cataracts: clinic, treatment. *Correct answer:*

Radiation cataract is a type of clouding of the lens that occurs as a result of damage to ionizing radiation. Most often, radiation cataract occurs along with concomitant symptoms of damage to other tissues of the eye or its adnexa. However, lens opacification usually occurs much later than radiation damage to other eye tissues. The rate of clouding of the lens depends on the radiation dose received: the higher the dose, the more intense the process of cataract maturation. On average, clouding of the lens after irradiation can be detected within a period of two to seven years. Treatment is phacoemulsification with IOL implantation.

53. Types and methods of treatment of phacogenic glaucoma *Correct answer:*

Phacogenic glaucomas include: phacolytic, phacotopic, phacomorphic. Treatment of secondary glaucoma caused by phacogenic causes consists of urgent removal of the lens along with antihypertensive therapy. After getting rid of the cause of the increased pressure - the lens - a complete cure may occur.

54. Hypertensive retinopathy: its connection with the stages of hypertension *Correct answer:* Hypertensive angiopathy most often corresponds to the phase unstable increase in blood pressure and the initial stages of hypertension. When hypertensive phenomena are eliminated, the fundus of the eye acquires a normal appearance. Hypertensive angiosclerosis of the retina corresponds to a phase of sustained increase in systolic and diastolic blood pressure and is usually observed in stages IIA and IIB. Retinopathy of varying severity is observed in stages IIIA - IIIB of hypertension. Hypertensive neuroretinopathy develops more often in the late period of hypertension and usually serves as an unfavorable prognostic sign.

55. Acute obstruction of the central retinal artery: treatment, possible complications, prognosis.

*Correct answer:*

Irreversible damage to the retina develops 1-1.5 hours after the complete cessation of arterial blood flow in the retina. Treatment is aimed at restoring blood flow in the arterial bed

- The patient should be placed in a supine position to increase blood flow to the retina.

- IV 1-5 ml of 1% nicotinic acid solution, and retrobulbar - 0.5 ml of 0.1% atropine sulfate solution;

- put a validol or nitroglycerin tablet or a piece of sugar moistened with 1-2 drops under the patient's tongue;

- at the same time let amyl nitrite inhale (2-3 drops on a cotton swab);

- administer 10,000 units of heparin intramuscularly;

- give the patient 1-2 tablets of nikoshpan, drotaverine (no-shpa), halidor or papaverine orally;
- immediately send the patient to an eye hospital. Further treatment consists of prescribing vasodilator, anticoagulant, and antisclerotic therapy.
- Intraocular pressure should be reduced by massage of the eyeball, paracentesis of the anterior chamber and oral administration of 2 tablets of acetazolamide, 250 mg each.
- Arterial spasm is eliminated by intravenous injection of 2 ml of 2% papaverine solution.
- Vasoconstriction of the retinal arteries is prevented by allowing the patient to inhale a mixture of 95% oxygen and 5% carbon dioxide (carbogen) for 10 minutes every 2 hours.

Subsequent examinations are carried out at least once every 2 weeks. If rubeosis (neovascularization) of the iris is detected, panretinal laser coagulation of the retina is performed. The outcome of occlusion of the central retinal artery in 1% of patients is neovascularization of the optic disc with the development of secondary neovascular glaucoma. The most common and serious complication of the pathology is optic nerve atrophy and blindness. Restoration of vision is possible only if the full volume of treatment is started within the first 40-60 minutes. from the moment of development of occlusion of arterioles in the event that the pathogenesis of vascular obstruction is due to their spasm. Patients who have suffered occlusion of the central retinal artery are at risk for the development of acute vascular accidents with a fatal outcome.

56. Thrombosis of the central retinal vein: treatment, possible complications.

*Correct answer:*

Treatment of this disease should begin immediately after the diagnosis of retinal vein thrombosis. Treatment is usually conservative and includes the use of several main groups of drugs: To restore normal blood flow, drugs from the group of fibrinolytics are used, which are usually administered in the form of paraorbital injections. Subsequently, direct anticoagulants (fast-acting drugs such as heparin) may be prescribed. To reduce the severity of swelling and inflammation of the retina, steroid hormones are used (in the form of tablets or injections). If necessary, antihypertensive drugs are prescribed, including those with a diuretic effect (furosemide, Lasix) and antiplatelet agents (drugs that reduce blood clotting). Intravenous administration of drugs that improve microcirculation in the retinal vessels, vitamins and angioprotectors is also indicated.

If detected untimely and without proper treatment, central retinal vein thrombosis can be accompanied by a number of complications, among which it is worth noting optic nerve atrophy, central retinal dystrophy, the development of secondary glaucoma, the appearance of hemophthalmos (bleeding in the eye), and repeated retinal vein thrombosis.

57. Diabetic retinopathy: modern methods of prevention *Correct answer:*

Prevention of diabetic retinopathy is aimed at maintaining a state of normoglycemia. In turn, chronic hyperglycemia leads to the progression of the pathological process, triggering microvascular complications. It is necessary: to be regularly observed by an endocrinologist; measure the concentration of glucose in the blood at least three times during the day (the optimal number of times to control glycemia will be advised by the endocrinologist, taking into account the characteristics of the clinical case); administer insulin in a timely manner for type 1 diabetes and take glucose-lowering tablets for type 2 disease; eat rationally and monitor carbohydrate consumption, count bread units; take regularly

lipid profile to assess the plasma atherogenic index and, if necessary, begin drug correction; monitor blood pressure levels and maintain them within normal limits (slightly below the upper limit to reduce vascular risks).

Maintaining satisfactory glycemic control significantly reduces the risk of developing diabetic retinopathy. In addition, as part of prevention, regular examinations by an ophthalmologist are recommended, even in the absence of complaints. Identifying the initial signs of retinal damage will allow targeted treatment (laser photocoagulation, metabolic therapy or anti-VEGF therapy).

58. Senile macular degeneration of the retina: treatment methods *Correct answer:*

The goals of treatment for macular degeneration of the retina are: prevention of blindness; reverse development of the disease; preventing the development of complications.

In the non-exudative (dry) form of AMD, strengthening the antioxidant system through the use of drugs containing vitamins and microelements, as well as drugs that improve microcirculation, in order to prevent the progression of the process.

In the exudative (wet) form of AMD, there is an effect on the choroidal neovascular membrane, an obstacle to the growth of newly formed vessels and a decrease in the permeability of the vascular wall and retinal edema. Methods: Intravitreal administration of angiogenesis inhibitors; Intravitreal injection of corticosteroids; Laser coagulation of the retina; Surgery.

59. Primary retinal detachment: causes, treatment methods. *Correct answer:*

The reason is a violation of the structure of the retina itself - the occurrence of breaks. As a rule, this occurs against the background of the development of various dystrophies or degenerations.

Treatment of retinal detachment is exclusively surgical; medications are used only as auxiliaries - antibiotics, non-steroidal anti-inflammatory drugs, mydriatics and steroid hormones. The principle of detachment surgery is the anatomical rapprochement of the retina and choroid, as well as the mandatory formation of adhesions that block the gap. The choice of surgical method depends on the type of detachment, its prevalence, duration, location and number of ruptures

60. Secondary retinal detachment: causes, treatment methods. *Correct answer:*

The causes of retinal detachment in secondary conditions are either excessive tension of the retinal tissue (traction) or "sweating" of exudate under the photoreceptor layer (exudative). Secondary retinal detachment develops in diabetes mellitus (proliferative and vitreoproliferative retinopathy, especially with recurrent hemophthalmos); thrombosis of the central retinal vein (more precisely, its consequences); retinopathy of prematurity; inflammation of the posterior segment of the eye (uveitis, chorioretinitis); late toxicosis of pregnancy; tumors or metastases; general diseases of the blood and cardiovascular system, etc.

Treatment of retinal detachment is exclusively surgical; medications are used only as auxiliaries - antibiotics, non-steroidal anti-inflammatory drugs, mydriatics and steroid hormones. The principle of detachment surgery is the anatomical rapprochement of the retina and choroid, as well as the mandatory formation of adhesions that block the gap. The choice of surgical method depends on the type of detachment, its prevalence, duration, location and number of ruptures

61. Ischemic opticopathy: connection with general diseases of the body, principles of treatment

*Correct answer:*

Ischemic optic neuropathy most often develops against the background of common vascular diseases - atherosclerosis, hypertension, temporal giant cell arteritis (Horton's disease), periarteritis nodosa, obliterating arteritis, diabetes mellitus, cervical discopathy with disorders in the vertebrobasilar system, thrombosis of the great vessels. In some cases, it occurs as a result of acute blood loss during gastrointestinal bleeding, trauma, surgery, anemia, arterial hypotension, blood diseases, after anesthesia or hemodialysis.

Treatment: Urgent hospitalization in the eye department for a course of drug therapy. Surgical treatment: reconstructive operations on the carotid arteries according to indications in the department of vascular surgery. Treatment of systemic diseases in specialized hospital units.

62. Treatment of congestive optic disc *Correct answer:*

Treatment for a congestive disc depends on the cause. First of all, it is necessary to eliminate space-occupying formations in the skull - tumors, edema, hematomas. Typically, corticosteroids (prednisolone) and the introduction of hyperosmotic agents (glucose solution, calcium chloride, magnesium sulfate), diuretics (diacarb, hypothiazide, triampur, furosemide) are used to eliminate edema. They reduce extravasal pressure and restore normal perfusion. To improve microcirculation, Cavinton and nicotinic acid are administered intravenously, Mexidol (IM and into the retrobulbar space - an injection in the eye), and a nootropic drug - Fezam - is prescribed orally. If stagnation occurs against the background of hypertension, then treatment is aimed at treating the underlying disease (hypertensive therapy).

63. Acute attack of angle-closure glaucoma: methods of prevention and treatment

*Correct answer:*

To prevent illness and its complications are recommended to patients adjust your lifestyle. You should minimize nervous shocks in the family and at work, devote enough time to sleep and relaxation. For glaucoma, light physical labor is beneficial, and tilting your head down should be avoided. To prevent an increase in IOP, you should avoid strong coffee and tea, hot baths and saunas, and prolonged visual stress.

Treatment of an acute attack of glaucoma begins immediately with the prescription of drugs that reduce intraocular pressure and distraction procedures. To reduce intraocular pressure, instillations of drugs that reduce the production of intraocular fluid are recommended: beta blockers - 2 times a day and carbonic anhydrase inhibitors - 3 times a day. In order to try to relieve the angular block, instillations of pilocarpine hydrochloride 1% are prescribed according to the following scheme: every 15 minutes for an hour, then every 30 minutes for 3 hours, then once an hour. It should be remembered that instillation of pilocarpine can aggravate the course of an acute attack in the Asian form of angle-closure glaucoma! In parallel, carbonic anhydrase inhibitors are prescribed orally (diacarb 0.25 g 2 times a day in combination with potassium preparations), osmotic agents (glycerol 50% at the rate of 1.5 g per 1 kg of weight). This drug therapy is carried out against the background of distracting procedures: hot foot baths, leeches on the temple area, mustard plasters on the calf muscles. If not

To relieve symptoms of an acute attack of glaucoma, surgical treatment is performed within 24 hours.

#### 64. Basic methods of treating primary glaucoma.

*Correct answer:*

Main methods of treatment: conservative – medication; surgical; laser. Drug treatment begins with monotherapy with a first-line drug. First-line drugs include prostaglandins F-2a, which reduce intraocular pressure by increasing the outflow of aqueous humor: Xalatan, Travatan, Prolatan. If the drug is ineffective or poorly tolerated by the patient, the drug is replaced with a drug from another pharmacological group or switched to combination therapy. Cholinomimetics (“Pilocarpine”, “Carbacholin”, “Phosphacol”), by constricting the pupil and contracting the ciliary muscle, widen the cracks of the trabecular meshwork - as a result, the outflow of aqueous humor improves. The prescription of  $\beta$ -blockers: Timolol, Betoptik, Proxodol leads to a decrease in the production of aqueous humor. Carbonic anhydrase inhibitors (Azopt, Trusopt) also reduce the production of ocular fluid.

Indications for surgical treatment for open-angle glaucoma are: Progression of the disease against the background of ineffectiveness of other treatment methods. Inability to use alternative methods of therapy: patient non-compliance with doctor's instructions, severe side effects. Maintained high level of intraocular pressure, which is not corrected by conservative methods. The purpose of surgery for glaucoma is to normalize hydrodynamics - the formation of additional artificial pathways for the outflow of aqueous humor.

#### 66. Prevention of glaucoma

*Correct answer:*

You can't overexert yourself. Limitation subject to How physical And psycho-emotional stress.

Don't keep your head tilted. It is harmful for patients with glaucoma to engage in activities that require prolonged head tilting forward. This applies to drawing, drawing, knitting, embroidery and similar activities. It is necessary to maintain a level head position when working at the computer, watching television programs, or reading.

Set up the correct lighting. It is dangerous for people with glaucoma to work in poor lighting. It is important to make it optimally bright so as not to strain your eyes.

To refuse from bad habits. Smoking has an extremely negative effect on the blood supply not only to the organs of vision. The transport of oxygen and nutrients to all elements of the eyeball is disrupted.

Do not wear clothes that interfere with blood circulation in the neck and head.

Avoid visual fatigue. It is important to take breaks while working on the computer, reading or watching movies. It is recommended to set aside 10-15 minutes every hour for rest. At this time, you need to really rest, and not change one strenuous activity to another.

Eat properly. To prevent glaucoma, you need to include raw vegetables, fish, and fruits in your diet, while reducing the amount of animal fats and sugar.

Consume moderate amounts of water. You should not limit the daily intake of water or other liquid unless prescribed by a doctor. It is not always necessary to give up coffee or tea if you have glaucoma, but you should not drink more than one cup of any liquid at a time. To be on the safe side, you can check your reaction to coffee: measure your blood pressure before and after.

Get plenty of rest, get a good night's sleep. Rest is an important preventative measure for many diseases. Eight hours of sleep from 10-12 pm is considered enough. It is advisable not to stay up late and take a walk in the fresh air in the evening. It is necessary to sleep on high pillows. After waking up, it is recommended to do a warm-up right in bed.

Do not refuse drug treatment.

Avoid sudden changes in lighting. This is especially true for people with angle-closure glaucoma. A sharp change in lighting intensity is a strong strain on the eyes, so before going to the cinema you need to use drops that prevent pupil dilation.

Constantly monitor your condition. Even with stable intraocular pressure, you should visit your doctor at least four times a year. These measures will help avoid glaucoma and other diseases of the visual system. Prevention is recommended not only for people with a predisposition; glaucoma can occur even in a healthy person.

67. Hypotony of the eye: causes, methods of treatment. *Correct answer:*

Causes of hypotension: penetrating eye injuries, formation of fistulas, impaired production of intraocular fluid, contusions of the eyeball, retinal or choroidal detachment, surgical interventions, hypotension is a common complication of antiglaucomatous operations.

First of all, treatment of the underlying disease. During surgical interventions on the eyeball, careful sealing of the incision is necessary. For penetrating wounds of the eye and primary treatment, it is important to achieve good adaptation of the wound edges and sealing of the eye. It is recommended to replace significant losses of the vitreous body with preserved vitreous body, luronite. If the cause of hypotension is a fistula, it is recommended to eliminate it - layer-by-layer corneal transplantation. Drug treatment: instillation of a 1% solution of atropine sulfate 4-5 times a day, subconjunctival injections of a 0.1% solution of atropine sulfate, 0.2-0.5 ml. subconjunctival injections of 2-3% sodium chloride solution, 0.2-0.5 ml, 0.4% dexamethasone, 0.3-0.5 ml. Tissue therapy is carried out (liquid aloe extract for injection, etc.), oxygen therapy, and a course of intramuscular injections of vitamin B1. Monitor blood pressure and avoid hypotension.

The prognosis is serious. If persistent hypotension is not eliminated, visual functions gradually fade and subatrophy of the eyeball occurs.

68. Metallosis of the eye: treatment. *Correct answer:*

Treatment of patients with ocular metallosis is carried out in two stages. First, surgical removal of the foreign body from the orbital cavity is indicated. If there is an inflammatory reaction from the eye membranes, a short course of antibiotics and glucocorticosteroids is required. The duration of conservative therapy is 5-7 days. If there is a high risk of narrowing of the pupillary opening, instillations of mydriatics are prescribed. Additionally, intravenous administration of proteolysis inhibitors and vitamin therapy can be used. The use of unithiol ensures the binding of toxic metal products with their subsequent conversion into inactive compounds. The effectiveness of potassium iodide has been proven only in stage 1, and to a lesser extent, stage 2 of the disease.

The tactics for managing patients at the next stage is determined by the nature of secondary changes in the eye. The development of cataracts requires phacoemulsification followed by intraocular lens (IOL) implantation. At

If symptoms of ocular hypertension occur, antihypertensive therapy is prescribed. In the case of secondary glaucoma, conservative treatment is ineffective, so surgical restoration of the outflow tract of intraocular fluid is indicated. At the first signs of retinal detachment, laser coagulation is performed. With severe destruction of the vitreous body, vitreolysis is performed. Total lesion requires vitrectomy.

#### 69. Traumatic cataract: symptoms, treatment

*Correct answer:*

An obvious symptom of the pathology is a recent eye injury. If, after damage to the organs of vision, the patient feels discomfort in the eyes, makes an effort to read literature, and "floaters" appear before the eyes, there is a high probability that these are the first signs of cataracts as a result of injury. There may also be other signs: the picture doubles, halos appear over well-lit objects, sensitivity to bright light, decreased contrast or brightness of the picture, the pupil acquires an unusual color, complete blindness.

The method of treating cataracts resulting from eye injury depends on the severity of the damage received and the degree of clouding of the natural lens. The doctor's primary task is to eliminate the consequences of the injury and the resulting inflammation. After this, the cataract itself is removed. The exception is chemical burns, when it is necessary to quickly take measures to preserve the patient's vision.

#### 70. Complications of penetrating eye injuries

*Correct answer:*

Local: endophthalmitis, panophthalmitis, chalcosis, siderosis, traumatic cataract, hemorrhages in the vitreous body, retina. General: sepsis, tetanus, gas gangrene, meningitis, encephalitis, sinus thrombosis.

#### 71. Traumatic iridocyclitis: stages

*Correct answer:*

Serous, purulent (purulent iridocyclitis, endophthalmitis, panophthalmitis), fibrinous-plastic iridocyclitis

#### 72. Sympathetic ophthalmia: prevention, treatment.

*Correct answer:*

Sympathetic inflammation (sympathetic ophthalmia) is a chronic malignant inflammation of the vascular tract of an uninjured eye, which develops in the presence of sympathetic inflammation in the injured eye (iridocyclitis in the injured eye).

GCS locally and orally (dexamethasone in the form of instillations, subconjunctival and parabolbar), NSAIDs (indomethacin, ibuprofen); AB injection intramuscularly and subconjunctivally; desensitizing agents; local mydriatics; cytostatics (cyclophosphamide).

Prevention: timely treatment (including surgery) of various lesions of the organ of vision (qualified treatment of wounds, removal of foreign bodies, etc.); removal of the blind traumatic eye, which is a source of autosensitization, if the operation was performed within 14 days after the injury. If signs of sympathetic ophthalmia appear in a healthy eye, the injured eye, if it is not blind, is not removed, because the prognosis of sympathetic ophthalmia is always very difficult and the vision of the injured eye may subsequently be higher than that of a previously healthy eye.



73. Traumatic hemophthalmos: first aid, treatment.

*Correct answer:*

In case of sudden clouding or the onset of sharp blurred vision, flashing "floaters" or reddish spots, before contacting an ophthalmologist, you should: Lay the patient down with the head elevated at an angle of 45°. Apply a gauze bandage soaked in cold water that does not allow light to pass through for 2-3 hours. Immediately stop taking anticoagulants or antiplatelet agents. If blood pressure is high, take an antihypertensive drug. After an initial consultation and examination, to stop bleeding, a 3% solution of calcium chloride is instilled into the eyes and an intramuscular injection of a 10% solution of calcium gluconate is performed.

To eliminate the consequences of more severe hemophthalmos, treatment is carried out in full. Immediately after the diagnosis, a drug therapy plan is drawn up, aimed at resolving hemorrhages and strengthening the vascular walls. If necessary, it is supplemented with laser therapy or surgical methods.

The drug therapy plan may include taking: vitamin preparations (vitamins C, PP and group B); antioxidants (Mexidol, Emoxipin, etc.); various hemostatic agents; tissue plasminogen activators (Alteplase); prourokinase (from 3 to 28 days); vasodilating antiplatelet agents (Trental, Agapurin); angioprotectors (Parmidin, Dicynon, Doxium). To prevent thrombosis and improve the fibrinolytic properties of blood, Heparin, Divascan or Peritol can be prescribed. If necessary, parabolbar administration of enzymes (Collalysin, Unitol, Papin, Protolysin) with fibrinolytic properties is carried out.

74. Prevention of damage to the eye and its appendages

*Correct answer:*

Major eye injuries can be prevented by wearing safety glasses. Wear safety glasses or masks when working with power tools or chemicals, or when performing other work where there is a risk of eye damage. Representatives of some professions (builders, doctors) are required to wear safety glasses to prevent foreign objects from getting into their eyes. After an eye injury, you need to monitor for changes in vision and symptoms of infection. Most minor eye injuries can be treated at home.

75. Characteristics of disability groups according to the state of visual functions.

*Correct answer:*

Third group: degree of vision loss - 40-60%. There are significant disturbances in the functioning of the eyes. The patient requires special devices to carry out normal activities. The ability to self-care is fully preserved. Second degree: degree of vision loss - 65-90%. There are pronounced disturbances in activity. The patient often requires the help of others. Group 1: >90% vision loss. Severe damage to the analyzer, persistent dysfunction of the visual system. Often total blindness.

### **PC-3.**

Closed type tasks (25 tasks)

1. Prevention of work-related injuries:

1) compliance with safety regulations

2) equipping workplaces with protective equipment

3) compliance with sanitary and hygienic standards in production premises

4) regular safety training *Correct answer:1,2,3,4*

2. Injuries to the organ of vision can be divided into

- 1) industrial
- 2) agricultural
- 3) household
- 4) children's
- 5) combat

*Correct answer:1,2,3,4,5*

3. Industrial injury is characterized by damage

- 1) with the threat of contracting tetanus
- 2) corresponding to the nature of production
- 3) combined and combined
- 4) with improvised means

*Correct answer:2) corresponding to the nature of production*

4. Agricultural injury is characterized by damage

- 1) combined and combined
- 2) corresponding to the nature of production
- 3) with the threat of tetanus infection
- 4) with improvised means

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*Correct answer:3) with the threat of tetanus infection*

5. Domestic trauma is characterized by damage

- 1) with improvised means
- 2) combined and combined
- 3) corresponding to the nature of production
- 4) with the threat of tetanus infection *Correct answer: 1) with improvised means*

6. Injuries to the eyeball are divided into

- 1) concussion
- 2) non-penetrating
- 3) penetrating
- 4) burns

*Correct answer:2.3*

7. Damage to the ethmoid sinus is characterized by

- 1) nosebleed
- 2) emphysema
- 3) empyema
- 4) edema

*Correct answer:1.2*

8. Subcutaneous emphysema with damage to the ethmoid sinus is characterized by

- 1) edema
- 2) crepitation
- 3) exophthalmos
- 4) fluctuation

*Correct answer:*2) crepitation

9. Exophthalmos occurs when fragments of orbital bones are displaced

- 1) inside
- 2) outward
- 3) posteriorly
- 4) anteriorly

*Correct answer:*1) inside

10. Damage to the optic nerve due to orbital injuries is accompanied by

- 1) impairment of central vision
- 2) impaired peripheral vision
- 3) complete loss of vision
- 4) preservation of vision

*Correct answer:*3) complete loss of vision

11. Damage to the orbital walls may be accompanied by the development of the syndrome

- 1) Horner
- 2) superior orbital fissure
- 3) inferior orbital fissure
- 4) all of the above

*Correct answer:*2) superior orbital fissure

12. Superior orbital fissure syndrome includes symptoms

- 1) ptosis
- 2) miosis
- 3) mydriasis
- 4) enophthalmos
- 5) exophthalmos

*Correct answer:* 1,3,5

13. Incorrectly performed PSO of a penetrating wound of the eyelids leads to the development

- 1) lagophthalmos
- 2) lacrimation
- 3) xerosis
- 4) exophthalmos

*Correct answer:*3) xerosis

14. Eyelid wounds heal well due to an important structural feature of the eyelids

- 1) thickness
- 2) area
- 3) innervation
- 4) blood supply

*Correct answer:*4) blood supply

15. Contusions of the eyeball can lead to

- 1) rupture of the fibrous membrane of the eyeball
- 2) separation and rupture of the iris
- 3) detachment or rupture of the retina
- 4) choroidal rupture
- 5) separation of the optic nerve

*Correct answer:* 1,2,3,4,5

16. Foreign superficial bodies of the eyeball

- 1) are not deleted
- 2) removed on an outpatient basis
- 3) are removed in stationary conditions
- 4) individual approach

*Correct answer:*2) removed on an outpatient basis

17. First medical aid for penetrating wounds of the eyeball should be provided by a doctor

- 1) ophthalmologist
- 2) ophthalmic surgeon
- 3) traumatologist
- 4) any specialty

*Correct answer:*4) any specialty

18. It is necessary to transport a victim with a penetrating wound

- 1) without applying a bandage
  - 2) after applying a monocular bandage
  - 3) after applying a binocular bandage
- Correct answer:*3) after applying a binocular bandage

19. Penetrating wounds of the eyeball require

- 1) primary surgical treatment
- 2) administration of antibiotics
- 3) administration of antitetanus serum and toxoid
- 4) removal of intraocular foreign bodies

*Correct answer:* 1,2,3,4

20. Methods for removing intraocular foreign bodies

- 1) straight
- 2) front
- 3) diascleral
- 4) all of the above

*Correct answer:*4) all of the above

21. Prolonged stay of a metal foreign body inside the eyeball leads to the development of a specific lesion

- 1) endophthalmitis
- 2) panuveitis
- 3) metallose
- 4) hemophthalmos

*Correct answer:*3) metallose

22. Siderosis is characterized

- 1) rusty deposits in the iris
  - 2) rust-colored spots in the lens
  - 3) yellowish-green deposits in the iris
  - 4) yellowish-green deposits in the lens
- Correct answer:*1.2

23. Sympathetic ophthalmia

- 1) sluggish fibrinous-plastic iridocyclitis in the injured eye
- 2) sluggish fibrinous-plastic iridocyclitis in an uninjured eye
- 3) sluggish fibrinous-plastic iridocyclitis in both eyes

*Correct answer:* 2) sluggish fibrinous-plastic iridocyclitis in an uninjured eye

24. The presence of blood in the anterior chamber of the eye is called

- 1) hemophthalmos
- 2) hypopyon
- 3) hyphema
- 4) endophthalmitis

*Correct answer:* 3) hyphema

25. Radical treatment of endophthalmitis consists of

- 1) prescribing corticosteroids
- 2) prescribing antibiotics
- 3) removal of the vitreous body
- 4) removal of the eyeball

*Correct answer:* 3) removal of the vitreous body

Open type tasks: **TOTAL 75 tasks\***

1. *Task.* After being injected with a needle into the center of the cornea, the patient lost his vision. What structures were injured? Why did I lose my vision?

*Reference.* Penetrating injury to the cornea may result in injury to the lens. Developing traumatic cataracts cause decreased vision.

2. *Task.* After falling from a swing, the child developed ptosis, exophthalmos, immobility of the eyeball, and dilated pupil of the left eye. What changes could occur in the orbit? Reasons for the changes?

*Reference.* The child has superior orbital fissure syndrome associated with a fracture of the base skull or hematoma in the area of the superior orbital fissure.

3. *Task.* How can we explain that choroiditis (inflammation of the choroid itself) can occur in isolation, while inflammation of the iris and ciliary body usually occur together?

*Reference.* Explained by the peculiarity of the blood supply: the choroid is supplied with blood from posterior short ciliary arteries, and the iris and ciliary body have a joint blood supply - from the posterior long ciliary arteries and anterior ciliary arteries (a continuation of the muscular arteries).

4. *Task.* After a traumatic brain injury, a patient began to complain of diplopia. Objectively: the eye is deviated medially, visual acuity of both eyes is 1.0. What is your presumptive diagnosis and recommended treatment?

*Reference.* Diagnosis: paralytic strabismus due to damage to the abducens nerve. Treatment by a neurologist is recommended. If there is no effect, but not earlier than a year later, surgery may be recommended.

5. *Task.* The patient has some difficulty in nasal breathing, periodically has purulent nasal discharge, and high fever. Two days ago pain appeared in the right

orbit and protrusion of the eyeball. Objectively: swelling and hyperemia of the eyelids, limitation of eye movements, swelling and hyperemia of the conjunctiva. Make a diagnosis, recommend additional examination, prescribe treatment.

*Reference.*Diagnosis: orbital phlegmon. The diagnosis is based on inflammatory swelling of the eyelids, restriction of eye movement, exophthalmos. Required: X-ray of the paranasal sinuses, consultation with a rhinologist. Differentiate with cavernous sinus thrombosis syndrome, which is characterized by bilateral ocular symptoms, the presence of mydriasis, and cerebral and meningeal symptoms. Treatment: antibiotics and sulfonamides locally and systemically (ampicillin, gentamicin, lincomycin), hospitalization in an otorhinolaryngological hospital and opening of the sinuses; if symptoms increase, opening and drainage of the orbit.

6. *Task.*The patient suffered from the flu. After this, pain appeared in the left eye and the eyelid drooped. Upon examination, ptosis, exophthalmos, and limited movement of the eyeball were detected. Make a diagnosis. What additional research is needed? Prescribe treatment.

*Reference.*Diagnosis: superior orbital fissure syndrome, apparently as a result of basal arachnoiditis. The diagnosis is based on ptosis, exophthalmos, paresis of the extraocular muscles. It is necessary to determine the sensitivity in the area of the 1st branch of the trigeminal nerve and examine it by a neurologist. Treatment: with a neurologist, consultation with an ophthalmologist.

7. *Task.*The patient has a traumatic brain injury. Examination revealed: unilateral ptosis, exophthalmos, ophthalmoplegia, mydriasis. What is the cause of these symptoms? Your actions?

*Reference.*The patient has superior orbital fissure syndrome, possible bone fracture base of the skull, displacement of bones in the area of the superior orbital fissure. Required: X-ray of the skull, CT scan of the orbit, consultation with a neurosurgeon.

8. *Task.*A 14-year-old girl came to the appointment with complaints of pain, redness, swelling, and a feeling of heat in the upper eyelid of the right eye. Objectively: severe swelling of the eyelid, the eye is closed, pain, hyperemia of the upper eyelid. From the anamnesis it was established that 3 days ago I plucked my eyebrows. Diagnosis? Treatment?

*Reference.*Diagnosis: abscess of the upper eyelid. Treatment: in the initial stage - UHF, dry warm. In case of fluctuation, open it and inject turunda with hypertonic sodium chloride solution into the wound. Dressing.

9. *Task.*The patient suddenly developed swelling of the upper eyelid of the right eye, local hyperemia at the root of the eyelash with a purulent head, and severe pain. Diagnosis? Treatment? *Reference.*Diagnosis: external stye of the upper eyelid of the right eye. Treatment: hair removal affected eyelash, 20% albucid solution 4 times a day, UHF, dry heat, 1% yellow mercury ointment or any eye ointment containing an antibacterial agent on the eyelids 2 times a day until the infiltrate resolves.

10. *Task.*The patient had constant lacrimation for a year. A few days ago, redness, sharp pain, and reactive swelling of the eyelids appeared at the inner corner of the eye. On palpation of the infiltrate zone there is sharp pain, no fluctuations, purulent discharge from the lacrimal openings. Diagnosis? Treatment?

*Reference.*Diagnosis: acute purulent dacryocystitis. Treatment: dry heat, UHF therapy, instillation of Albucid 20% 6-8 times a day. When fluctuations occur, open and drain. As the process subsides, perform dacryocystorhinostomy or dacryocystorhinodrainage.

eleven. *Task.* A 50-year-old patient underwent surgery to remove a chalazion of the lower eyelid through the conjunctiva. Three months later, a new growth similar to the previous one appeared in the same place, but faster growth was noted. The skin over the formation is easily hyperemic and thickened. The conjunctiva in the projection of the formation is scarred.

Diagnosis? Tactics?

*Reference.* Meibomian gland adenocarcinoma should be considered. Conduct radical removal of the tumor within healthy tissue and send the material for histological examination. If a positive result is obtained, refer the patient to an oncologist.

12. *Task.* A 30-year-old patient was involved in a car accident. Received multiple deep cuts to his face. PSO was performed with wound suturing. Complains of lacrimation and non-closure of the left palpebral fissure. Diagnosis? Tactics?

*Reference.* The patient has damage to the left facial nerve and left-sided lagophthalmos. For To prevent the development of xerosis of the eyeball, it is necessary to perform partial blepharorrhaphy. Refer for treatment to a neurologist.

13. *Task.* In the morning the patient woke up and discovered that he could not open his right eye due to purulent discharge that had glued his eyelashes together. When opening the palpebral fissure, it was discovered that the conjunctiva of all parts was sharply hyperemic, loosened, there was purulent discharge on the eyelashes and in the corners of the eye. Diagnosis? Prescribe treatment.

*Reference.* Diagnosis: acute purulent conjunctivitis. The presence of purulent discharge and hyperemia of the conjunctiva substantiates the diagnosis. Treatment: instill solutions of sulfonamides and disinfectants 5-6 times a day. It is advisable to conduct a bacteriological study to determine the pathogen and sensitivity to antibacterial drugs.

14. *Task.* In the summer, an outbreak of an eye disease occurred in a children's group. At the same time, several children's eyes turned red and profuse purulent discharge appeared. Objectively: the conjunctiva of the eyelids and eyeball is sharply hyperemic, there are isolated subconjunctival hemorrhages. Make a preliminary diagnosis. Prescribe treatment.

*Reference.* Diagnosis: acute epidemic Koch-Wicks conjunctivitis. Differentiate with adenoviral keratoconjunctivitis. The diagnosis of Koch-Wicks conjunctivitis confirms the presence of purulent discharge and hemorrhages in the conjunctiva. Bacterioscopic and bacteriological examination is necessary. Treatment: instill solutions of antibiotics, sulfonamides, and disinfectants 5-6 times a day. Carry out anti-epidemic measures in the outbreak, and provide preventive treatment to all contacts. After treatment, conduct a repeat bacterioscopic examination for the presence of the pathogen in order to exclude carriage.

15. *Task.* The patient, against the background of moderately severe catarrhal symptoms, developed pain and redness in both eyes in the pharynx. Upon examination, hyperemia of all parts of the conjunctiva, petechial conjunctival hemorrhages, and follicles were revealed.

Make a diagnosis.

*Reference.* Diagnosis: adenoviral keratoconjunctivitis, pharyngoconjunctival fever. The acute onset of the disease, catarrhal phenomena, the presence of follicles in the conjunctiva, hemorrhages, and pinpoint subepithelial infiltrates in the cornea justify the diagnosis.

16. *Task.* In kindergarten, one third of the children had red eyes and scanty mucopurulent discharge. Upon examination, attention was drawn to the presence of whitish films on the conjunctiva of the eyelids, which can be easily removed with a cotton swab. Diagnosis? Tactics? *Reference.* There is an epidemic of pneumococcal conjunctivitis in kindergarten, what is it about? indicates the presence of characteristic, easily removable films. Bacteriological examination will confirm the diagnosis. It is necessary to carry out quarantine measures and prescribe preventive instillations for children who do not have conjunctivitis. and therapeutic instillations for patients.

17. *Task.* You are an epidemiologist for the area. 6 cases of stage 1-2 trachoma were registered. Your tactics.

*Reference.* Organize a general inspection of the population, using the help of local executive power. If persons with stage 1 trachoma or those suspected of trachoma are identified, a dispensary registration with subsequent treatment is performed. Sanitation of the source of infection. Sanitary education - work.

18. *Task.* The patient has chronic tonsillitis. After its exacerbation against the background of acute respiratory infections pain appeared in the eye, and the eye turned red. Objectively: moderately severe symptoms of irritation; there is a grayish cloudiness in the cornea in the shape of a tree branch. The sensitivity of the cornea is reduced. Diagnosis? Differential diagnosis? Treatment?

*Reference.* Diagnosis: herpetic dendritic keratitis. The diagnosis is confirmed eye disease after exacerbation of tonsillitis. Differentiate with phlyctenulous keratitis. The diagnosis of herpetic keratitis will be confirmed by decreased sensitivity of the cornea and a tree-like form of opacification. Treatment: 1) antiviral drugs (interferon, interferonogens, kerecid, DNAase), 2) atropine, 3) B vitamins.

19. *Task.* The patient worked as a harvesting machine operator. Something got in my eye after which pain in the eye and redness of the eye appeared. Upon examination, clouding of the cornea and a yellow strip of pus at the bottom of the anterior chamber were detected. Diagnosis? More research? Treatment tactics?

*Reference.* Diagnosis: creeping ulcer of the cornea. The diagnosis confirms the typical medical history, presence of clouding in the cornea. Biomicroscopy is necessary - pay attention to the presence of hypopyon. Rinse the lacrimal ducts to exclude dacryocystitis. Treatment: anti-inflammatory drugs (parabulbar antibiotics, frequent instillation of disinfectant drops), if there is a danger of perforation - therapeutic keratoplasty.

20. *Task.* The patient, while walking 3 days ago, came across a spruce branch and did not seek medical help. At the time of examination, there were complaints of photophobia, lacrimation, blepharospasm, foreign body sensation, redness of the left eye, pain, decreased vision. Objectively: swelling of the upper eyelid, mixed injection, on the cornea at 6 o'clock, 4 mm from the limbus, a whitish infiltrate measuring 2 mm in diameter, around there is swelling, involving the optical zone. Diagnosis? More research? Treatment tactics?

*Reference.* Diagnosis: traumatic exogenous keratitis. Research using the method side illumination with preliminary fluorescein staining, biomicroscopy. Treatment: instillation of epithelializing agents (korneregel, balarpan, quinine, catachrome), antibiotics (floxal, tsipromed drops, netromycin, gentamicin in subbulbar injections), sulfonamide drugs in drops.

21. *Task.* After an acute respiratory illness, the patient developed pain in the eye and the eye became red. There was a history of purulent discharge from the right nostril. Was treated by an ENT specialist. The process repeated itself. Objectively: OD - pericorneal injection,



the iris is discolored, the pupil is narrow, painful on palpation, IOP is reduced. Make a diagnosis. Make a differential diagnosis. Prescribe treatment. *Reference.*Diagnosis: acute iridocyclitis due to focal infection (sinusogenic). The diagnosis is confirmed by pain in the eye, pericorneal injection, and changes in the color of the iris. A history of inflammation in the paranasal sinus. Additional examination is necessary: x-ray of the sinuses, consultation with a pediatrician and dentist.

Treatment: rehabilitation of the paranasal sinuses, mydriatics, corticosteroid hormones locally, absorbable agents.

22. *Task.* The patient suffered inflammation of the eye without severe pain. There was practically no treatment. During a medical examination at the plant, a decrease in visual acuity in the right eye was revealed. Objectively: upon examination, slight irritation of the eye appears, the anterior chamber is small, the pupil is narrow and irregular in shape. The eye is denser than normal. Make a diagnosis. Carry out differential diagnosis. Prescribe treatment. *Reference.*Diagnosis: secondary uveal glaucoma. The diagnosis is confirmed by anamnesis, increased intraocular pressure, shredding of the anterior chamber, deformation of the pupil. Differentiate from secondary neoplastic glaucoma. Required: echodiagnosis, diaphanoscopy. Treatment: local and general anti-inflammatory, antiglaucoma surgery, laser iridectomy.

23. *Task.* A 63-year-old patient experienced a gradually painless decrease in vision. For 3 days he has noticed pain and redness in the right eye. Biomicroscopy reveals dilation of the episcleral veins, swelling of the corneal epithelium, a decrease in the depth of the anterior chamber, the pupil area is gray with a pearlescent tint, and the pink fundus reflex is absent. What is your presumptive diagnosis? Treatment recommendations?

*Reference.*Diagnosis: immature swelling cataract, secondary phacomorphic glaucoma. Recommended: extracapsular cataract extraction.

24. *Task.* A man visited an ophthalmologist complaining of eye pain. Objectively: IOP 35 mm. Hg Art., anterior segment of the eye without features. In the fundus there is retinal detachment in the lower half. Diaphanoscopy examination is negative in the lower-outer region. What is your presumptive diagnosis? Treatment recommendations? *Reference.* Diagnosis: melanoma, secondary neoplastic glaucoma. Recommended: enucleation with histological examination of the obtained material.

25. *Task.* A patient suffering from rheumatism and recurrent iridocyclitis of the right eye developed pain in the eye. A tonometric study revealed an increase in IOP to 30 mm Hg. Art. With side lighting – weakening of the pupil's reaction to light, exudate on the lens capsule. What is your diagnosis? What causes the increase in IOP? *Reference.*Diagnosis: secondary inflammatory glaucoma. The increase in IOP is due to the development of pupillary block, which impedes the outflow of intraocular fluid.

26. *Task.* A patient seen by an ophthalmologist for cataracts in the left eye complains of pain in the left eye. Objectively: congestive injection of the eyeball, decreased depth of the anterior chamber, gray lens with a pearlescent tint. IOP – 32 mm. What is your diagnosis? Treatment recommendations?

*Reference.*Diagnosis: secondary phacomorphic glaucoma. extracapsular cataract extraction.

Recommendations:

27. *Task.* A 45-year-old man complains of pain and decreased vision in the right eye. History: 3 days ago, a severe blow to the eye. Objectively: IOP 34 mm Hg. Art.,

the cornea is transparent, the anterior chamber is deep (4 mm), phaco- and iridodonesis are noted. What is your diagnosis? Recommendations?

*Reference.*Diagnosis: secondary phacotopic glaucoma of the right eye. Recommended: performing fistulizing surgery.

28. *Task.* A 68-year-old man, after prolonged work with his head tilted forward, developed pain in his left eye, radiating to his head. Objectively: injection of the superficial vessels of the eyeball, swelling of the corneal epithelium, decreased depth of the anterior chamber, pupil 6 mm, hard on palpation of the eyes. What is your presumptive diagnosis? What research methods will confirm it? Treatment recommendations?

*Reference.*Diagnosis: acute attack of angle-closure glaucoma. To confirm Diagnosis requires tonometry and gonioscopy. Treatment: according to the treatment regimen for an acute attack of angle-closure glaucoma.

29. *Task.* A patient was delivered by ambulance with complaints of headache, a feeling of dilation in the right eye, nausea, and vomiting. Objectively:  $t=36.6^{\circ}\text{C}$ , the abdomen is soft and painless, stool is normal. Redness of the right eye and dilation of the pupil are noted. What disease can you suspect? Which examination method will help you diagnose this disease? Recommendations?

*Reference.*Diagnosis: acute attack of angle-closure glaucoma. It is necessary to carry out tonometry, gonioscopy. Recommendations: application of a treatment regimen for an acute attack of angle-closure glaucoma. Treatment is inpatient. If there is no IOP compensation within 24 hours, surgical treatment is required.

thirty. *Task.* At an industrial enterprise in your area, there is a high percentage of eye microtrauma and a high percentage of disability. What are your actions as a sanitary doctor?

*Reference.*It is necessary to check compliance with safety precautions, use individual and collective eye protection. Check at the emergency room for the timeliness and correctness of removal of foreign bodies of the cornea.

31. *Task.* The patient went to the emergency room with complaints of pain in the eye, blurred vision as a result of an industrial injury (a fragment from a part hit the eye). Objectively: eyelid hematoma, subconjunctival hemorrhage. The cornea is transparent, palpation is painless, IOP is normal. What is your presumptive diagnosis? Additional research methods?

*Reference.*Hematoma of the eyelids and hemorrhage under the conjunctiva indicate blunt eye damage (contusion). The fragment cannot give such an ophthalmological picture. Most likely a domestic injury. Radiography of the orbits is necessary.

32. *Task.* While doing agricultural work, a worker injured his eye with a spike of wheat. Not treated. After 3 days, pain in the eye, lacrimation, photophobia, redness of the eye, clouding of the cornea, and blurred vision appeared. What is your presumptive diagnosis? Your actions? *Reference.*Diagnosis: traumatic keratitis. The diagnosis is confirmed by symptoms of irritation, clouding of the cornea (infiltrate). It is necessary to conduct a bacteriological study. Urgent qualified assistance is required, hospitalization of the patient in an eye hospital.

33. *Task.* First aid for eye burns with alkali?

*Reference.*Abundant rinsing with water, instillation of oily substances (fish oil, vitamins "A" or "D" in oil). The bandage is contraindicated!

34. *Task.* The electric welder went to the emergency room with complaints of pain in the eyes, lacrimation, photophobia, and redness of the eyes. Objectively: the cornea is transparent. What is your presumptive diagnosis? Prescribe treatment.

*Reference.* Diagnosis: electroophthalmia. Recommended frequent burying disinfectant solutions with the addition of anesthetics (dicaine, trimicaine, etc.). Instillation of oil solutions (vitamin A).

35. *Task.* First aid for extensive penetrating corneal injury? *Reference.* Administration of painkillers, antitetanus serum, application aseptic binocular dressing and transporting the patient to a specialized hospital while lying down.

36. *Task.* The patient complains of photophobia and decreased vision in the right eye. A month ago, my left eye was injured - a penetrating wound to the sclera. Objectively: left eye - mixed injection remains, there are precipitates on the posterior surface of the cornea, the pupil is irregular in shape, the fundus reflex is dull. Additional research methods? Diagnosis?

*Reference.* Biomicroscopy of the right eye is necessary. Diagnosis: sympathetic inflammation right eye, sympathetic inflammation of the left.

37. *Task.* While working in the garden, the patient got something in his left eye. Objectively: blepharospasm, lacrimation, conjunctival injection, transparent cornea, foreign body (mote) on the conjunctiva. Diagnosis? Need help?

*Reference.* Diagnosis: foreign body of the conjunctiva of the left eye. It is necessary to rinse the eye antiseptic solution, remove the foreign body with a cotton swab.

38. *Task.* The patient has a penetrating wound of the sclera and an intraocular foreign body. An operation was performed - primary surgical treatment, the foreign body was removed. On the 2nd day after surgery, hypopyon appeared and the fundus reflex was yellow. Additional research methods? Diagnosis? Treatment?

*Reference.* Additionally, ultrasound is required study. Diagnosis: endophthalmitis. Treatment: broad-spectrum antibiotics locally and intramuscularly. If there is no effect - enucleation.

39. *Task.* The patient got something in his right eye while working with an emery wheel. Objectively: blepharospasm, lacrimation, foreign body (scale) on the cornea. Diagnosis? Need help?

*Reference.* Diagnosis: foreign body of the cornea. Required: instill the solution into the eye antiseptic, remove the foreign body with a spear under a slit lamp and prescribe an antibacterial ointment.

40. *Task.* The patient developed endophthalmitis after a trauma to the right eye. Despite the treatment, the process progresses: eye immobility and severe swelling have appeared. Diagnosis? Treatment?

*Reference.* Diagnosis: panophthalmitis. Treatment: evisceration.

41. *Task.* The patient has a history of injury to his right eye - he hit a chisel with a hammer. was not treated. Currently: decreased visual acuity, the eye is calm, the cornea is transparent, the iris has a rusty tint, clouding under the posterior capsule of the lens, dull fundus reflex. Examination plan? Diagnosis? Treatment?

*Reference.* Examination plan: ophthalmoscopy, X-ray localization of a foreign body Komberg-Baltin method, tonometry. Diagnosis: metallosis, siderosis, foreign body in the right eye. Treatment: surgical – removal of the foreign body.

42. *Task.* A patient suffering from hypertension complains of sudden blindness in the right eye. Visual acuity 0.01. Diagnosis? Differential diagnosis? Treatment?

*Reference.* Diagnosis: acute obstruction central arteries retina. Differentiate with thrombosis of the central retinal vein. Required: determination of the visual field, campimetry, ophthalmoscopy, fluorescein angiography, blood pressure measurement and examination by a therapist. Treatment: vasodilators, direct anticoagulants, thrombolytic drugs, decongestants.

43 *Task.* A 45-year-old patient complains of decreased visual acuity when reading. The ophthalmologist discovered the following ophthalmological picture: the optic disc is slightly enlarged in size, slightly protruding, the color is dirty pink, the veins are dilated and tortuous. There are single hemorrhages on the disc. Diagnosis? Differential diagnosis? Treatment? *Reference.* Diagnosis: congestive optic disc. Differentiate with presbyopia. In a presbyope without any underlying disease, the optic disc is normal. It is necessary to determine visual acuity and visual field, an x-ray of the skull and paranasal sinuses, and consult a neurologist. Treatment: if the diagnosis of “stagnant disc” is confirmed, treatment is carried out by a neurologist or neurosurgeon.

44. Treatment of eyelid

abscess *Correct answer:*

The complex of conservative therapy includes:

UHF procedures. Physiotherapeutic methodology ultra-high frequency exposure is thermal treatment with an electromagnetic field. UHF helps reduce inflammation, relieve pain, reduce swelling, and speed up wound healing.

Local dry warm compresses also help alleviate the patient's condition and reduce the severity of inflammation.

Eye drops with antibiotics or sulfonamides destroy pathogenic microflora and prevent the spread of the pathological process. For the same purpose, ointments with antibiotics are prescribed, which are applied to the lower eyelid at night.

Antihistamines are prescribed to relieve swelling and irritation. Antibiotic injections are prescribed in the presence of an inflammatory process in the body.

If conservative therapy does not stop the development of the inflammatory process and a cavity filled with pus has formed, then the eyelid abscess is opened. The presence of such a cavity (fluctuation) is confirmed by the results of magnetic resonance therapy.

45. Koch-Wicks principles of treatment of acute epidemic conjunctivitis

*Correct answer:*

antipyretics and drinking plenty of fluids (if there is a high temperature) - at elevated temperatures, itching and burning in the eyes may increase due to dryness of the conjunctiva, so it is recommended to drink more fluids and instill moisturizing drops into the eyes; severe swelling of the eyelids and conjunctiva is relieved with decongestants; daily eye care should include a procedure for cleaning from purulent discharge - for this, a cotton swab must be moistened in a warm solution of furatsilin and carefully cleanse the eyes of pus and mucus, moving from the outside

eyes to inner; every three to four hours it is necessary to drip an antibacterial agent, it will be prescribed by a doctor who treats epidemic conjunctivitis, taking into account data on antibiotic resistance; For the treatment of acute bacterial epidemic conjunctivitis, antibacterial ointments are used, which effectively relieve swelling and redness of the conjunctiva, soften the skin of the eyelids, and have an antibacterial effect.

#### 46. Principles of treatment of pneumococcal conjunctivitis

*Correct answer:*

Sanitary and hygienic measures are prescribed, including daily change of towels and bed linen, especially pillowcases.

In the first days, the conjunctival cavity is frequently washed with antiseptic solutions (potassium permanganate, furacillin). Sodium sulfacyl solution or antibiotic solutions are instilled into the eye 6 times a day.

Sometimes, ointments (tetracycline, erythromycin, syntomycin) are placed into the conjunctival cavity.

For the purpose of prevention, sulfacyl sodium is recommended for instillation into the eyes for 2-3 days for all children and adults who have been in contact with a patient with pneumococcal conjunctivitis.

#### 47. Principles of treatment of diphtheria conjunctivitis

*Correct answer:*

If specific signs of the disease are detected in the patient, hospitalization in the infectious diseases department is indicated. Etiotropic therapy is reduced to intramuscular administration of anti-diphtheria serum. For local damage to the conjunctiva, a one-time use of serum in a dose of 10-20 thousand IU is recommended. The treatment complex includes: Antibacterial agents. The feasibility of systemic use of antibiotics from the group of penicillins or macrolides has been proven. Every 2-3 hours, benzylpenicillin solution in the form of eye drops is instilled into the conjunctival cavity. Erythromycin ointment is placed under the eyelids 2-3 times a day.

Keratoprotectors. Drugs in this group are prescribed when signs of damage to the cornea are detected. Corneal regeneration is promoted by medications based on pantothenic acid. It should be noted that keratoprotectors in the form of ointment or gel should be used no earlier than 15-20 minutes after instillation of the drops.

Antiseptics. Antiseptic solutions are used to wash the conjunctival cavity 6-8 times a day. Medicines increase the effectiveness of local use of antibiotics and have anti-inflammatory and immunoadjuvant effects. Vitamin therapy. For diphtheria conjunctivitis, eye drops containing ascorbic acid and riboflavin are recommended. They are prepared on the basis of glucose immediately before instillation. Additionally, a 3% solution of retinol acetate is prescribed for topical application.

#### 48. Principles of treatment of adenoviral conjunctivitis

*Correct answer:*

Treatment of adenoviral conjunctivitis carry out outpatient, using antiviral agents. Locally prescribed instillation interferon And deoxyribonuclease in drops 6-8 times a day in the first week of the disease and 2-3 times a day during the second week. Placing ointments behind the eyelids (tebrofenova, florenal, bonaftone, rhiodoxol, adimaleva) is also used as antiviral therapy. To prevent secondary infection, it is advisable to use antibacterial eye drops and ointments. Until full clinical

To recover from adenoviral conjunctivitis, taking antihistamines is indicated. To prevent the development of xerophthalmia, artificial tear substitutes (for example, carbomer) are used.

49. Principles of treatment of phlegmon of the lacrimal

sac *Correct answer:*

Conservative therapy consists of prescribing broad-spectrum antibacterial drugs. Route of administration: intramuscular in combination with instillation into the conjunctival cavity. Non-steroidal anti-inflammatory drugs are indicated for a short course (5-7 days). In case of complicated pathology, local forms of glucocorticosteroids are included in the complex of treatment measures. Physiotherapeutic treatment is based on the regional application of dry heat and the administration of UHF to the affected area. In case of already formed fluctuating phlegmon, its percutaneous opening and drainage is indicated. The phlegmon cavity is washed with antibacterial agents and antiseptic solutions. Perform daily dressings with hypertonic sodium chloride solution. After stopping the acute process, endonasal dacryocystorhinostomy is performed to restore the physiological pathway of tear outflow. In case of post-traumatic retraction of tissues of the medial corner of the eye and damage to the tubules, multi-stage reconstructive surgical interventions are performed. If there is no effect from the prescribed treatment and frequent relapses of the disease, extirpation of the lacrimal sac is performed.

50. Principles of treatment of purulent ulcers of the

cornea *Correct answer:*

Ophthalmic manipulations. In order to prevent the deepening and expansion of a corneal ulcer, the defect is shaded with an alcohol solution of brilliant green or iodine tincture, diathermo- or laser coagulation of the ulcer surface. In case of a corneal ulcer caused by dacryocystitis, it is necessary to urgently rinse the nasolacrimal canal or perform an emergency dacryocystorhinostomy to eliminate the purulent focus in close proximity to the cornea.

Drug therapy. Depending on the etiology of the corneal ulcer, specific (antibacterial, antiviral, antiparasitic, antifungal) therapy is prescribed. Pathogenetic therapy for corneal ulcers includes the prescription of mydriatics, metabolic, anti-inflammatory, antiallergic, immunomodulatory, and antihypertensive drugs. Medicines are administered locally - in the form of instillations, ointment applications, subconjunctival, parabolbar injections, as well as systemically - intramuscularly and intravenously.

Physiotherapy. As the corneal ulcer clears, absorbable physiotherapy is prescribed to stimulate reparative processes and prevent the formation of a rough scar: magnetic therapy, electrophoresis, ultraphonophoresis.

Surgery. If there is a threat of perforation of a corneal ulcer, penetrating or layered keratoplasty is indicated. Once the ulcer has healed, excimer laser removal of superficial corneal scars may be required.

51. First aid for acute iridocyclitis *Correct*

*answer:*

First of all, the doctor must conduct an examination. The main symptom that allows you to distinguish iridocyclitis from iritis is ciliary pain (occurs when palpating the eyeball through the eyelid). Such pain is present for the reason that the ciliary body, involved in the process of inflammation in iridocyclitis, is adjacent to the sclera and is easily

presses when touched. With iritis (isolated inflammation of the iris), there is no pain, since the iris is separated from the wall of the eye by aqueous humor.

In addition, the symptoms of iridocyclitis are more pronounced. The first step is to drip a solution of Dexazone (0.1%) into the eyes, as well as a solution of Atropine or Homatropine (1%). If the patient complains of severe pain, Dicain should also be instilled (0.25% drops or 0.5% solution). A bandage is placed over the eye to protect it from light and cold. For further treatment, the patient is taken to the hospital.

## 52. Differential diagnosis of acute iridocyclitis and acute attack of angle-closure glaucoma

*Correct answer:*

Acute attack of glaucoma	Acute iridocyclitis
1. Complaints about rainbow circles when looking at the light	1. There are no rainbow circles
2. Referring pain predominates	2. Pain in the eye predominates
3. Often preceded by prodromal attacks	3. The eye becomes ill with sudden attacks
4. Pericorneal injection is weakly expressed, injection of large branches of the anterior ciliary vessels predominates	4. Pericorneal injection predominates
5. The sensitivity of the cornea is reduced. Corneal edema with a rough surface, no precipitates.	5. The sensitivity of the cornea is not changed. The cornea is transparent, with a smooth surface + precipitates
6. The anterior chamber is shallow	6. Anterior chamber of medium depth or deep
7. The pupil is wider than on the other eye	7. The pupil is constricted (if it has not been dilated by mydriatics).
8. IOP increased	8. IOP is often normal, decreased, only sometimes increased
9. The iris is not changed.	9. The iris is flaccid, swollen, blurry pattern.

## 53. First aid for an acute attack of angle-closure glaucoma *Correct answer:*

The main goal is to reduce intraocular pressure and normalize blood circulation in the eye to restore nutrition to the retina and optic nerve. For this purpose, 1% pilocarpine solution is prescribed every 15, then 30 minutes. 2 drops, promedol is injected subcutaneously. 40-60 mg of furosemide is given orally. The administration of sedatives is recommended. If there is no effect during treatment for 3-4 hours, then it is recommended to administer a "lytic mixture" intramuscularly (1 ml of 2.5% aminazine solution, 1 ml of 2.5% pipolfen, 1 ml of 2% promedol solution). A saline laxative and hot foot baths are indicated. Hospitalization in a specialized hospital.

#### 54. Clinical picture of acute iridocyclitis

*Correct answer:*

the formation of a clearly visible vascular network around the cornea (looks like a small ring of a pinkish color or a darker, red hue);  
swelling of the eyelids, especially with the complex nature of the inflammatory condition; the formation of precipitates (inflammatory accumulations of fibrin in the front of the eye, look like small whitish spots on the cornea, in front of the iris);

change in the shape of the iris;

change in the shade of the iris (the phenomenon of partial heterochromia occurs, when the shade of the cornea on one side is partially different from the shade of the cornea on the healthy eye);

clouding of the cornea;

pain in the eye (moderate in nature with a relatively mild course and high intensity if the disease is severe);

surges in intraocular pressure: manifested by fog before the eyes, painful sensations in the eye, headaches;

visual impairment: the appearance of a veil in the field of vision, impaired perception of objects;

photophobia.

#### 55. Clinical picture of an acute attack of angle-closure glaucoma

*Correct answer:*

The most pronounced symptoms of angle-closure glaucoma become during an acute attack. A person experiences excruciating pain in the eye, head and even jaw, vision becomes very blurred, rainbow circles in the field of vision become brighter. Slit lamp examination reveals corneal opacification. The eyeball is hard to the touch, the pupil is dilated, there is no reaction to light.

In addition to ophthalmological symptoms, nausea and vomiting are also noted, and the number of heart contractions decreases. General symptoms are usually more pronounced during an attack. Patients experience anxiety and pain in the heart and abdomen, which can be confused with symptoms of cardiovascular disease.

In case of an acute attack of glaucoma, a person needs urgent medical attention. Such a patient needs to be hospitalized and treated minute by minute.

#### 56. Clinical picture of acute obstruction of the central retinal artery *Correct answer:*

Occlusion occurs suddenly due to blocking of the central trunk of the artery by a thrombus, embolus, or sharp spasm of the vascular wall and is accompanied by a rapid decrease in vision of the corresponding eye. The disease occurs in patients with hypertension, in people of different ages, suffering from endocarditis, heart disease, and chronic infectious diseases. In case of acute obstruction of the central retinal artery, a dark red macula resembling a cherry pit stands out in the fundus against the background of a pale, swollen retina, resembling a cherry pit (the "cherry pit" symptom). The disease is usually unilateral. The prognosis for occlusion due to embolism is usually poor. It is extremely rare to restore vision. With arterial spasm, restoration of visual functions depends on the strength of the spasm, its duration, timely provision of first aid and further treatment.

#### 57. Clinical picture of central retinal vein thrombosis



*Correct answer:*

Thrombosis usually occurs in elderly people suffering from hypertension, atherosclerosis, dysfunction of the blood coagulation system, chronic sepsis and other diseases. Thrombosis develops as suddenly as acute obstruction of the central retinal artery and is accompanied by a sharp drop in vision, but usually not reaching complete blindness. With ophthalmoscopy, a characteristic pattern of retinal hemorrhages is visible in the fundus, resembling a crushed tomato. The optic disc is swollen, dark red in color, its borders are blurred. The veins are dark, dilated, tortuous, in places lost in the edematous retina; arteries are narrowed. The process is most often one-sided, but can occur in both eyes (often not at the same time). The prognosis is poor, but more favorable than with acute obstruction of the central retinal artery. Subsequently, partial atrophy of the optic nerve is observed; Sometimes secondary glaucoma occurs.

58. First aid for acute obstruction of the central retinal artery *Correct answer:*

With arterial spasm, restoration of visual functions depends on the strength of the spasm, its duration, timely provision of first aid and further treatment. In the acute period of occlusion of the central retinal artery, intravenous administration of 10 ml of a 2.4% solution of aminophylline per 20 ml of a 20% glucose solution is urgently prescribed to relieve vasospasm. The drug should be administered slowly (over about 5 minutes) with the patient lying down. 2 ml of a 2% papaverine solution is injected subcutaneously, and 0.1 g of nicotinic acid is given orally. Place 2-3 drops of a 1% solution of nitroglycerin on sugar (or a 0.5 mg tablet) under the tongue. A cotton wool moistened with 3-4 drops of amyl nitrite is brought to the patient's nose for 1-2 minutes. Inhalation of carbogen (a mixture of 10% carbon dioxide and 90% oxygen) for 2 minutes produces a strong vasodilator effect. To reduce intraocular pressure and improve hemodynamics, a solution of 0.5% timolol is instilled locally and glycerol or diacarb is prescribed. In a later period, drugs are prescribed that dilate blood vessels and improve metabolic processes.

59. First aid for thrombosis of the central retinal vein

*Correct answer:*

Treatment is effective if started in the first days of the disease. Immediately begin intravenous administration of 10 ml of a 2.4% aminophylline solution per 20 ml of a 20% glucose solution; the drug is administered over approximately 5 minutes with the patient lying down. 10 ml of 25% magnesium sulfate solution is injected intramuscularly. Leeches on the temple and a hot foot bath are indicated. 2000 units of heparin, which is a direct anticoagulant, are administered retrobulbarically in combination with dexazone solution to create local hypocoagulation. Drugs that strengthen the vascular wall are prescribed: rutin and ascorbic acid. Medical leeches, whose hirudin dissolves blood clots, are widely used. Vitamins A, B, B2, and fibrinolysin are prescribed. In recent years, streptokinase, streptodectase, hemase (prourokinase), and plasminogen have been successfully used. In the long-term period, laser coagulation is performed, which blocks the formation of shunts of the paramacular capillary network and thereby stops the release of the liquid part of the blood into the macular zone.

60. Clinical signs of superior orbital fissure syndrome

*Correct answer:*

The following pass through the superior orbital fissure: the inferior and superior veins, the abducens nerve, the trochlear nerve, the oculomotor nerve, the first branch of the fifth nerve.

Superior orbital fissure syndrome is a unilateral lesion of the 3,4,6 and first branches of the fifth nerve. Main causes: fractures, orbital injuries, tumors, osteomyelitis,

meningitis, inflammation of the arachnoid membrane. Symptoms: external ophthalmoplegia (paralysis of all muscles innervated by the oculomotor nerve) and internal ophthalmoplegia (paralysis of the muscles of the constrictor pupil and ciliary muscle); ptosis, exophthalmos, mydriasis (pupil dilation); pain and decreased sensitivity in the area of innervation of the 1st branch of the 5th pair (cornea, upper eyelid, upper half of the nose).

#### 61. First aid for injuries of the eyelids and lacrimal organs

*Correct answer:*

Wounds of the eyelids can be superficial (not through), involving only the skin and muscle layer, or deep (including through), involving all layers of the eyelid, without damage or with damage to its free edge (eyelid rupture). A tear in the eyelid at the canthus is called a partial avulsion. There are also complete separations of the eyelids. Horizontal wounds of the eyelids are usually closed, while vertical wounds are gaping. Any gaping eyelid wound requires urgent surgical treatment. The exception is for wounds up to 1 cm, if the line of damage coincides with the course of the muscle fibers (they do not gape). It is also possible to apply primary delayed sutures (2-4 days after injury) in the absence of signs of infection and inflammation of the wound.

If there is a tear in the eyelid, the first suture is placed on the intermarginal edge (to compare it). Next, two layers of sutures are placed on the eyelid (one on the conjunctival side, the other on the skin side). When the eyelid is torn off at the outer (or inner) corner of the palpebral fissure, it is necessary first of all to sew the torn tissue to the commissure of the eyelids.

Wounds of the eyelids at the inner canthus are often accompanied by damage to the lacrimal canaliculi. PSO of such a wound should only be carried out by a trained ophthalmic surgeon; the unit doctor should not suture such a wound on his own. If there is a defect in the tissue of the eyelid that does not allow the edges of the wound to adapt, it is recommended to resort to the application of situational (guide) sutures, allowing to bring the edges of the wound closer together and give them more or less correct position. If it is impossible to apply such sutures, the edges of the wound are brought together with strips of adhesive tape.

#### 62. First aid for non-penetrating eye injuries *Correct*

*answer:*

Non-penetrating injuries - irritation of the mucous membrane of the eye, lacrimation, photophobia, pain, sometimes a significant decrease in vision when the process is localized in the optical zone.

The upper and lower eyelids are everted to identify foreign bodies on the conjunctiva of the eyelids and in the fornix. A foreign body is removed from the cornea using a spear, chisel, or bur in the emergency room. In cases of a deep-lying fragment and its partial exit into the anterior chamber, it is better to perform the operation in a hospital setting, using appropriate surgical techniques.

Non-perforated corneal wounds can have different shapes, depths and locations; the need for surgical treatment is decided individually. To relieve pain, instill a 0.5% dicaine solution. Prevention of infectious complications: 30% sodium sulfacyl solution or sulfacyl ointment; 0.25% solution of chloramphenicol, or chloramphenicol ointment. After applying an aseptic dressing, the patient must be taken to a specialized hospital.

#### 63. First aid for penetrating eye injuries *Correct*

*answer:*

For perforated wounds, antitetanus serum is administered and the wound is treated surgically. In the event of a secondary infection, as well as in order to prevent it, antibiotics and sulfonamides are used locally in the form of instillations, retro- and parabolbar injections, etc. If the cornea is perforated in

the central zone is prescribed drugs that dilate the pupil (0.5-1% solution of atropine sulfate, 0.25% solution of scopolamine, etc.), for corneal-scleral wounds, instillations of mydriatic drugs (1.2.6% solution of pilocarpine). In some cases (for example, to prevent sympathetic inflammation), corticosteroids are used topically.

64. First aid for thermal burns of the eyes

*Correct answer:*

1) calm down, relieve pain (0.5% novocaine solution); 2) rinsing the conjunctival cavity in a stream, in the direction from the inner corner of the eye to the outer, while pinching the lacrimal canaliculi, rinse all the fornix; 3) to prevent the eyelids from sticking to the eyeball - applying ointments with antiseptics, a/b, sulfonamides; 4) measures aimed at preventing tetanus; 5) urgently send to the emergency room.

66. First aid for chemical eye burns *Correct*

*answer:*

The main measure in providing first aid for chemical burns to the eyes is immediate and abundant rinsing of the eyes with running water. Open the eyelids and rinse the eye for 10-15 minutes with a gentle stream of running water to remove the chemical. You should not waste time searching for a neutralizer, since abundantly washing your eyes with running water is much more effective.

67. Difference between acid and alkaline eye

burns *Correct answer:*

Alkali burns are aggressive; liquefaction necrosis develops, the substance is detected in the moisture of the anterior chamber within 3-5 minutes, the severity is determined after a few days. Acidic - less aggressive, coagulative necrosis develops, the severity of the course is determined in the first hours.

68. Metallosis of the eye:

treatment. *Correct answer:*

Treatment of patients with ocular metallosis is carried out in two stages. First, surgical removal of the foreign body from the orbital cavity is indicated. If there is an inflammatory reaction from the eye membranes, a short course of antibiotics and glucocorticosteroids is required. The duration of conservative therapy is 5-7 days. If there is a high risk of narrowing of the pupillary opening, instillations of mydriatics are prescribed. Additionally, intravenous administration of proteolysis inhibitors and vitamin therapy can be used. The use of unithiol ensures the binding of toxic metal products with their subsequent conversion into inactive compounds. The effectiveness of potassium iodide has been proven only in stage 1, and to a lesser extent, stage 2 of the disease.

The tactics for managing patients at the next stage is determined by the nature of secondary changes in the eye. The development of cataracts requires phacoemulsification followed by intraocular lens (IOL) implantation. If symptoms of ocular hypertension occur, antihypertensive therapy is prescribed. In the case of secondary glaucoma, conservative treatment is ineffective, so surgical restoration of the outflow tract of intraocular fluid is indicated. At the first signs of retinal detachment, laser coagulation is performed. With severe destruction of the vitreous body, vitreolysis is performed. Total lesion requires vitrectomy.

69. Traumatic cataract: symptoms, treatment

Correct answer:

An obvious symptom of the pathology is a recent eye injury. If, after damage to the organs of vision, the patient feels discomfort in the eyes, makes an effort to read literature, and "floaters" appear before the eyes, there is a high probability that these are the first signs of cataracts as a result of injury. There may also be other signs: the picture doubles, halos appear over well-lit objects, sensitivity to bright light, decreased contrast or brightness of the picture, the pupil acquires an unusual color, complete blindness.

The method of treating cataracts resulting from eye injury depends on the severity of the damage received and the degree of clouding of the natural lens. The doctor's primary task is to eliminate the consequences of the injury and the resulting inflammation. After this, the cataract itself is removed. The exception is chemical burns, when it is necessary to quickly take measures to preserve the patient's vision.

70. Complications of penetrating eye injuries

Correct answer:

Local: endophthalmitis, panophthalmitis, chalcosis, siderosis, traumatic cataract, hemorrhages in the vitreous body, retina. General: sepsis, tetanus, gas gangrene, meningitis, encephalitis, sinus thrombosis.

71. Traumatic iridocyclitis: stages

Correct answer:

Serous, purulent (purulent iridocyclitis, endophthalmitis, panophthalmitis), fibrinous-plastic iridocyclitis

72. Sympathetic ophthalmia: prevention, treatment.

Correct answer:

Sympathetic inflammation (sympathetic ophthalmia) is a chronic malignant inflammation of the vascular tract of an uninjured eye, which develops in the presence of sympathetic inflammation in the injured eye (iridocyclitis in the injured eye).

GCS locally and orally (dexamethasone in the form of instillations, subconjunctival and parabolbar), NSAIDs (indomethacin, ibuprofen); AB injection intramuscularly and subconjunctivally; desensitizing agents; local mydriatics; cytostatics (cyclophosphamide).

Prevention: timely treatment (including surgery) of various lesions of the organ of vision (qualified treatment of wounds, removal of foreign bodies, etc.); removal of the blind traumatic eye, which is a source of autosensitization, if the operation was performed within 14 days after the injury. If signs of sympathetic ophthalmia appear in a healthy eye, the injured eye, if it is not blind, is not removed, because the prognosis of sympathetic ophthalmia is always very difficult and the vision of the injured eye may subsequently be higher than that of a previously healthy eye.

73. Traumatic hemophthalmos: first aid, treatment.

Correct answer:

In case of sudden clouding or the onset of sharp blurred vision, flashing "floaters" or reddish spots, before contacting an ophthalmologist, you should: Lay the patient down with the head elevated at an angle of 45°. Apply a gauze bandage soaked in cold water that does not allow light to pass through for 2-3 hours. Immediately stop taking anticoagulants or antiplatelet agents. If blood pressure is high, take an antihypertensive drug. After an initial consultation and examination for

to stop bleeding, instill a 3% solution of calcium chloride into the eyes and perform an intramuscular injection of a 10% solution of calcium gluconate.

To eliminate the consequences of more severe hemophthalmos, treatment is carried out in full. Immediately after the diagnosis, a drug therapy plan is drawn up, aimed at resolving hemorrhages and strengthening the vascular walls. If necessary, it is supplemented with laser therapy or surgical methods.

The drug therapy plan may include taking: vitamin preparations (vitamins C, PP and group B); antioxidants (Mexidol, Emoxipin, etc.); various hemostatic agents; tissue plasminogen activators (Alteplase); prourokinase (from 3 to 28 days); vasodilating antiplatelet agents (Trental, Agapurin); angioprotectors (Parmidin, Dicynon, Doxium). To prevent thrombosis and improve the fibrinolytic properties of blood, Heparin, Divascan or Peritol can be prescribed. If necessary, parabolbar administration of enzymes (Collalysin, Unitol, Papin, Protolysin) with fibrinolytic properties is carried out.

74. Prevention of damage to the eye and its appendages

Correct answer:

Major eye injuries can be prevented by wearing safety glasses. Wear safety glasses or masks when working with power tools or chemicals, or when performing other work where there is a risk of eye damage. Representatives of some professions (builders, doctors) are required to wear safety glasses to prevent foreign objects from getting into their eyes. After an eye injury, you need to monitor for changes in vision and symptoms of infection. Most minor eye injuries can be treated at home.

75. Characteristics of disability groups according to the state of visual functions.

Correct answer:

Third group: degree of vision loss - 40-60%. There are significant disturbances in the functioning of the eyes. The patient requires special devices to carry out normal activities. The ability to self-care is fully preserved. Second degree: degree of vision loss - 65-90%. There are pronounced disturbances in activity. The patient often requires the help of others. Group 1: >90% vision loss. Severe damage to the analyzer, persistent dysfunction of the visual system. Often total blindness

**CRITERIA for assessing competencies and rating scales**

Grade "unsatisfactory" (not accepted) or absence formation competencies	Grade "satisfactorily" (passed) or satisfactory (threshold) level of development competencies	Rated "good" (passed) or sufficient level development competencies	Excellent rating (passed) or high level development competencies
failure to student on one's own demonstrate knowledge when solving assignments, lack independence in application of skills. Absence availability confirmation formation competencies indicates negative development results academic discipline	student demonstrates independence in application of knowledge skills and abilities to solve educational tasks in full According to sample given teacher, by tasks, solution of which there were shown teacher, it should be considered that competence formed on satisfactory level.	student demonstrates independent application of knowledge, skills and abilities when deciding tasks, tasks similar samples that confirms Availability formed competencies for higher level. Availability such competence on sufficient level indicates sustainable fixed practical skill	student demonstrates ability to full independence in choosing a method solutions non-standard assignments within disciplines with using knowledge, skills and skills, received as in development progress of this discipline, and adjacent disciplines should count competence formed on high level.

***Criteria for assessing test control:***

percentage of correct answers	Marks
91-100	Great
81-90	Fine
70-80	satisfactorily
Less than 70	unsatisfactory

When grading tasks with multiple correct answers, one error is allowed.

**Evaluation criteria for individual forms of control must be selected based on those prescribed in paragraph 2.**

***Interview assessment criteria:***

Mark	Descriptors
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	<b>strength of knowledge</b>	<b>ability to explain (introduce)</b> the essence of phenomena, <b>processes, do</b> conclusions	<b>logic and subsequence answer</b>
<b>Great</b>	strength of knowledge, knowledge of basic processes subject matter being studied areas, the answer differs in depth and completeness disclosure of the topic; possession terminological apparatus; logic and consistency answer	high skill explain the essence phenomena, processes, events, draw conclusions and generalizations, give reasoned answers, give examples	high logic and subsequence answer
<b>Fine</b>	solid knowledge of the basic processes of the studied subject area, differs in depth and completeness of the topic; possession terminological apparatus; free mastery of monologue speech, but one or two inaccuracies in the answer are allowed	ability to explain essence, phenomena, processes, events, draw conclusions and generalizations, give reasoned answers, give examples; however one or two inaccuracies in the answer are allowed	logic and subsequence answer
<b>satisfactory</b> really	satisfactory process knowledge subject matter being studied areas, answer, different insufficient depth and completeness of the topic; knowledge of basic theoretical issues. Several are allowed errors in content answer	satisfactory ability to give reasoned answers and provide examples; satisfactorily formed analysis skills phenomena, processes. Several are allowed errors in content answer	satisfactory logic and subsequence answer
<b>will not satisfy</b> really	poor knowledge of the subject area being studied, shallow opening Topics; poor knowledge basic theoretical issues, poor analysis skills phenomena, processes. Serious errors in content answer	inability to give reasoned answers	absence logic and sequences answer

***Criteria for assessing situational tasks:***

<b>Mark</b>	<b>Descriptors</b>
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	<b>understanding Problems</b>	<b>analysis situations</b>	<b>skills solutions situations</b>	<b>professional thinking</b>
Great	complete implication problems. All requirements, submitted to adania, completed	high benefit analyze situation, draw conclusions	high benefit select method solutions problems, faithful solution skills situations	high level professional thoughts
Fine	complete implication problems. All requirements, submitted to adania, completed	benefit analyze situation, draw conclusions	benefit select method solutions problems faithful solution skills situations	residual level professional thoughts. drops one or two precision in the answer
satisfactory really	astastic implication problems. majority requirements declared to adania, completed	satisfactory 1st ability analyze situation, draw conclusions	satisfactory e skills solutions situations, falsity with choosing a method solutions to the problem	residual level professional thoughts. falls more a bunch of inaccuracies in answer or there is an error in the sequence solutions
will not satisfy really	misunderstanding problems. legs requirements, submitted to I hope not completed. No Tveta. Did not have experiments to solve hello	izkaya benefit analyze situation	insufficient solution skills situations	missing