

Sikkim Public Service Commission

Written Examination for the post of Specialist (Senior Grade) - Ophthalmology

Time Allowed: 3 hours & 30 minutes

PAPER - II

Maximum Marks: 300

INSTRUCTIONS TO CANDIDATES

Read the instructions carefully before answering the questions: -

1. This Test Booklet consists of 12 (twelve) pages and has 100 (hundred) printed questions.
2. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS BOOKLET DOES NOT HAVE ANY UNPRINTED, TORN OR MISSING PAGES OR ITEMS. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
3. Use only Black Ball Point Pen to fill the OMR Sheet.
4. Please note that it is the candidate's responsibility to fill in the Roll Number carefully without any omission or discrepancy at the appropriate places in the OMR ANSWER SHEET as well as on SEPARATE ANSWER BOOKLET for Conventional Type Questions. Any omission/discrepancy will render the Answer Sheet liable for rejection.
5. Do not write anything else on the OMR Answer Sheet except the required information. Before you proceed to mark in the OMR Answer Sheet, please ensure that you have filled in the required particulars as per given instructions.
6. This Test Booklet is divided into 4 (four) parts - Part-I, Part-II, Part-III and Part-IV.
7. All four parts are Compulsory.
8. Part-I consists of Multiple-Choice Questions. The answers for these questions have to be marked in the OMR Answer Sheet provided to you.
9. Parts II, III and IV consists of Conventional Type Questions. The answers for these questions have to be written in the Separate Answer Booklet provided to you.
10. After you have completed filling in all your responses on the OMR Answer Sheet and the Answer Booklet(s) and the examination has concluded, you should hand over the OMR Answer Sheet and the Answer Booklet(s) to the Invigilator only. You are permitted to take the Test Booklet with you.
11. **Marking Scheme**
THERE WILL BE NEGATIVE MARKING FOR WRONG ANSWERS MARKED BY A CANDIDATE IN THE OBJECTIVE TYPE QUESTIONS
 - (i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, one-third of the marks assigned to the question will be deducted as penalty.
 - (ii) If a candidate gives more than one answer, it will be treated as a wrong answer even if one of the given answers happens to be correct and there will be same penalty as above to the question.
 - (iii) If a question is left blank. i.e., no answer is given by the candidate, there will be no penalty for that question.

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

PART - I
(Multiple Choice Questions)

Choose the correct answer for Questions 1 to 75 from the given options. Each question carries 2 marks.

[75 x 2 = 150]

1. A 2-year-old girl is referred by her pediatrician for evaluation of a residual small angle esotropia and face turn after strabismus surgery for infantile esotropia. Examination reveals intermittent esotropia 15 PD with the fixing eye in adduction even when one eye is occluded. A horizontal nystagmus is present with the fast phase to the fixing eye and it increases when the fixing eye is abducted. Cycloplegic refraction shows +3.00 OU. The most appropriate treatment for this patient is -
 - (a) Bilateral medial rectus recession
 - (b) Convergence exercises
 - (c) Only spectacle correction with +3.00 OU
 - (d) Botox injection in both medial rectus muscles and re-evaluate for refractive error after 6 months
2. A 2-year-old boy presents with poor vision in both the eyes, mental retardation, a thin upper lip, and low-set ears. The patient's mother is currently being treated with disulfiram for her substance abuse problem. Findings of your examination might include all of the following **except**:
 - (a) Peter's anomaly
 - (b) Tortuous retinal vessels
 - (c) Optic nerve hypoplasia
 - (d) Sclerocornea
3. Phacoemulsification with in the bag intraocular lens placement was done in a 62-year-old man, who had nuclear sclerosis grade IV. The incision site was at the limbus in the superior quadrant and the length was 5.5 mm. Interrupted 10-0 ethilone sutures were used to close the wound. After six weeks of surgery, following refraction is measured: +2.25 - 6.75 x 75°. At what clock position would you look for a suture to cut?
 - (a) You would not want to cut the suture in this case
 - (b) 11 o'clock
 - (c) 12 o'clock
 - (d) 1 o'clock
4. All of the following statements regarding the corneal endothelium are true **except**:
 - (a) The corneal endothelium is responsible for the production of Descemet's membrane
 - (b) An ATP-Na⁺K⁺ dependent pump maintains the deturgescence of the corneal stroma
 - (c) There are tight junctions interlocking adjacent endothelial cells
 - (d) Corneal endothelial cells can respond to stress and injury by undergoing mitosis
5. A 54-year-old woman complains of discomfort and foreign body sensation in her right eye over the past few months. Slit lamp examination shows papillary hypertrophy of the upper palpebral conjunctiva with prominent vessels and hyperemia of the upper bulbar conjunctiva with punctate staining with rose Bengal. Corneal changes reveal micropannus and fine filaments at the superior periphery. The patient has deranged thyroid functions for last 5 years. The most likely diagnosis is:
 - (a) Terrien's degeneration
 - (b) Chronic allergic conjunctivitis
 - (c) Superior limbic keratoconjunctivitis
 - (d) Trachoma

6. Each of the following ocular tissues is correctly paired with its embryonic origin **except**:
- Retinal pigment epithelium - neuroectoderm
 - Fibres of extraocular muscles-neural crest
 - Temporal sclera- mesoderm
 - Lacrimal gland- surface ectoderm
7. All of the following statements regarding the vitreous are true **except**:
- It is adherent to pars plicata
 - It weighs approximately 4 g
 - Its viscosity is due to mucopolysaccharide hyaluronic acid
 - Cloquet's canal may contain remnants of the hyaloid vascular system
8. The Pulfrich's phenomenon refers to:
- An acquired color deficit in toxic retinopathy
 - An acquired stereo-illusion in optic neuropathy
 - Palinopsia due to temporal-parietal-occipital junction lesions
 - Metamorphopsia caused by multiple evanescent white dot syndrome
9. Each of the following statements regarding sclera is true **except**:
- The collagen lamellae are obliquely oriented
 - The rectus muscles insert according to the spiral of Tillaux
 - It is thinnest at the insertion of rectus muscles
 - It is in a relatively deturgescenced state, accounting for its opaque appearance
10. A low-vision patient attempts to read newspaper print at a distance of 25 cm. He holds a 10 D lens 10 cm from the print. The angular magnification provided by this lens is -
- 1 X
 - 2.5 X
 - 5 X
 - 10 X
11. If a human optic nerve head is 1.75 mm in vertical height, what is the height of its image as formed on the inside of a perimeter with a radius of curvature of 33 cm?
- 3.4 mm
 - 34 mm
 - 17 mm
 - 6.1 mm
12. Which of the following is the most common primary malignant tumor of the orbit in a 6-year-old?
- Optic nerve glioma
 - Rhabdomyosarcoma
 - Neuroblastoma
 - Meningioma
13. Which of the following is not associated with congenital glaucoma?
- Neurofibromatosis
 - Sturge-Weber syndrome
 - Congenital rubella syndrome
 - Angiomatosis retinae
14. The excimer laser operates in which of the following spectral wavelength?
- Infrared
 - Near ultraviolet
 - Far ultraviolet
 - Visible
15. Birdshot retinochoroidopathy is associated with all of the following except
- Cystoid macular edema
 - Abnormal ERG
 - Hypopyon
 - Oval, nonpigmented fundus lesions

16. Conditions that may result in the biomicroscopic appearance of cystoid macular edema but lack fluorescein angiographic evidence of late dye accumulation in the cyst like spaces include all of the following **except**:
 - (a) X-linked Juvenile retinoschisis
 - (b) Retinitis pigmentosa
 - (c) Nicotinic acid maculopathy
 - (d) Solar retinopathy
17. Vortex dystrophy may be produced by all of the following medications **except**:
 - (a) Chlorpromazine
 - (b) Chloroquine
 - (c) Amiodarone
 - (d) Chlorambucil
18. Optic nerve hypoplasia is associated with all **except**:
 - (a) Maternal ingestion of phenytoin
 - (b) Maternal diabetes mellitus
 - (c) Hypopituitarism
 - (d) Maternal ingestion of erythromycin
19. Mobius syndrome is associated with all **except**:
 - (a) Tongue abnormalities
 - (b) Poland's anomaly
 - (c) High myopia
 - (d) Change of lid fissure on horizontal gaze
20. Unilateral slowly progressive vision loss over a period of 2 years is typical of:
 - (a) Nutritional deficiency
 - (b) Leber's hereditary optic neuropathy
 - (c) Optic neuritis
 - (d) Sphenoid meningioma
21. Blockage of the trabecular meshwork in phacolytic glaucoma is caused by an accumulation of
 - (a) Lipid and lipid laden macrophages
 - (b) Protein and protein laden macrophages
 - (c) Lens epithelial cells
 - (d) Pigment cells
22. A 45-year-old man with 20/20 vision is noted to vertical striae at the level of Descemet's membrane on slit lamp's examination. The most likely diagnosis is:
 - (a) Posterior polymorphous dystrophy
 - (b) Recurrent corneal erosions
 - (c) Birth trauma
 - (d) Congenital glaucoma
23. Which of the following peripheral retinal lesions has the largest association with rhegmatogenous retinal detachment?
 - (a) Paving stone degeneration
 - (b) Meridional fold
 - (c) Cystic retinal tuft
 - (d) Enclosed ora bay
24. Ocular features associated with Down's syndrome include all of the following **except**:
 - (a) Lisch nodules
 - (b) Brushfield spots
 - (c) Myopia
 - (d) Keratoconus
25. Which type of eyelid cancer should be suspected in patients with chronic blepharitis, chalazion formation and evidence of pagetoid spread?
 - (a) Basal cell carcinoma
 - (b) Squamous cell carcinoma
 - (c) Sebaceous cell carcinoma
 - (d) Malignant melanoma
26. The histologic pattern designated Antoni A is found in:
 - (a) Optic nerve juvenile pilocytic astrocytoma
 - (b) Chondrosarcoma
 - (c) Orbital neurilemoma
 - (d) Orbital meningioma
27. Which of the following has been associated with corneal melting following cataract extraction?

- (a) Keratoconus
 - (b) Keratoconjunctivitis sicca
 - (c) Fuchs' dystrophy
 - (d) Temporal arteritis
28. All of the following disorders of ocular movements are caused by paraneoplastic mechanisms **except**:
- (a) Opsoclonus
 - (b) Acquired pendular nystagmus
 - (c) Downbeat nystagmus
 - (d) Upbeat nystagmus
29. All of the following are remnants of Tunica Vasculosa Lentis **except**:
- (a) Mittendorf dot
 - (b) Epicapsular dot
 - (c) Persistent pupillary membrane
 - (d) Posterior lenticonus
30. Fundus findings in the shaken baby syndrome may simulate which of the following conditions?
- (a) Berlin's edema
 - (b) Central retinal artery occlusion
 - (c) Terson's syndrome
 - (d) Choroidal rupture
31. The most significant indication for the removal of an iris melanoma is:
- (a) Ectropion uveae
 - (b) Documented growth
 - (c) Hypervascularity
 - (d) Sectoral cataract
32. In the setting of acute eyelid trauma, a reliable sign that the orbital septum has been penetrated is:
- (a) Entropion
 - (b) Ptosis
 - (c) Fat herniation
 - (d) Lid lag
33. All of the following extraocular muscles can abduct the eye **except**:
- (a) Lateral rectus
 - (b) Superior oblique
 - (c) Inferior oblique
 - (d) Superior rectus
34. Each of the following chromosomal abnormalities is correctly matched with one of its ophthalmic manifestations **except**:
- (a) Deletion p11 - aniridia
 - (b) Deletion 13q14 - retinoblastoma
 - (c) XO - nystagmus
 - (d) XXY - Brushfield spots
35. Regarding retinal physiology, choose the incorrect response.
- (a) Rod outer segments shed during the day.
 - (b) The retinal pigment epithelium maintains the outer blood retinal barrier.
 - (c) 11-cis-retinaldehyde is oriented perpendicular to the plane of lipid bilayer.
 - (d) Human rods have one class of visual pigment and cones have three.
36. The image of an object placed at the center of curvature of a concave spherical mirror is all of the following **except**:
- (a) Real.
 - (b) Inverted.
 - (c) The same size as the object.
 - (d) Located on the opposite side of the mirror as the object.
37. Findings in Parinaud's syndrome include all **except**:
- (a) Accommodative spasm
 - (b) Convergence-retraction nystagmus
 - (c) Down-gaze palsy
 - (d) Light-near dissociation
38. Treatment options for consecutive esotropia include all the following **except**:
- (a) Patching the non-deviating eye
 - (b) Prisms
 - (c) Correction of hyperopic refractive error
 - (d) Surgery

39. Congenital defects of color vision that are associated with subnormal visual acuity is:
- (a) Rod monochromatism
 - (b) Tritanopia
 - (c) Deuteranopia
 - (d) Protanopia
40. Sites in which pseudoexfoliative material is found include all **except**:
- (a) Skin
 - (b) Conjunctiva
 - (c) Heart
 - (d) Extraocular muscles
41. Which of the following is the least common corneal dystrophy?
- (a) Macular dystrophy
 - (b) Lattice type 1
 - (c) Lattice type 3
 - (d) Granular corneal dystrophy
42. What is the type of visual acuity used in Snellen's chart testing?
- (a) Minimum visible
 - (b) Minimum resolvable
 - (c) Minimum discriminable
 - (d) Minimum hyperacuity
43. Final common pathway for horizontal gaze involves:
- (a) Vestibular nucleus
 - (b) Oculomotor nucleus
 - (c) Abducens nucleus
 - (d) Trochlear nucleus
44. Ocular bobbing is seen in lesion at level of -
- (a) Midbrain
 - (b) Pons
 - (c) Medulla
 - (d) Cortex
45. Which of the following is the nucleus for upward gaze?
- (a) Raphe nucleus
 - (b) Cuneiform nucleus
 - (c) Interstitial nucleus of Cajal
 - (d) PPRF
46. Diplopia in superior oblique palsy is most correctly described as:
- (a) Vertical on looking down
 - (b) Vertical on looking up
 - (c) Horizontal on looking in
 - (d) Horizontal on looking out
47. Dislocation of lens not seen in -
- (a) Ehlers-Danlos syndrome
 - (b) Galactosemia
 - (c) Marfan syndrome
 - (d) Sulfatase deficiency
48. Ex-Press glaucoma shunt is made up of:
- (a) Titanium
 - (b) Gold
 - (c) Silicon
 - (d) Stainless steel
49. Earliest visual field defect in open angle glaucoma is-
- (a) Contraction of isopters
 - (b) Enlargement of blind spot
 - (c) Nasal step
 - (d) Arcuate scotoma
50. In ocular toxocariasis -
- (a) A history of visceral larva migrans is always present
 - (b) Examination of the patient's stool is useful in diagnosing the disease
 - (c) B/L ocular involvement should make one doubt the accuracy of diagnosis
 - (d) Ultrasound of the granuloma typically shows calcification
51. Which of the following ocular changes are usually not seen in AIDS patient?
- (a) Papilledema
 - (b) Cotton wool spots
 - (c) Retinal microaneurysm
 - (d) Hard exudates
52. When compared to blood, vitreous humor has higher concentration of:
- (a) Glucose

- (b) Sodium
(c) Potassium
(d) Ascorbate
53. Corneal ulcer resembling fungal ulcer is seen due to infection with:
(a) Nocardia asteroides
(b) Mycobacterium
(c) Chlamydia trachomatis
(d) Klebsiella pneumonia
54. Pseudo convergent squint is seen in:
(a) Thyrotoxicosis
(b) Broad epicanthus
(c) Abducens palsy
(d) Narrow interpupillary distance
55. Black deposits on conjunctiva in a patient of glaucoma are seen with the use of:
(a) Epinephrine
(b) Carbonic anhydrase inhibitors
(c) PG analogues
(d) B-Blockers
56. Ratio of diameter of retinal arteriole to venule is:
(a) 1:2
(b) 2:3
(c) 3:4
(d) 3:2
57. Cataract in infancy is associated with all of the following except
(a) Hypoglycemia
(b) Canavan syndrome
(c) Hypoparathyroidism
(d) Zellweger's syndrome
58. Blumenthal technique is employed in:
(a) Cataract extraction
(b) Fluorescein angiography
(c) Trabeculectomy
(d) Gonioscopy
59. Pseudouveitis is seen in:
(a) Toxoplasma
(b) Malignant melanoma
(c) Sarcoidosis
(d) Endophthalmitis
60. The most frequent cataract type seen in adult retinitis pigmentosa patients is:
(a) PSCC
(b) Anterior polar
(c) Cortical
(d) Mixed
61. Which of the following group of drugs can cause cystoids macular edema?
(a) Prostaglandin F_{2α} analogues
(b) Prostaglandin E₂ analogues
(c) Oral corticosteroids
(d) α blockers
62. Which of the following is the most radioresistant layer of retina?
(a) Retinal pigment epithelium
(b) Rods and cones
(c) Ganglion cell layer
(d) Inner nuclear layer
63. Retinal astrocytoma is seen in
(a) Tuberous sclerosis
(b) Sturge-Weber syndrome
(c) Von Hippel- Lindau syndrome
(d) None
64. What is the most common ocular manifestation of rheumatoid arthritis?
(a) Scleritis
(b) Episcleritis
(c) Keratoconjunctivitis sicca
(d) Anterior uveitis
65. Negative Jones-I and Jones II Dye test indicate:
(a) Primary hypersecretion of tears
(b) Partial obstruction of distal nasolacrimal duct
(c) Lacrimal pump failure
(d) Partial obstruction of lacrimal canaliculi

66. All of the following are the surgeries for ptosis correction **except**:
- (a) Brow suspension
 - (b) Levator resection
 - (c) Muller resection
 - (d) Muller recession
67. All of the following vitamin deficiency can cause centrocecal scotoma **except**:
- (a) Vitamin B2
 - (b) Vitamin B12
 - (c) Thiamine
 - (d) Vitamin A
68. Charge syndrome include all **except**:
- (a) Coloboma
 - (b) Heart defect
 - (c) Urogenital anomalies
 - (d) Esophageal atresia
69. All of the following can cause Optic Neuritis, **except**-
- (a) Rifampicin
 - (b) Digoxin
 - (c) Chloroquine
 - (d) Ethambutol
70. Duochrome test is for:
- (a) Subjective verification of refraction
 - (b) Subjective refinement of refraction
 - (c) Subjective binocular balancing
 - (d) None of the above.
71. The most convenient form of cross cylinder is a combination of -
- (a) -0.5 Diopter sphere with +1 Diopter cylinder.
 - (b) +0.5 Diopter sphere with -1 Diopter cylinder.
 - (c) +0.25 Diopter sphere with +0.5 Diopter cylinder
 - (d) -0.25 Diopter sphere with +0.5 Diopter cylinder
72. All of the following organisms can invade an intact corneal epithelium **except**:
- (a) Neisseria meningitides
 - (b) Corynebacterium diphtheria
 - (c) Shigella
 - (d) Pseudomonas aeruginosa
73. Interstitial keratitis is seen in all **except**:
- (a) Syphilis
 - (b) HSV
 - (c) Chlamydia
 - (d) Acanthamoeba
74. Which of the following stain is used for diagnosis of granular dystrophy of cornea?
- (a) Colloidal iron
 - (b) Congo red
 - (c) PAS
 - (d) Masson's trichrome
75. Which serotype of enterovirus most commonly causes hemorrhagic conjunctivitis?
- (a) Type 7
 - (b) Type 70
 - (c) Type 11
 - (d) Type 23

PART - II
(Conventional Type Questions)

Answer any 10 (ten) from Questions 76 to 88. Each question carries 5 marks.

[10 x 5 = 50]

76. Classify Astigmatism.
77. Describe in brief Herring's and Sherrington's law.
78. Enlist the congenital anomalies of optic disc.
79. Enlist the causes of Argyll Robertson pupil.
80. Discuss in brief the ophthalmic manifestations of Horner's syndrome.
81. Discuss in brief the types of color blindness.
82. Discuss in brief the principle of applanation tonometry.
83. Describe in brief the layers of retina.
84. Enlist the glaucomatous changes in the optic nerve head.
85. Discuss in brief the classification of Topical Antiglaucoma drugs.
86. Describe the OCT findings of Central Serous Retinopathy.
87. Describe the signs of thyroid ophthalmopathy.
88. Describe in brief the types of surgery for entropion.

PART - III
(Conventional Type Questions)

Answer any 5 (five) from Questions 89 to 96. Each question carries 10 marks.

[5 x 10 = 50]

89. Describe in brief the role of lasers in ophthalmology.
90. Describe in brief the aqueous formation and drainage.
91. Describe in brief visual acuity evaluation in infants and children.
92. Describe Gonioscopy and its principle, types and application.
93. Enumerate retinal changes in pathological myopia.
94. Describe the principle of Retinoscopy.
95. Describe in brief Extraocular Muscles along with their actions, origin and insertion and nerve supply.
96. Write the definition of Nystagmus and describe the various types of nystagmus.

PART - IV
(Conventional Type Questions)

Answer any 2 (two) from Questions 97 to 100. Each question carries 25 marks.

[2 x 25 = 50]

97. Define Ptosis and discuss in detail its classification, evaluation and management.
98. Discuss in detail the factors responsible for Central Retinal Arterial Occlusion and its management.
99. Describe in detail various types of Retinal Detachment.
100. Describe in detail the complications and management following Glaucoma Filtration Surgery.

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