ROYAL CIVIL SERVICE COMMISSION
BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2011
EXAMINATION CATEGORY: TECHNICAL

PAPER III: SUBJECT SPECIALIZATION PAPER FOR: OPTOMETRY

Date	**: October 30, 2011**
Total Marks	**: 100**
Examination Time	**: 2.5 Hours**
Reading Time	**: 15 Minutes**

INSTRUCTIONS

1. Write your Roll Number clearly on the answer booklet in the space provided.

2. The first 15 minutes is being provided to check the number of pages, printing errors, clarify doubts and to read the instructions. You are **NOT PERMITTED TO WRITE** during this time.

3. Use either **Blue** or **Black** ink pen or ball point pen for the written part and **Pencils** for the sketches and drawings.

4. All answers should be written on the Answer Booklet provided. Candidates are not allowed to write anything on the question paper.

5. This Question Booklet consists of 9 **pages**. It is divided into two sections – namely SECTION A and SECTION B.

6. **SECTION A** consists of two parts. **Part I and Part II.**

   Part I consists of 30 multiple choice questions carrying one (1) mark each and is **compulsory**. The answer of your choice should be clearly written **in whole** along with the question and option number on your answer booklet.

   Part II consists of four (4) short answer questions of five (5) marks each and all questions are compulsory.

7. **SECTION B** consists of two **Case Studies**. Choose only **ONE** case study and answer the questions under your choice. Each case study carries fifty (50) marks in total.

SECTION A

PART A. MULTIPLE CHOICE QUESTIONS

Directions:
In this part there are thirty multiple choice questions each carrying 1 mark. Each question is followed by four suggested answers. Choose **ONE** that best answers the question.

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1. Parasympathetic fibres destined for the pupil reside in the
   a) Medulla
   b) Medial portion of 3rd cranial nerve
   c) Posterior communicating artery
   d) Pons

2. All of the following would be expected to show restriction during forced duction testing *except*
   a) Thyroid-associated orbitopathy
   b) Internuclear ophthalmoplegia
   c) Orbital fracture with inferior rectus entrapment
   d) Congenital fibrosis of the extraocular muscles

3. Which of the following is most likely to prompt additional evaluation in a patient with facial palsy?
   a) Simultaneous bilateral facial palsy
   b) Recovery of facial nerve that occurs 3 weeks after facial palsy
   c) Facial palsy in a patient older than 50 years of age
   d) Upper and lower facial musculature equally affected

4. After a motor vehicular accident, a young man presents with unilateral marked proptosis, diplopia and prominent episcleral vessels. He complains of a rushing sound in his head. Which of the following is the most likely possibility?
   a) carotid cavernous fistula
   b) orbital blow out fracture
   c) retro orbital hemorrhage
   d) orbital cellutis

5. A 3- year- old with a dense developmental cataract in the left eye demonstrates poor fixation OS and a left esotropia. OD is normal. Which of the following statements is true?
   a) IOL implantation surgery should not be performed in children
   b) The esotropia should be repaired prior to the cataract surgery
   c) Amblyopia treatment should begin prior to cataract surgery
   d) Cararact surgery with IOL implantation should be done first then followed by management of esotropia and amblyopia

6. Medical indications for lens removal include all but one of the following
   a) Phacogenic uveitis
   b) Phacomorphic glaucoma
   c) Dislocation of lens into anterior chamber
   d) Dislocation of lens into posterior chamber

7. A 50-year- old woman with myopia presents with complaints of monocular diplopia and difficulty driving at night. Her best corrected visual acuity is 6/12 with a 2 D myopic shift. On slit lamp exam she has minimal nuclear sclerosis. What additional examination is helpful to evaluate her symptoms?
   a) A red reflex
   b) Corneal topography
   c) Fluorescein angiography
   d) MRI scan

8. When the ciliary muscle contracts
   a) The diameter of the muscle ring is reduced, thereby increasing tension on the zonular fibres, which allows the lens to become more spherical
   b) The diameter of the muscle ring is increased, thereby increasing tension on the zonular fibres, which allows the lens to become more spherical.
   c) The diameter of the muscle ring is reduced, thereby relaxing tension on the zonular fibres , which allows the lens to become more spherical
   d) The diameter of the muscle ring is increased, thereby relaxing tension on the zonular fibres, which allows the lens to become more spherical

9. Which of the following is a recognized notation of visual acuity?
   a) Snellen fraction
   b) Minimal angle of resolution
   c) logMAR

d) all of the above

10. Aiming for a slight residual myopia in IOL power selection may be desirable because
    a) Weaker lenses are thinner
    b) The A constant is calculated for a slight degree of myopia
    c) Residual myopia is closer to emmetropia than residual hyperopia
    d) An error in power calculation is less likely to produce a resultant hyperopia, in which the patient is in focus for no real distance

11. The principle of the astronomical telescope is used for magnification in which of the following ophthalmic instruments?
    a) Indirect ophthalmoscope
    b) Direct ophthalmoscope
    c) Retinal fundus camera
    d) a and c

12. When prescribing bifocal lenses for a patient with myopia,
    a) The practitioner should leave the choice of segment type to the optician
    b) A round top segment is preferred because of its thin upper edge
    c) A flat top segment is preferred because it lessens image jump
    d) The one- piece shape is indicated for adds greater than +2.00 D

13. Which vitamin is most critical for photoreceptor response to light?
    a) A
    b) B
    c) C
    d) D

14. Cone density is greatest in which area of the retina?
    a) Macula
    b) Peripapillary region
    c) Peripheral retina
    d) Arcuate region

15. The aqueous layer of the tear film is produced by which of the following?
    a) Glands of Krause
    b) Mebomian glands
    c) Goblet cells
    d) Sweat glands

16. Which of the rectus muscles inserts closest to the limbus?
    a) Medial rectus
    b) Lateral rectus
    c) Superior rectus
    d) Inferior rectus

17. Proper distance visual acuity testing for a low vision patient includes all *except*
    a) A testing chart with symbols arranged in rows of decreasing size that are equally legible
    b) Non standardized illumination
    c) A snellen visual acuity chart
    d) A +1.00 D lens placed over the patient's distance refraction

18. All of the following statements regarding irregular astigmatism are true except:
    a) Manifest and automated refraction maybe dissimilar if there is significant irregular astigmatism
    b) Irregular astigmatism may cause a poor end point in clinical refraction
    c) Irregular astigmatism may be induced by keratoconus and marginal degeneration
    d) Best -corrected visual acuity is usually better with spectacles than rigid contact lenses

19. Follicular conjunctivitis is associated with all of the following *except*
    a) Herpes simplex virus conjunctivitis
    b) Adult inclusion conjunctivitis
    c) Drug- induced conjunctivitis
    d) Allergic conjunctivitis

20. Which of the following statements regarding topical fluorescein is *false*
    a) It is a nontoxic water -soluble dye
    b) It is used to detect disruption of intercellular junctions
    c) It can be used to detect epithelial irregularity
    d) It has antiviral properties

21. All of the following can be seen with ocular adenoviral infection *except*
    a) Preauricular lymphadenopathy
    b) Follicular reaction in the conjunctiva

c) Subepithelial infiltrates in the cornea
d) Enlarged corneal nerves

22. All of the following can invade intact corneal epithelium *except*
    a) Neisseria meningitides
    b) Corynebacterium diptheriae
    c) Shigella
    d) Pseudomonas aeroginosa

23. A retrobulbar anesthetic is least likely to cause anesthesia of cranial nerve
    a) 2^{nd}
    b) 3^{rd}
    c) 4^{th}
    d) 6^{th}

24. Topical anesthesia can include all *except*
    a) IV sedation
    b) Lidocaine jelly
    c) Xylocaine drops
    d) Proparacaine drops

25. The most critical and constant finding in retinitis pigmentosa is
    a) Dense bone spicule pigmentation in the retinal periphery
    b) A significantly reduced ERG
    c) Small tubular fields
    d) An abnormality in the rhodopsin gene

26. All of these diagnostic tests are useful in evaluating a patient with an intraocular metallic foreign body *except*
    a) Indirect ophthalmoscopy
    b) CT scan
    c) MRI scan
    d) Ultrasonography

27. Sympathetic ophthalmia
    a) Occurs in 1 in 1500 of penetrating eye trauma
    b) Never causes permanent loss of vision
    c) May be avoided by early enucleation of unsalvageable eyes

d) Does not cause exudative detachment

28. Neonatal conjunctivitis is defined as conjunctivitis in age group
    a) 1 year
    b) 6 months
    c) 1 month
    d) 45 days

29. Presbyopia is associated with all of the following *except*
    a) Loss of accommodation
    b) Usually starts by the age of 40
    c) Is treatable with spectacle correction
    d) Change in refractive state of the cornea

30. Which of the following is most characteristic of exudative retinal detachment?
    a) shifting fluid
    b) tobacco dust
    c) fixed folds
    d) demarcation lines

PART B. WRITE SHORT ANSWERS (20 MARKS)

General directions:

Write short notes on any 4 of the following .Each answer carries 5 marks.

1. Effects of Diabetes Mellitus on the eye.

2. Essential Infantile esotropia.

3. Conjunctivitis – brief classification and describe any one type.

4. Lasers and its applications in Ophthalmology.

5. Lens induced glaucoma.

SECTION B **(50 MARKS)**

General directions:

In this section there are two questions related to a case study. Choose <u>ANY one</u> question from the questions below and write your answer to the chosen question very carefully.

CASE STUDY I

1. A 15- months old child presented to the eye opd at ERRH, mongar with the complaints of squinting in the left eye noticed since 3 months. On examination, a white reflex in the left eye was also noticed. A dilated fundus examination was advised and a large whitish intraocular mass occupying $3/4^{th}$ of the globe was seen. B –scan ultrasonography of the left eye was suggestive of an elevated large mass attached to the retina with calcification.

a) What is the most probable diagnosis? (5)

b) Write down any further history and / or examination you would like to do in order to confirm your diagnosis. (5)

c) What further investigations would you advise if you were managing the case? (5)

d) Describe in detail your approach to and management of this case. (15)

e) What is your differential diagnoses? (10)

f) Write a short note on any 2 of your differential diagnoses. (10)

CASE STUDY II

2. A 60-year old man presented to the Emergency of JDWNRH with a complaint of sudden decrease of vision in the left eye following an alleged history of assault 1 day ago with a fist. On examination, the right eye had eyelid edema with ecchymoses and ciliary congestion. Visual acuity in the right eye was recorded as 6/60 and the left eye was 6/6. He has a history of undergoing cataract surgery OS 1 year ago.

a) Describe in detail all the possible findings that may be seen in this patient. (10)

b) What do you think is the most probable cause for decrease in vision in this patient? (10)

c) Write in detail your management of this case. (10)

d) What are the complications you can expect for this patient in the future? (10)

e) Mention the various investigations that you should advise for this patient and justify why. (10)