



Name :

Roll No. :

Invigilator's Signature :

CS/B.OPTM/SEM-3/BO-305/2011-12
2011
OPHTHALMIC & OPTICAL INSTRUMENTATION &
PROCEDURE – I

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following : 10 × 1 = 10
- i) A blue filter in the slit lamp is used to examine
 - a) aqueous flare
 - b) hypopyon
 - c) hyphaema
 - d) fluorescein staining.
 - ii) A slit lamp observation system is composed of an objective and an eyepiece. The objective lens consists of
 - a) two plano convex lenses
 - b) two convex lenses
 - c) two plano concave lenses
 - d) two concave lenses.
 - iii) In a slit lamp the eyepiece usually has a lens of
 - a) + 10D
 - b) + 20D
 - c) + 22D
 - d) + 40D.



- iv) In a slit lamp examination, using diffuse illumination, the angle between microscope and illumination should be
- a) 0° b) 5°
 c) $30^\circ - 45^\circ$ d) more than 60° .
- v) The principle of indirect ophthalmoscopy is to make the eye (being examined) by placing a lense in front of the patient’s eye.
- a) Emmetropic b) Highly myopic
 c) Highly hypermetropic d) Astigmatically neutral.
- vi) In indirect ophthalmoscopy with the use of a stronger lens image size will be
- a) image size larger with smaller field of view
 b) image size smaller with larger field of view
 c) image size larger with same field of view
 d) image size same with larger field of view.
- vii) In straddling technique, used in streak retinoscopy, the retinoscopic “streak” is turned off axis in both directions during axis conformation.
- a) 5° b) 15°
 c) 30° d) 45° .
- viii) In retinoscopy the fogging technique is used in cases of
- a) abnormally active accomodation
 b) very high refractive errors, where fundel glow is difficult to see (on initially starting retinoscopy)
 c) in scissors shadow
 d) in spherical aberrations.
- ix) Cycloplegics are used in retinoscopy in patients with
- a) high hypermetropia b) high myopia
 c) high astigmatism d) aphakic patients.



- x) All *except* are used in subjective refraction.
- a) cross cylinder b) astigmatic fan
c) duochrome test d) Hruby lens.
- xi) Radiuscope is used to check parameter of contact lenses.
- a) thickness b) base curve
c) diameter d) water content.

GROUP – B

(Short Answer Type Questions)

Write short notes on any *three* of the following.

3 × 5 = 15

2. Construction of Snellen's chart.
3. Retroillumination technique.
4. Point of neutralization.
5. Trail frame design.

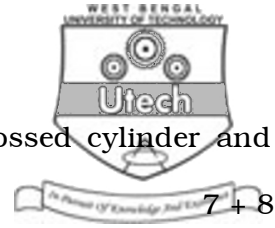
GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

6. After refraction is over, the “amount of cylinder” and the “axis of the cylinder” needs to be verified (in appropriate cases). Explain how you will proceed to do it and what methods you may use.

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7. Draw a labelled diagram of Jackson's crossed cylinder and describe how it is used. 7 + 8
8. Based on instrument design modern day refractometer are of 2 types — objective and subjective. Discuss briefly about the different types of refractometer available (objective & subjective refractometers) and the principle on which they are based.
9. a) Discuss 3 common problems during retinoscopy and explain how you plan to overcome these.
- b) Draw and describe the 'optics of movement of reflex' in a case of emmetropia, during retinoscopy. 6 + 9

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