



Name :

Roll No. :

Invigilator's Signature :

**CS/B.OPTM/SEM-3/BO-305/2009-10
2009**

**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) Which method of illumination is used for observing the corneal endothelium ?
- a) Sclerotic scatter b) Specular reflection
c) Conical beam d) Retroillumination
e) None of these.
- ii) Keratometer measures corneal
- a) dioptric value b) radius of curvature
c) thickness d) diameter.
- iii) The focimeter is the instrument that is used to determine
- a) lens dioptric value b) lens curvature
c) lens thickness d) none of these.

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[Turn over



- iv) JCC one axis to other axis marking difference is
- a) 90 degree b) 45 degree
c) 180 degree d) 135 degree.
- v) Autorefractometer gives us
- a) objective refraction b) subjective refraction
c) cycloptic refraction d) none of these.
- vi) The far point of a myopic eye is
- a) between examiner (infinity) and patient's eye
b) behind infinity
c) at infinity
d) none of these.
- vii) Straddling technique is used to
- a) refine spherical power
b) refine cylinder power
c) refine cylinder axis
d) none of these.
- viii) Eye lens of a Galilean telescope is
- a) Convex Lens
b) Concave Lens
c) Cylindrical Lens
d) Spherocylindrical Lens.
- ix) A patient's keratometry reading is $K_1 = 43.25D @ 180^\circ$ and $K_2 = 47.50D @ 90^\circ$. The spectacle power is $4.00 D \text{ sph } \bar{C} - 3.00 D \text{ cyl ax}90^\circ$. What is the amount of internal astigmatism ?
- a) $- 7.25 \times 90^\circ$ b) $- 7.25 \times 180^\circ$
c) $- 1.25 \times 180^\circ$ d) $+ 1.25 \times 90^\circ$.



- x) Javal-Schiotz keratometer is
- two-position keratometer
 - one-position keratometer
 - three-position keratometer
 - none of these.
- xi) The van Herrick technique is used to assess
- depth of anterior chamber
 - corneal oedema
 - pupil size
 - status of corneal endothelium.

GROUP – B

(Short Answer Type Questions)

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

3 × 5 = 15

- Optical construction of compound microscope.
- Neutrality in Retinoscopy.
- Use of cycloplegics in retinoscopy.
- Autorefractometers.

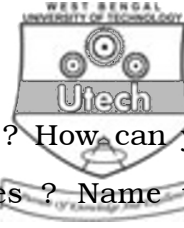
GROUP – C

(Long Answer Type Questions)

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

- What are the parts of a streak retinoscope ? Explain with diagram. What is neutralization ? Explain with diagrams. How can you determine the axis of astigmatic error using streak retinoscope ?
5 + 5 + 5
- Differentiate between Bausch & Lomb and Javal-Schiotz Keratometers. Bring out the differences in optical principle and construction with diagram.

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8. What are the normal contents of a trial box ? How can you identify convex & concave spherical lenses ? Name two objective and two subjective methods of refraction. 7 + 4 + 4
9. Describe with the help of a diagram the optical principle of Optical Lensometer and explain the procedure of determining unknown lens power using lensometer.

$$7 \frac{1}{2} + 7 \frac{1}{2}$$

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