

**FIRST YEAR M. OPTOM. : WINTER - 2018**  
**SUBJECT: APPLIED OPTICS**

Day: Monday  
Date: 21/01/2019

**W-2018-3735**

Time: 09.30 A.M. TO 11.30 A.M.  
Max. Marks: 50

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**N.B:**

- 1) Answer Section-A and Section-B on **SEPARATE** answer sheets.
  - 2) Section-A is of objective questions for total **20** marks.
  - 3) Section B is of short questions for total **30** marks.
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**SECTION-A**

5 Fill in the blanks: (10)

- 1) Rowing ring scotoma experienced through aphakic spectacle lenses is also known as \_\_\_\_\_.
- 2) Negative toric lenses are optically advantageous than positive tonic lenses due to the result of \_\_\_\_\_ being less.
- 3) A mounting is a device that holds the two lenses in front of the eyes but does not completely \_\_\_\_\_.
- 4) Chemical name of CR 39 is \_\_\_\_\_.
- 5) \_\_\_\_\_ Bifocal has least differential displacement at reading level.
- 6) The optical centers should be \_\_\_\_\_ by \_\_\_\_\_ for compensating pantoscopic tilt of 8 degrees.
- 7) The power of a prism is determined by its \_\_\_\_\_.
- 8) A 3D hypermetrope has amplitude of accommodation 6D, When uncorrected the NPA is located at \_\_\_\_\_ cm.
- 9) Binocular balancing is meant to balance the \_\_\_\_\_ between the two eyes.
- 10) The main purpose of fogging a patient's vision when using the astigmatic dial is to \_\_\_\_\_.

Q.2 State True or False. Give reason in short: (10)

- 1) Jackson cross cylinder has a handle 90° to the axis and axis 45° apart.
- 2) In alternate cover test putting neutral density filter in front of one eye will affect the result.
- 3) Wave front analysis measures chromatic aberrations.
- 4) Most important disadvantage of laminated lenses that they reduce visual acuity by diffraction.
- 5) AR coating on the Lens works by destructive interference of refracted light.

**P.T.O.**

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- 6) The positive fusional reserve is higher for distance than near.
- 7) Image distortion from a cylindrical lens can be minimized by using plus cylindrical lens.
- 8) Anisometropic amblyopia is commoner in hypermetropia than in myopia.
- 9) Pupil dilated with atropine can not be constricted with pilocarpine.
- 10) The angle of deviation for a prism is always half of its refracting angle.

### SECTION-B

**Q.3** Attempt **ANY SIX** of the following: **(30)**

- 1) What is binocular balancing? Why is it done? Explain any one method of binocular balancing.
- 2) Compare MR8 and Trivex as ophthalmic lens material.
- 3) Explain the difference between glass and plastic photochromic lenses.
- 4) Using Geneva lens measure calibrated for a lens index of 1.53 the front surface power of a lens is measured as +6.00DS. What is the true power of the surface if the actual lens index is 1.60?
- 5) What are static and dynamic retinoscopies? What are their indications? How are they performed?
- 6) In an eye camp if you are doing retinoscopy without aid of any trial lenses, how would you estimate the refractive error of the patients?
- 7) Explain with your own example, which types of bifocal has list differential displacement at reading level?

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