

II B. Optom. Sem-IV : Summer - 2019  
SUBJECT: OPTICS AND REFRACTION

Day: Monday

Time: —

Date: 08 04 - 2019

Max. Marks: 20

S-2019 - 4008

**N.B:**

**Section-A** is given on a **SEPARATE** sheet and has to answer on the same sheet. This sheet should be completed within the first **30** minutes of starting of the examination. This sheet Section-A only will be collected by the supervisor.

Seat No. \_\_\_\_\_

**SECTION-A**

**Q.1** Fill in the blanks: **(10)**

- i) The outermost Area of a lenticular lens is called as \_\_\_\_\_.
- ii) Compared with a spherical design \_\_\_\_\_ lens design may result in a thinner lens.
- iii) If a person with a high minus spectacle Rx switches to contact lens, the power in contact lens would be \_\_\_\_\_ than the power in spectacle lens.
- iv) \_\_\_\_\_ tint have a uniform transmission across the visible spectrum.
- v) The refractive index of antireflection coating to be given on CR 39 lens should be \_\_\_\_\_.
- vi) In hemianopic spectacle, the base of the prism is oriented towards \_\_\_\_\_.
- vii) Relative spectacle magnification is defined as \_\_\_\_\_.
- viii) \_\_\_\_\_ company uses In mass technology to manufacture plastic photo chromatic lens.
- ix) \_\_\_\_\_ coating on the lens can be used to hide wearer's eyes.
- x) Recommended bridge type for short nose is \_\_\_\_\_.

**P.T.O.**

**Q.2**

True or False (if false give reason):

**(10)**

- 1) Normal transmission for sunglass runs between 15% and 30%.
- 2) Myopic patient require bifocal or progressive lens early than the hyperopic patient.
- 3) All lenticular lenses have an aspheric central portion.
- 4) Contour plots record the surface elevation for the front surface of a progressive additional lens.
- 5) Visual acuity is better with Fresnel prism than with conventional prism.
- 6) The toric base curve is on the back of minus cylinder lens.
- 7) A gradient tint varies in transmission over the surface of the lens.
- 8) For every 2mm pantoscopic tilt optical centre should raised by 1mm.
- 9) Aspheric design makes the lens steeper than spheric lens.
- 10) When the vertex distance is increased in high minus lens the magnification increases.

**Marks Obtained:** \_\_\_\_\_

**Signature of Invigilator:** \_\_\_\_\_

**Signature of Examiner:** \_\_\_\_\_

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II -B.OPTOM. SEM – IV : SUMMER - 2019

SUBJECT: OPTICS AND REFRACTION

Day: Monday  
Date: 08/04/2019

Time: 10.00 AM TO 01.00 PM  
Max. Marks: 50

S-2019-4008

**N.B:**

- 1) There are **THREE** sections as:  
Section A = Objective type questions = 20 marks  
Section B = Long questions = 20 marks  
Section C = Short questions = 20 marks
- 2) **Section-A** is given on a **SEPARATE** sheet and has to be answered on the **SAME** sheet. This sheet should be completed within the first **30** minutes of starting of the examination. This sheet with **Section-A** only will be collected by the supervisor.
- 3) Section B has 3 long questions and **ANY TWO** questions have to be answered on the **SEPARATE** answer sheet.
- 4) Section C has short questions and **ANY FIVE** questions have to be answered on the **SEPARATE** answer sheet.
- 5) Draw neat labeled diagrams **WHEREVER** necessary.

**SECTION-B**

Attempt **ANY TWO** of the following: (20)

- Q.1** Discuss the principle and manufacturing of Anti reflection coating.
- Q.2** Explain any five special purpose spectacles.
- Q.3** A patient with refractive error of -4.00 DSph for distance in Both eyes and near addition + 2.50 DSph in both eyes wants to use glasses for computer use. What are the current spectacle lens options for him? Explain advantages and disadvantages of each lens.

**SECTION-C**

Write short notes on (**ANY FIVE**): (30)

- a) Fresnel prism
- b) Scratch Resistance Coating
- c) Free form technology
- d) Cosmetic dispensing
- e) Lenticular lens
- f) Tinted lens

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