II B.OPTOM SEM-IV: WINTER - 2021
SUBJECT: OPTICS AND REFRACTION

Day: Saturday
Date: 16-10-2021 **W-2021 - 341** Time:
Max.Marks: 20

Note: Section A is given on a SEPERATE sheet and has to be answered on the same sheet. This sheet should be completed with the first 30 minutes of starting of the examination. This sheet with Section - A only will be collected by the supervisor.

Seat.No:_____

SECTION-A

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

1) Near variable focus lens available from Zeiss is _____.
2) A photochromic lens is made to return to its lighter state by exposure to red light and IR radiation is refer to as _____.
3) Ideal sunglass should have transmission between _____.
4) Axial ammetropia is best corrected with _____.
5) Drivewear lenses are _____.
6) _____ type of reflection is produced by irregular surface.
7) Best way to heat nylon frame is _____.
8) _____ plot demonstrates how power varies along the umbilical line of progressive corridor.
9) The Corning photo-chromic filter No._____ has shown considerable application in retinitis pigmentosa.
10) Rodenstock ColorMatic photochromic lenses are use _____ process for manufacturing.

Q.2 Match the following: **(05)**

1)	Glass photochromic	a)	Polyvinyl Acetate Sheet
2)	ARC	b)	Ferrous Oxide
3)	Poloroides	c)	Cerium Oxide
4)	Green tint	d)	Silver halide
5)	Pink tint	e)	Magnesium fluoride

Q.3 State true or false: if false give reason. **(05)**

1) For glass tinted lenses the concentration of the metals/metal oxides is less than 2% even for dense tint.
2) Prisms can be prescribed in aspheric lenses by decentration.
3) In progressive addition lenses near addition is written on nasal side.
4) Lenses made from High-Index materials generally produce less surface reflections.
5) Fresnel's equation gives the amount of light absorbed by the lens.

Marks Obtained: _____ Signature of the Invigilator: _____

Signature of the Examiner: _____

II. B.OPTOM SEM-IV: WINTER - 2021
SUBJECT: OPTICS AND REFRACTION

Day: Saturday
Date: 16/10/2021

W-2021 - 841

Time: 2:00P.M.TO 5:00 PM
Max.Marks: 50

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 **30 Marks**
2) Section A is given on a SEPERATE sheet and has to be answered on the same sheet. This sheet should be completed with 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 **6** short questions and any **FIVE** questions have to be answered on the separate answer sheet.
5) Draw neat labeled diagrams **WHEREVER** necessary.

SECTION-B

Q.4 Answer **ANY TWO** of the following: **(20)**

1) Write in detail about newer trends in PAL's.
2) Explain in detail about organic and mineral photochromic lenses and their availability.
3) What is glare? How are various lenses helpful in reducing glare? Explain any three in detail.

SECTION-C

Q.5 Attempt **ANY FIVE** of the following: **(30)**

1) Discuss in detail about correction of anisometropia.
2) Write a short note on optical principle of anti-reflective coating.
3) A spectacle prescription is -8.50 DS. What are the corrective options in the form of spectacle lenses?
4) Which tints are recommended in following conditions and why?
   a) Shooters
   b) Color defectives
   c) Indoor
5) What are aspheric lenses? Explain how oblique astigmatism is reduced using aspheric surface.
6) Explain curve-variation factor with a suitable example.

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