

I. B. Optom. Sem-I : Summer-2018
SUBJECT: BASIC OPTICS

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

Seat No: _____

S-2018-3558

Day: Wednesday

Date: 18.04.2018

SECTION-A

Q.1 Fill in the blanks: (10)

- 1) Range of visible spectrum is _____ to _____ nm.
- 2) The ratio of image size to object size is called _____.
- 3) Newton's theory says that light is in form of _____.
- 4) In a compound microscope there are two lenses 1. _____, 2. _____.
- 5) The optical fibre works on _____ principle.
- 6) The reflection of light on any lens is controlled or reduced by _____ coating.
- 7) Spectrometer is used to _____.
- 8) One foot candle is equal to _____ lumen per sqft.
- 9) A polarized light has electrical and magnetic wave _____ to each other.
- 10) High powered plus lenses produce _____ type of distortion.

Q.2 State True or False. (05)

- 1) Lensometer measures effective power of lens.
- 2) The angle of refraction in total internal reflection is 90° .
- 3) The combination of red- green color gives rise to yellow secondary colour.
- 4) The unit of curvature is 'mm'.
- 5) To eliminate spherical aberration, toroidal surface are **not** used.

Q.3 Match the following: (05)

Material	R.I.
1) Crown glass	a) 1.586
2) CR 39	b) 1.523
3) Polycarbonate	c) 1.601
4) Trivex	d) 1.498
5) Flint glass	e) 1.532

Signature of the Invigilator

Signature of the Examiner

Total Marks Obtained _____

I -B.OPTOM. SEM – I : SUMMER - 2018
SUBJECT: BASIC OPTICS

Day: Wednesday
Date: 18/04/2018

Time: 02.00 PM TO 05.00 PM
Max. Marks: 70

S-2018-3558

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 **SEPARATE** sheet and has to be answered on the same sheet.
- 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

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

- 1) Define diffraction and explain single slit and double slit pattern.
- 2) Explain wave nature of light and its drawbacks.
- 3) Define aberrations and explain all types of aberrations with diagrams.

SECTION-C

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

- 1) Write a short note: Polarization
- 2) Calculate the image point when a real object is placed 35 cm in front of a + 7.00 D lens and explain how will be the image.
- 3) Explain magnifying power of simple and compound microscope.
- 4) Write a short note: Interference.
- 5) Write a short note: Scattering.
- 6) Write a short note: Cardinal points in thick lens.

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