

I. B. Optom. Sem-I: Winter-2018

SUBJECT: BASIC OPTICS

Day : Tuesday
Date : 27-11-2018

Time : -
Max. Marks: 20.

W-2018-3718

Note: 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.

Seat No. _____

SECTION-A

Q.1 Fill in the blanks: (10)

- 1) Focal length of a + 20.00 D lens is _____.
- 2) Achromatic lens means _____.
- 3) If two sources emit light waves of the same frequency, nearly the same amplitude and are always in phase with each other are said to be _____.
- 4) According to Newton's theory, the light is in the form of _____.
- 5) _____ is known as True power of lens.
- 6) Magnification means _____.
- 7) Refractive index of Crown glass is _____.
- 8) Abbe value of CR 39 material is _____.
- 9) Huygen suggested the existence of hypothetical medium called _____ in the space vacuum.
- 10) The wavelength of UVA ranges _____.

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

- | | |
|--------------------------|---------------------------|
| 1. Spherical Aberrations | a) High minus lens |
| 2. Coma Aberrations | b) Peripheral Aberrations |
| 3. Chromatic Aberrations | c) High plus lens |
| 4. Barrel Distortion | d) Off axis Aberrations |
| 5. Pincushion Distortion | e) On axis Aberrations |

b) Answer the following in one sentence. (05)

- 1) Velocity of light in air.
- 2) Constructive interference.
- 3) Destructive interference.
- 4) What is photometry?
- 5) Define Lumen.

Marks Obtained: _____

Signature of Invigilator: _____

Signature of Examiner: _____

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

Day : Tuesday
Date : 27/11/2018

W-2018-3718

Time : 10.00 AM TO 01.00 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 **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 attempt **ANY TWO** questions have to be answered on **SEPARATE** answer sheet.
 - 4) **Section – C** has short questions and attempt **ANY FIVE** questions have to be answered on **SEPARATE** answer sheet.
 - 5) Draw neat labeled diagram **WHEREVER** necessary.
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SECTION-B

Q.3 Answer in detail **ANY TWO** of the following: **(20)**

- a) Explain in detail Dual Nature of Light.
- b) Derive thin lens equation with proper well labeled diagram.
- c) Explain colour theories.

SECTION-C

Q.4 Write in short **ANY FIVE** of the following: **(30)**

- a) Fiber optics.
- b) Spectrum.
- c) Polarization.
- d) Cardinal points in thick lens.
- e) Refraction through convex lens and image formation.
- f) Telescopes.

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