I- B Optom - Sem I · SUMMER· 2019
SUBJECT: BASIC OPTICS

Day : Tuesday   Time : —
Date : 26-03 2019   S-2019-4000   Max. Marks: 20.

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)   Velocity of light in m/s is _____

2)   Barrel shape distortions are produced by _____ lens.

3)   The color has 3 characteristics, which are _____, _____ and _____.

4)   The equation for reflection coefficient of mirror is _____.

5)   Secondary focal point of plus lens is defined as _____.

6)   The unit of lens Power and Vergence is _____.

7)   Lloyds mirror gives experimental evidence to _____.

8)   The idea of quantum nature of light has emerged in an attempted to explain _____.

9)   Linear magnification is defined as _____.

10)   _____ power is said to be true power of lens.

Q.2   Match the following: **(10)**

1.   Angular magnification of simple microscope   a)   Change in velocity

2.   Space before refraction   b)   Cannot be formed on screen

3.   Cardinal points in eye   c)   Off axis aberration

4.   One foot candle   d)   Object space

5.   Angle of refraction in total internal reflection   e)   2 Focal points, 2 Principal points, 2 Nodal points

6.   Virtual image   f) $M = 1 + D/f$

7.   Tungsten filament   g)   1 lumen per sq.ft.

8.   Coma aberration   h)   Greater than 90°

9.   Visible spectrum   i)   Thermal sources

10.   Refraction   j) $380 - 760$ nm

Marks Obtained: _____   **Signature of Invigilator:** _____

Signature of Examiner: _____

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I -B.OPTOM. SEM – I : SUMMER - 2019
SUBJECT: BASIC OPTICS

Day   Tuesday   Time   02.00 PM TO 05.00 PM
Date   26/03/2019   Max. Marks: 50.

S-2019-4000

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 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.

SECTION-B

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

a) What is Monochromatic Aberration? Explain Oblique Astigmatism, Coma and Curvature of image in detail.

b) Discuss the principle, construction and uses of Fiber optics in detail.

c) Define Vergence. The light of position A has a vergence of +5.00D. What is the vergence at position B, which is 20 cm downstream from position A and at position C, which is 30 cm downstream from A.

SECTION-C

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

a) What is photometry? Define units of illumination.

b) Write short notes on:
   i)   Path difference and phase difference
   ii) Coherent sources
   iii) Additive color theory

c) Geneva lens measure.

d) Construction of Astronomical telescope with suitable diagram.

e) What is Magnification? Explain different types of magnification.

f) Write short note on Sign Conventions with diagram.

g) Cardinal points in thick lens.

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