BACHELOR OF CLINICAL OPTOMETRY
I-B. Optometry Sem-I : WINTER :- 2021
SUBJECT: BASIC OPTICS

Day : Monday
Date 7/3/2022

W-827-2021

Time : 10:00 AM-01:00 PM
Max. Marks: —

N.B.:
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 examination. The sheet with Section A only will be collected by the Supervisor.

Seat No. _____

SECTION-A

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

i) One lumen = _____

ii) Refractive Index for crown glass is _____

iii) The waves used by artificial satellites for communication is _____

iv) Where two waves of same amplitude add constructively, the intensity becomes _____

v) In concave mirror size of image depends upon _____

vi) The focal length of a lens whose power is – 1.50 DS is _____

vii) Range of visible spectrum is _____ to _____

viii) Spectrometer is used to _____

ix) _____ type of distortion is seen with high plus lens.

x) The ratio of image size to object size is called _____

Q.2 State True or False : **(10)**

1. Effective power is said to be true power of lens.

2. In S.H.M. velocity at equilibrium position is highest.

3. Duochrome test is based on monochromatic aberration.

4. For a diverging lens focal length is negative.

5. When a ray of light enters from denser to rare medium it bends towards normal.

6. Optical fibre works on principle of diffraction.

7. The Abbe value of any material is more then chromatic aberration is more.

8. According to sign convention light travels in the direction of incident light is taken as negative.

9. To eliminate spherical aberration aspheric surfaces are used.

10. The ray passing through focal center goes undeviated.

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N.B.:

1) There are three sections as
   Section A = Objective Type questions - 20 marks
   Section B = Long Answer questions - 20 marks
   Section C = Short Answer questions - 30 marks
2) Section A is given in **SEPARATE** sheet and has to be answered on 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 Supervisor.
3) Section B has three long questions and **ANY TWO** questions have to be answered on separate answer sheet.
4) Section C has six short questions and **ANY FIVE** questions have to be answered on separate answer sheet.
5) Draw neat labelled diagram **WHENEVER** necessary.

SECTION-B

Q.3 Attempt **ANY TWO** of the following: **(20)**

i) Explain in detail about different types of telescope.

ii) What is the principle of interferences fringes? Explain with appropriate derivation for bright and dark fringes.

iii) What is photometry? Explain different types of photometer in detail.

SECTION-II

Q.4 Attempt **ANY FIVE** of the following: **(30)**

i) State and prove Brewster's law.

ii) Describe and explain the formation of Newton's Ring in reflected monochromatic light.

iii) Write a short note on chromatic aberration.

iv) Write a note on cardinal points.

v) Explain sign convention.

vi) Write a short note on S.H.M.

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