

**BACHELOR OF CLINICAL OPTOMETRY**  
**II-B. Optometry Sem-IV : WINTER- 2022**  
**SUBJECT : OPTICS & REFRACTION ( T )**

Day : Thursday

Time : 10:00 AM-01:00 PM

Date : 8/12/2022

**W-841-2022**

Max. Marks : 20

**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 the examination. This sheet with Section – A only will be collected by Supervisors.

**Seat No. :** \_\_\_\_\_

**SECTION – A**

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

- a) When part of the lower, nasal portion of a lens shape is removed to allow for a better fit, it is called a \_\_\_\_\_.
- b) \_\_\_\_\_ type of temple style is indicated for jobs requiring unusual head positions.
- c) When a lens is measured in the normal manner, with the front side of the lens against the Lensometer stop, the power being measured is called \_\_\_\_\_.
- d) In progressive Addition Lenses the distance between two microitchings is \_\_\_\_\_ cm.
- e) The most effective method recommended by manufacturer for deleting the exposure memory in photochromic lenses is \_\_\_\_\_.
- f) If A size is 47mm, B size is 39mm, DBL is 20 mm and ED is 48mm ; then DBC will be \_\_\_\_\_ mm.
- g) ASTM stands for \_\_\_\_\_.
- h) Jack in the box phenomenon occurs in \_\_\_\_\_ type of lenses.
- i) A difference more than \_\_\_\_\_ % in retinal image sizes of two eyes, is not tolerable and is matter of concern.
- j) \_\_\_\_\_ frames comes with swinging bridge and swinging sides which allow the spectacle to be worn upside down.

**P.T.O.**

- Q.2** Match the following **(05)**
- |                            |                                 |
|----------------------------|---------------------------------|
| 1) Blue cut lenses         | i) Transitions Xtractive lenses |
| 2) Photochromics           | ii) Eyezen                      |
| 3) ARC                     | iii) Cosmolit                   |
| 4) Polycarbonate           | iv) Photofusion X lenses        |
| 5) Polaroid + Photochromic | v) Techshield                   |

- Q.3** State **True** or **False** (If false give reason) **(05)**
- a) Visual acuity is better with Fresnel prisms than with conventional prisms.
  - b) An AR coated lens is best cleaned in office by using an ultrasonic cleaner.
  - c) Compared with a soft design, a hard design usually provides a wider area of high visual acuity in the distance portion of the lens.
  - d) According to Knapp's law, axial ametropia should be corrected with contact lenses.
  - e) Lensmeter is used to check for strain in a lens.

**Total Marks Obtained :** \_\_\_\_\_

**Signature of the Invigilator :** \_\_\_\_\_

**Signature of the Examiner :** \_\_\_\_\_

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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 **20 Marks.**
  - 2) Section A is given on a **SEPARATE** 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 three long questions and **Any TWO** questions have to be answered on the separate answer sheet.
  - 4) Section C has six short questions and **Any FIVE** questions have to be answered on the separate answer sheet.
  - 5) Draw neat labeled diagrams **WHEREVER** necessary.
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**SECTION – B**

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

- a) What are absorptive lenses? Explain the need for absorptive lenses? Enlist all the absorptive lenses and explain the importance of each type with its availability in India.
- b) What are different lens coatings available in India? Explain any two coatings in detail.
- c) Write in detail about Fresnel's Prism.

**SECTION – C**

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

- a) Write a short note on Iseikonic lenses.
- b) What precautions should be taken while dispensing the progressive addition lenses, so that chances of troubleshooting are fewer.
- c) Enlist the special purpose frames. Explain any 2 in detail.
- d) Explain cosmetic dispensing in brief.
- e) Write a short note on lenticular lenses.
- f) What is Knapp's law? Brief about its uses and limitations.

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