

FIRST YEAR M. OPTOM. : SUMMER - 2019

SUBJECT: APPLIED OPTICS

Date: Friday
Date: 19/04/2019

S-2019-4017

Time: 09.30 A.M. TO 11.30 A.M.
Max. Marks: 50

N.B:

- 1) Answer Section-A and Section-B on **SEPARATE** answer sheets.
- 2) Section A is of objective questions for total **20 marks**.
- 3) Section **B** is of short questions for total **30 marks**.

SECTION-A

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

- 1) Fresnel presses on prisms are made up of a _____ material, with a refractive index of _____.
- 2) If refractive index of vitreous humor decreases, refractive error shifts towards _____.
- 3) Retinoscopy done with active accommodation is termed as _____.
- 4) Negative toric lenses are optically advantageous than positive toric lenses due to the result of _____ being less.
- 5) ARC eliminates surface reflections using principles of _____.
- 6) Refractive anisometropia is better corrected with _____.
- 7) Most important feature of Physio 360 is _____.
- 8) In a multi coated lens, _____ is the most superficial coat.
- 9) Binocular balancing is meant to balance the _____ between the two eyes.
- 10) Specific gravity of polycarbonate is _____.

B) State True or False. Give reasons in short. (10)

- 1) It is not possible to remove the tint which is already applied on a CR-39 lens and dye it with a different color.
- 2) Cylinder powers are not available in Fresnel press-on lenses.
- 3) In JCC test, the interval of Sturm's is unchanged with either position of the cross cylinder.
- 4) The concentration of metals and metallic oxides incorporated to produce colors in lenses is always more than 2%.
- 5) According to Stephens and Davis, polycarbonate has 20 times the impact resistance of CR-39.
- 6) Oblique Astigmatism exists only for point object, not for extended objects.
- 7) The birefringence patterns seen in thermal tempering are usually characterized as maltase cross patterns.
- 8) Accommodative infacility can be diagnosed by RAF rule.
- 9) Duochrome test cannot be performed on color deficient person.
- 10) Spasm or accommodation is more common in myopes.

P.T.O.

SECTION-B

Q.2 Answer **ANY SIX** of the following: **(30)**

- 1) What is contrast sensitivity? In what conditions it gets affected? Write down methods to treat it.
- 2) The subjective value and objective value of refraction for a patient do not match, what could be the possible causes? How will you manage the case?
- 3) Write a note on Enhanced Near Vision lenses with example.
- 4) In an eye camp, if you are doing retinoscopy without the help of any trial lenses how would you estimate the refractive error of the patient?
- 5) Write about the working principles, uses and limitations of the following:
 - i) JCC
 - ii) W4D Test
- 6) Which companies manufacture the following products? Also write the important features of these products in brief:
 - i) Crizal
 - ii) Airwear
 - iii) Access
 - iv) Physio 360
 - v) Adapter
 - vi) Panorama Mini
- 7) Whom would you prescribe the following lenses as first choice and why?
 - i) Anti- reflection coated lenses
 - ii) Polarizing lenses
 - iii) Enhanced near vision lenses

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