Sl.No. M21667 **Course Code: 2740201/ 27417201**

VINAYAKA MISSION'S RESEARCH FOUNDATIONS, SALEM
(Deemed to be University)

B.OPTOMETRY DEGREE EXAMINATION – August 2019
Second Year

OPTOMETRIC OPTICS

Time: Three hours Maximum: 80 marks

I Choose the best answer (10 x 1 = 10)

1. The Univis D segment size is
   a) 20x 16 mm b) 20x 19 mm
   c) 22x 16 mm d) 22x 19 mm
2. Two cylinders of equal power but opposite sign placed together with their axes _____
   a) Perpendicular b) Parallel
   c) Oblique d) None of the above
3. Which of the following is incorrect?
   a) Hydrophobic coatings usually have the same refractive index as the antireflection.
   b) Hard coatings are often applied underneath an anti- reflection coating.
   c) Single- layer anti- reflection coatings meeting the amplitude condition are usually a half wavelength thick.
   d) Hydrophobic coatings are usually much thinner than anti reflection coatings.
4. Which statement is <u>incorrect</u> about saddle bridge.
   a) It rests directly on the crest of the nose, having no pads to contact the sides of the nose,
   b) Dose not follow the bridge of the nose smoothly.
   c) Spreads the weight of the frame evenly over the sides & crest of the nose.
   d) Preferred in plastic frames.
5. Cloth marks can be detected by
   a) Shadowing b) Reflection
   c) Transmission d) Absorption
6. The lens size of a given lens is 38 mm and the b- size is 15 mm. The frame difference is
   a) 23 mm b) 24 mm
   c) 22 mm d) 20 mm
7. This type of wood if eaten is toxic (used as a material to make spectacle frames)
   a) Boxwood b) Beech
   c) Yew d) Cedar

8. Face form is
   a) When front of spectacle is bowed inward.
   b) When front of spectacle is bowed outward.
   c) When front of spectacle is bowed sideways.
   d) When two lens are not in same vertical plane, one lens being tilted inward (or outward) with respect to other.

9. _____ bifocals are called as no jump bifocats
   a) D bifocals
   b) Kryptok
   c) Executive
   d) Ribbon

10. Combination of a -1.50D lens and a -2.0D lens will result in a focal length of
   a) 25 m b) 25cm
   c) 25m- 1 d) 25nm

II State whether the following statements are **TRUE** or **FALSE** (10 x 1 = 10)

1. The vertical distance from the segment top to the distance optical centre is called segment height.
2. Minimum size uncut = lens diameter + resultant decentration.
3. +6.00DS – (-4.00DS) = -10.00DS
4. Crown Glass is soda lime silica glass.
5. The field of view increases on using negative lenses.
6. Hollow tool is required for working convex lenses.
7. Cobalt gives pinkish brown colour to a lens.
8. For a negative meniscus lens, the centre thickness is given by the formula $\mathbf{t = e - s_2 + s_1}$.
9. If a convex lens is moved away from the eye, its back vertex power must be increased in order that it has the same effective power at the eye.
10. The binasal notation of left eye 135 is same as left eye 134 of bitemporal notation.

III Fill in the blanks: (10 x 1 = 10)

1. _____ curve has the minimum power surface in toric lens
2. _____ temples are used for frequent on and off wear.
3. Multiple edge reflections are seen in high _____ lenses.
4. All distances measured below the optical axis are _____
5. The refractive index of CR 39 is _____
6. The test for checking an astigmatic lens is called _____ test.
7. In prentice rule, P = cF, c stands for _____
8. Barrel and pincushion are types of _____
9. The horizontal measurement of a spectacle lens in a frame is called _____
10. _____ pliers; Used for rimless eyeglass frames.

IV Write any **FIVE** answers of the following: (5 x 6 = 30)

1. Define surfacing and its steps. Define glazing.
2. Prism
   a. Definition
   b. Units
   c. Rotary
   d. Fresnel
3. Lenticular lenses and types.
4. Write the toric transposition for + 1.00DS/ -2.50DC*90 with BC of +6.00DS.
5. Tabulate properties of crown glass and polycarbonate.
6. Resolve 3^{Δ} BU and BI @ 45 and 2^{Δ} BU and BO @ 135 in the RE into its resulatant components.
7. Manufacturing method of glass – Continuous flow method.

V Write any **TWO** essays of the following: (2 x 10 = 20)

1. Aberrations in ophthalmic lenses.
2. (a) Illustrate the boxing system in detail along with measurements and markings for bifocal lens also
   (b) Illustrate ghost images in a spectacle lens and reflections at the diving line of a bifocal.
3. Write on frame selection in detail.

*****

(Sl.No. M21667)