

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

B.OPTOMETRY DEGREE EXAMINATION – August 2018

First Year

GEOMETRIC OPTICS

Time: Three hours

Maximum: 80 marks

I Choose the best answer

(5 x 1 = 5)

1. Luminescence is because of
 - a) Photons with excited electrons drop down
 - b) Knocking out of electrons by photons
 - c) Photons stimulate by photons
 - d) All
2. What is the power of the lens if the far point of a short sighted eye- 200m
 - a) -0.5 D
 - b) 2D
 - c) 1D
 - d) - 1.5D
3. The output wavelength of Ruby laser is
 - a) 694.3nm
 - b) 632.8 nm
 - c) 556.2nm
 - d) 601.3nm
4. The head mirror used by ENT doctors is
 - a) Concave
 - b) Convex
 - c) Cylindrical
 - d) Compound
5. A ___ uses large mirrors to bring into distance object into close view
 - a) Microscope
 - b) Telescope
 - c) Oscilloscope
 - d) Kaleidoscope

II Fill in the blanks

(5 x 1 = 5)

6. Metals can _____ the light beam
7. The type of lens which is used as simple microscope _____
8. The first telescope was designed by _____
9. The magnifying power of microscope is increased by _____ is increased
10. The use of collimator in spectrometer is to _____

III Answer ALL questions:

(10 x 2 = 20)

1. What is chromatic aberration?
2. Define dioptic power
3. Define focal point
4. What is resolving power?
5. State the laws of reflection
6. Define population inversion
7. What is the principle used in fibre optic?
8. What is the use of microscope?
9. Define luminescence flux
10. Write some uses of photometers

(p.t.o)

-- (2) --

IV Write any **FIVE** answers of the following:

(5 x 6 = 30)

1. Write short note on temporal coherence
2. Explain in brief magnifying power of compound microscope
3. Explain the concept of spontaneous emission and stimulated emission
4. Derive an expression for circle of least confusion
5. Write a short note on working concept of simple microscope
6. Explain different type of pumping method
7. Write some application of fibre optics

V Write any **TWO** essays of the following:

(2 x 10 = 20)

1. Explain with neat diagram the construction and working of Ruby Laser
2. Describe in detail different type of lens aberrations
3. Derive an expression for the equivalent focal length of two thin coaxial lenses separated by finite distances

(Sl.No. M19237)