

M.Sc. Second Year (Physics) CBCS Pattern Semester-IV
PSCPHYT16.2 - Paper-XVI - Foundation Course-F2.2
Optics and Optical Instruments

P. Pages : 2

Time : Three Hours



GUG/W/23/11420

Max. Marks : 80

Either:

1. a) Discuss telephoto lens and eyepieces in detail. 8
- b) Differentiate between Ramsden and Huygens eyepiece. 8

OR

- e) Explain aspherical mirror. What are the benefit of aspherical mirror? 8
- f) Discuss chromatic optical aberration and its types. 8

Either:

2. a) Derive an expression for resolving power of prism and grating. 8
- b) Discuss Fraunhofer diffraction by single slit. 8

OR

- e) Describe the construction and working of Nicol Prism. 8
- f) Discuss Fresnel's diffraction at a straight edge. 8

Either:

3. a) Discuss compound microscope. 8
- b) What is Binocular? Describe in detail how it works. 8

OR

- e) Discuss lens and SLR camera. 8
- f) Discuss in short Jeweler's glass and eyeglass. 8

Either:

4. a) Explain the principle and characteristic of holography. **8**
b) Explain the types of waveguide in optical fiber. **8**

OR

- e) Describe principle and working of CT Scanning. **8**
f) Discuss principle and process of X-Ray image production. **8**
5. Attempt all questions.
- a) Write short notes on astronomical telescope. **4**
b) Explain Michelson interferometer. **4**
c) Explain in short angular magnification. **4**
d) Write the principle of fluoroscopy. **4**
