S.Y.M.SC.(Physics) (CBCS Pattern) Fourth Semester CBCS

PSCPHYT16.2 - Optics and Optical Instruments Paper-16
(Foundation Course F 2.2)

P. Pages : 2 **GUG/W/18/11420**

Time : Three Hours * 3 5 1 1 * Max. Marks : 80

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1. Either.

a) Explain aberration in images & explain chromatic and monochromatic aberration. **8**

b) Explain Ramsden eyepiece and calculate focal length. **8**

OR

e) Explain in detail astronomical tele scope. **8**

f) Explain in detail cardinal point of an optical system. **8**

2. Either.

a) Explain construction and working of Michelson interferrometer. **8**

b) Explain construction of Fresnel's half period zone of the plane wave front show that half period zones are approximately equal areas. **8**

OR

c) Explain Rayleigh criterion for resolution and discuss resolving power of prism. **8**

d) Explain construction and working of Nicol prism. **8**

3. Either.

a) What is Binocular? Describe in detail how it works. **8**

b) Discuss prism spectroscope in detail. **8**

OR

e) Drawing cross section view of SLR system. Explain the each part of its in brief further state advantages and disadvantages of SLR. **8**

f) Explain following. **8**

i) Aperture ii) Eye piece.

iii) Collimeter. iv) Field glass.

4. Either.

a) What do you meant by holography? Describe how hologram is generated and images is reconstructed using off-axis configuration. **8**

b) Explain the term "Attenuation" in optical fibre. Describe various mechanism of attenuation. **8**

OR

e) With diagram, Explain principle and process of x-ray image production. **8**

f) What is the basic principle of CT scanning and describe its working. **8**

5. Attempt all of the followings:

a) Explain entrance and exit pupil. **4**

b) Distinguish between Grating spectra and prism spectra. **4**

c) Explain 'Periscope' with neat diagram & give its applications. **4**

d) What do you understand from Doppler ultrasound and explain it. **4**

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