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**FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL/MAY 2005**

(Vocational Courses)

Branch : Instrumentation

Vocational Subject—OPTICAL INSTRUMENTATION

Time : Three Hours

Maximum : 60 Marks

**Part A***Answer any eight questions in 1 or 2 sentences each.**Each question carries 2 marks.*

1. What are the methods used to reduce spherical aberration in mirrors ?
2. What is the purpose of plastic polishing.
3. Distinguish between step index and variable index fibres.
4. Define numerical aperture.
5. What are the light sources used for optical fibre communication ?
6. Explain the need for polishing a crystal.
7. Define magnifying power of a Telescope.
8. Bring out the difference between terrestrial and astronomical telescope.
9. What are the characteristics of LASER ?
10. Bring out the difference between ordinary microscope and Binocular microscope.
11. What are the different cutting tools used in optical component fabrication ?
12. Explain the principle of achromatic lenses.

(8 × 2 = 16 marks)

**Part B***Answer any six questions in 1 or 2 paragraph each.**Each question carries 4 marks.**Draw neat sketches wherever necessary.*

13. What are the characteristics of optical glasses.
14. Write a short note on spherical curve generator.
15. Explain the trepanning process for the production of Lenses.
16. Explain the method of curve generation in the fabrication of lenses.
17. Explain the process of correction of angle and flatness of a prism.
18. With a neat diagram explain the principle of auto collimator.
19. Explain the working of a profile projector.

Turn over