

(Following Paper ID and Numbers to be filled in your Answer books)

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Roll No:

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B.Tech

EXAMINATION, 2015-16

Subject: Optical Instrumentation

Code: EIC021

[Time: 3 Hours]

[Total Marks: 100]

SECTION-A

Q.1 Attempt all parts. All parts carry equal marks. Write answer of each part in short. (2 x 10=20)

- What are various sources of light?
- What do you mean by polarization?
- Differentiate between coherent & incoherent sources of light.
- Draw various led drive circuitry.
- Give the application of Laser in various industries.
- Write a brief note on prism monochromator.
- Explain the phenomenon of diffraction grating.
- Name different materials used for LED structures.
- Give classification of LASERS
- Explain electro-optic phase modulator

SECTION-B

Note: Attempt any 5 questions from this section. (10 x 5=50)

- Q.2 Explain electro, magneto and acousto optic effects. What are the applications of these effects in industry?
- Q.3 Explain the working of CO₂ Laser with diagram
- Q.4
- Q.5 Explain Intensity modulated: displacement type sensors in brief.
- Q.6 What are various phenomenonns which can be measured using light rays?
- Q.7 Explain various losses in optical fiber. Give a note on micro-bending losses.
- Q.8 Briefly explain the Febry Parot interferometer
- Q.9 Object is placed at a distance of 15cm and exhibits light of wavelength 390nm. Find out the color of an object as recorded on hologram Hence find the limit of resolution considering the frequency to be maximum frequency.

SECTION-C

Note: Attempt any 2 questions from this section. (15 x 2=30)

- Q.10 Differentiate between Frequency Domain dispersion measurement & time domain dispersion measurement.**
- Q.11 Explain the concept of holographic computer memories with the help of suitable diagram.**
- Q.12 Explain optical communication with diagram. What are the recent advancements in the field of optical communication system?**