

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Write a note on applications of optical fiber in field of Biomedical Engineering?

Q.24 Write a note on laser diode and its comparison with photodetector?

Q.25 Differentiate between solid, gas, liquid and semiconductor laser.

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Roll No.

4th Sem./ Medical Electronics

Subject : Laser and Fiber Optics in Medicine

Time : 3 Hrs.

M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 Relation between angle and refractive indexed is:

- a) Direct
- b) Indirect
- c) Equal
- d) None of these

Q.2 Types of LASER are:

- a) Solid
- b) Liquid
- c) Gas
- d) All of these

Q.3 LASER stands for:

- a) Light Amplification by Spontaneous Emission of Radiation
- b) Last Amplification by Stimulated Emission of Radiation
- c) Light Amplification by Stimulated Emission of Radiation
- d) None of these

- Q.4 Endoscopy is application of:
- a) Statistics b) Liquid
 - c) Optical Fiber d) None of these
- Q.5 Example of Solid LASER is:
- a) CO₂ LASER b) Argon LASER
 - c) ND-YAG Laser d) None of these
- Q.6 The incidence angle should be _____ than critical angle for TIR inside optical fiber is:
- a) Less b) Greater
 - c) Equal d) None of these

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

- Q.7 Define critical Angle.
- Q.8 Define Cladding.
- Q.9 Write thickness range of cladding?
- Q.10 Write two name of optical fiber connectors?
- Q.11 Write two examples of solid laser?
- Q.12 Define gastroscopy.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

- Q.13 Explain Optical fiber layers.
- Q.14 Explain Optical fiber modes.
- Q.15 Write any four properties of optical fiber.
- Q.16 Write a note on fiber material.
- Q.17 Differentiate between Attenuation and Absorption.
- Q.18 Differentiate between core and cladding losses inside optical fiber.
- Q.19 Write a note on principle of Endoscopy?
- Q.20 Write Endoscopic diagnostic and therapeutic techniques?
- Q.21 Write four Precautions while applying laser on body?
- Q.22 Write four properties of LASER?