

Con. 5168-09.

SP-6920

(3 Hours)

[Total Marks : 100

- N.B. :** (1) Question No. 1 is **compulsory**.
(2) Attempt any **four** questions out of remaining **five** questions.
(3) Assumptions made should be **clearly stated**.

1. Answer the following in brief :- 20
 - (a) Differentiate between spontaneous and stimulated emissions.
 - (b) Derive the relationship between LED current and optical output power.
 - (c) Coherent optical communication is preferred over non-coherent optical communication ? Why ?
 - (d) Explain the role of connectors in OFC.

2. (a) Optical fiber uses core and each made up of glass/plastic with different refractive indices. How these differences are caused. 20
(b) Explain how wavelength division multiplexing can be efficiently used to enhance communication.

3. (a) Derive the expression for output pulse and also explain the working of optical receiver. 20
(b) Explain the working of LED with a neat labelled block diagram.

4. (a) How does dispersion affect the transmission bandwidth of optical fibers ? 20
Explain any one technique to measure it.
(b) Explain the various parameters essential in point-to-point link design.

5. (a) How can OTDR-Meter be used in the measurement of communication (optical) ? 20
(b) Explain how RAPD can be used as an optical demodulator.

6. Write short notes on :- 20
 - (a) APD
 - (b) Linearly polarized modes.
