ME sem I / EXTC / CBCS / FH 2019

28/05/2019

(3 Hours)   [Total Marks: 80]

N.B.: (1)   Question No. **1 is compulsory.**

(2)   Solve any **three questions** from the **remaining five**

(3)   Figures to the right indicate full marks

(4)   Assume suitable data if necessary and mention the same in answer sheet.

Q.1   Attempt any 5 questions   [20]
a) Compare stimulated Raman scattering and stimulated Brillouin scattering
b) Explain Fabry Perot filters
c) Explain working principle of optical modulator.
d) Write the application of i) optical multiplexer(ii) Optical repeater in optical communication network
e) What is four wave mixing?
f) Explain array waveguide grating.

Q.2   a) Explain different phenomena responsible for signal degradation as the light   [10]
wave propagates through an optical fibre.
b) Explain working of vertical cavity surface emitting laser.   [10]

Q.3   a) Explain the working principal of optical amplifier. Compare Semiconductor   [10]
optical amplifier with erbium doped fibre amplifier.
b) Explain the operation principle of RCEPD with appropriate diagram.   [10]

Q.4   a) Explain in detail any MCVD method for fibre fabrication.   [10]
b) Explain First passage model and blocking model for statistical wavelength   [10]
routing network

Q.5   a) Explain Virtual tributaries in SONET.   [10]

b) Compare SONET and OTN network.   [10]

Q.6   Short notes on: (Attempt any two)   [20]
a) Mach Zander Interferometer
b) Unidirectional and bi directional WDM system.
c) Isolators and circulator
d) Optical Fiber Network Topologies

_____

0C2D777098F63A6EE2ADA0FE58B307D7