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5th Sem / Eltx, Power Eltx
Subject:- Optical Fiber Communication

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 Optical fiber has generally shape of a _____ (CO1)
a) Rectangle b) Circle
c) Ellipse d) square

Q.2 Multimode step index fiber has _____ (CO2)
a) Large core diameter & large numerical aperture
b) Large core diameter and small numerical aperture
c) Small core diameter and large numerical aperture
d) Small core diameter & small numerical aperture

Q.3 A device which converts electrical energy in the form of a current into optical energy is called as (CO4)
a) Optical coupler b) Optical source
c) Optical isolator d) Circulator

Q.4 Numerical aperture is expressed as the _____ (CO2)
a) Na sin qa b) NA = cos qa
c) NA = tan qa d) NA = sec qa

Q.5 LASER stands for_____ (CO4)
a) Light amplification by stimulated emission of radiation.
b) Light amplification by standard emission of radiation
c) Light amplification with synchronous emission of radiation
d) None of the above

Q.6 An optical fibber is made up of _____ material. (CO1)
a) Copper b) Glass
c) Ceramic d) None

Q.7 Which fibber is used for long distance communication? (CO2)
a) Multimode fiber b) Single-mode fiber
c) graded index fiber d) none of the above

Q.8 The LASER was invented in the year (CO4)
a) 1964 b) 1965
c) 1960 d) 1959

Q.9 FPA stands for (CO6)
a) Fabry Parot application
b) Fabry Parot amplifier
c) Fiber Parot application
d) Pabry power amplifier

Q.10 SOA stands for (CO6)
a) Sand optical amplifier
b) Similar optical amplifier
c) Semiconductor optical amplifier
d) Semiconductor optical amplification

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 The frequency range of optical fiber communication is_____ (CO1)

Q.12 Write one property of good connector. (CO2)

Q.13 Expands OTDR (CO3)

Q.14 Multimode fiber does not suffer Inter model dispersion(T/F) (CO3)

Q.15 ELED stands for _____ (CO4)

Q.16 The most common photo detector is_____ (CO5)

Q.17 The principle of LED is_____ (Stimulated/ Spontaneous emission) (CO4)

Q.18 ILD stands for _____ (CO4)

Q.19 Expand APD. (CO4)

Q.20 Name the principle of light propagation in optical fiber communication? (CO1)

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain block diagram of optical fiber communication. (CO1)

Q.22 Explain basic construction of optical fiber. (CO2)

Q.23 Explain connectors in optical fiber. (CO2)

Q.24 Write a short note on critical angle.. (CO1)

Q.25 Write a short note on APD. (CO5)

Q.26 Differentiate between single mode and multimode optical fiber. (CO2)

Q.27 Explain optical amplifier in detail. (CO6)

Q.28 Define fiber loss. Discuss bending loss in optical fiber. (CO3)

Q.29 Write any 5 difference between LED and LASER. (CO4)

Q.30 Write a short note on Rayleight scattering. (CO3)

Q.31 Write any 5 advantages of LED. (CO4)

Q.32 Discuss about optical frequency range. (CO1)

Q.33 Write a short note on SOA. (CO6)

Q.34 Explain the principle of total internal reflection. (CO1)

Q.35 Explain the working principle of LASER Diode. (CO4)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Explain the principle of operation of EDFA. Write its advantages and disadvantages. (CO6)

Q.37 Explain in detail about dispersion phenomenon. How many types of dispersion losses are there? How can we reduce them? (CO3)

Q.38 Explain in detail following : (CO5)

a) Construction of PIN diode

b) Performance characteristics of PIN diode