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181054/171054/
121054/031054B

5th Sem / Branch : Eltx,Power Eltx.
Sub. : Optical Fiber Communication

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 The frequency range for optical fiber communication is from
a) 10^{13} to 10^{16} Hz b) 10^{13} to 10^{18} Hz
c) 10^{12} to 10^{15} Hz d) None of these

Q.2 In optical fiber communication the repeaters are required at a distance of
a) 10 km b) 50 km
c) 300 km d) 1000 km

Q.3 On the basis of mode of wave propagation the optical fibers are divided into _____ types
a) Two b) Four
c) Three d) None

Q.4 An optical fiber consists of
a) Core b) Cladding
c) Buffer d) All of above

Q.5 From the given parameters which is an example of permanent joint
a) Connectors b) Splice
c) Couplers d) None

Q.6 Dispersion causes the light pulse to get_____
a) Stretched b) Broadened
c) Lengthened d) None

Q.7 An optical light source converts
a) Electrical signal to optical signal
b) Optical signal to electrical signal
c) Both
d) None

Q.8 Attenuation in an optical fiber is caused by
a) Absorption b) Scattering
c) Bending d) All of these

Q.9 The unit of dispension is
a) Picoseconds/km/nm b) Picoseconds
c) Kilometer d) Nanometer

Q.10 ILD is a
a) Coherent source of light
b) Incoherent source of light
c) Both A and B
d) None

SECTION-B

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

Q.11 Give full form of LED.

Q.12 Give two application of optical fiber.

Q.13 The principle which is used for the propagation of light in optical fiber cable is known as _____.

Q.14 Give full form of APD.
Q.15 Define reflection.
Q.16 Light travels through core in optical fiber cable. (True/False)
Q.17 Optical losses are less in mechanical splicing as compared to fusion splicing. (True/False)
Q.18 Which light source is better for long transmission LED or LASER.
Q.19 Define dark current regarding optical detectors.
Q.20 Give full form of SOA and EDFA.

SECTION-C

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

Q.21 Explain principle of light penetration.
Q.22 What are the advantages of optical fiber communication?
Q.23 Write a note on total internal reflection and critical angle.
Q.24 Briefly explain the acceptance angle.
Q.25 Describe single mode step index fiber.
Q.26 Explain Rayleigh Scattering.
Q.27 Describe macrobending losses in optical fibers.
Q.28 Explain material dispersion in brief.
Q.29 What do you understand by spontaneous emission?
Q.30 Describe LED and its structures.
Q.31 Explain LASER in brief.

Q.32 Write a short note on PIN photodiode.
Q.33 Write a note on Noise in detectors.
Q.34 Explain SOA in brief.
Q.35 Give the principle of RAMAN Amplifier.

SECTION-D

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

Q.36 Describe splicing technique regarding optical fibers in detail.
Q.37 Explain working of OTDR with suitable diagram.
Q.38 Explain Dispersion and its different types in detail.