

NADAR SARASWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch : BE / EEE	Year / Semester : IV / VII	Format No.	NAC/TLP-07a.13
Subject Code : EI8075	Subject Name : Fibre Optics and Laser Instrumentation	Rev. No.	02
Unit No : 01	Unit Name : Optical Fibres and Their Properties	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

S. No.	Objective Questions (MCQ /True or False / Fill up with Choices)	BTL
1	In an optical fiber communication system, which among the following is not a typical transmitter function? A) Coding for error protection B) Decoding of input data C) Electrical to optical conversion D) Recoding to match output standard	L1
2	In single-mode fibers, how does the fraction of energy traveling through bound mode appear in the cladding? A) As a crescent wave B) As a gibbous wave C) As an evanescent wave D) All of the above	L2
3	If a light travels in a certain medium and it gets reflected off an optically denser medium with high refractive index, then it is regarded as _____ A) External Reflection B) Internal Reflection C) Both a and b D) None of the above	L1
4	In an optical fiber, the concept of Numerical aperture is applicable in describing the ability of _____ A) Light Collection B) Light Scattering C) Light Dispersion D) Light Polarization	L1
5	Which type of fiber optic cable has/have its/their core with the size of about 480 μm to 980 μm & made up of polymethylmethacrylate (PMMA)? A) Glass fiber optic cable B) Plastic fiber optic cable C) Plastic clad silica fiber optic cable D) All of the above	L3

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6	In the fiber optic link, power transfer from one fiber to another and from fiber to detector must take place with _____coupling efficiency. A) Maximum B) Stable C) Minimum D) Unpredictable	L2
7	Which component of an optical receiver is a linear frequency shaping filter used for the compensation of signal distortion and Inter Symbol Interference (ISI)? A) Photodetector B) Amplifier C) Equalizer D) None of the above	L2
8	In the structure of fiber, the light is guided through the core due to total internal _____. A) Reflection B) Refraction C) Diffraction D) Dispersion	L1
9	In the structure of a fiber, which component provides additional strength and prevents the fiber from any damage? A) Core B) Cladding C) Buffer Coating D) None of the above	L1
10	Which rays exhibit the variation in the light acceptability ability of the fiber? A) Meridional B) Skew C) Leaky D) All of the above	L2
11	With respect to single mode and graded index fibers, which parameter specifies the propagation of polarization modes with different phase velocities & the difference between	L2

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	<p>their effective refractive indices?</p> <p>A) Mode field diameter B) Birefringence C) Fiber beat length D) Spot Size</p>	
12	<p>Which of the following is not a common application of fiber-optic cable?</p> <p>A) Computer networks B) Long-distance telephone systems C) Closed circuit TV D) Consumer TV</p>	L1
13	<p>Total internal reflection takes place if the light ray strikes the interface at an angle with what relationship to the critical angle?</p> <p>A) Less than B) Greater than C) Equal to D) Zero</p>	L1
14	<p>The operation of the fiber-optic cable is based on the principle of</p> <p>A) Refraction B) Reflection C) Dispersion D) Absorption</p>	L1
15	<p>Which of the following is not a common type of fiber-optic cable?</p> <p>A) Single-mode step-index B) Multimode graded-index C) Single-mode graded-index D) Multimode step-index</p>	L2
16	<p>The core of a fiber optic cable is made of</p> <p>A) Air B) Glass C) Diamond D) Quartz</p>	L2

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17	The speed of light in plastic compared to the speed of light in air is A) Slower B) Faster C) The same D) Either lower or faster	L2
18	Which of the following is not a major benefit of fiber-optic cable? A. Immunity from interference B. No electrical safety problems C. Excellent data security D. Lower cost	L1
19	Refraction is the A. Bending of light waves B. Reflection of light waves C. Distortion of light waves D. Diffusion of light waves	L1
20	The ratio of speed of light in air to the speed of light in another substance is called the A) Speed factor B) Index of reflection C) Index of refraction D) Dielectric constant	L2
21	A distance of 8 km is the same as A) 2.5 mi B) 5 mi C) 8 mi D) 12.9 mi	L2
22	Most fiber-optic light sources emit light in which spectrum? A) Visible B) Infrared C) Ultraviolet D) X-ray	L1

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23	<p>Single-frequency light is called</p> <p>A) Pure B) Intense C) Coherent D) Monochromatic</p>	L1
24	<p>Both LEDs and ILDs operate correctly with</p> <p>A) Forward bias B) Reverse bias C) Neither A or B D) Either A or B</p>	L3
25	<p>Which fiber-optic system is better?</p> <p>A) 3 repeaters B) 8 repeaters C) 11 repeaters D) 20 repeaters</p>	L2
26	<p>What is used to block light from a laser and let other light through</p> <p>A) Neutral density B) Color C) Interference D) Spatial</p>	L2
27	<p>Which of the cable length has the highest attenuation?</p> <p>A) 1 km B) 2 km C) 95 ft D) 5500 f</p>	L1
28	<p>In digital receivers, which codes are used to designate the sampled analog signals after their quantization into discrete levels?</p> <p>A) Binary B) Decimal C) ASCII</p>	L1

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	D) Excess-3	
29	<p>In Rayleigh scattering of light in glass, at which type of temperature does the glass attain the state of thermal equilibrium and exhibits its relativity to annealing temperature?</p> <p>A) Junction B) Fictive C) Breakdown D) Decomposition</p>	L3
30	<p>The wavelength of visible light extends from</p> <p>A) 0.8 to 1.0 nm B) 400 to 750 nm C) 200 to 660 nm D) 700 to 1200 nm</p>	L1
31	<p>Which of the cable length has the highest attenuation?</p> <p>A) 1 km B) 2 km C) 95 ft D) 5500 ft</p>	L1
32	<p>Cable attenuation is usually expressed in terms of</p> <p>A) Loss per foot B) dB/km C) intensity per mile D) voltage drop per inch</p>	L3
33	<p>What is used to block light from a laser and let other light through</p> <p>A) Neutral density B) Color C) Interference D) Spatial</p>	L1
34	<p>Which of the following is the fastest light sensor</p> <p>A) PIN photodiode B) Photovoltaic diode C) Phototransistor</p>	L1

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	D) Avalanche photodiode	
35	<p>The ultrapure glass used to manufacture optical fibers is approximately ____ pure</p> <p>A) 99.9 % B) 99.99 % C) 99.999 % D) 99.9999 %</p>	L2
36	<p>_____ is the result of photons of light that are absorbed by the atoms of the glass core molecules</p> <p>A) Ion resonance absorption B) Ultraviolet absorption C) Infrared absorption D) Absorption loss</p>	L2
37	<p>What parameter of light detector determines the range or system length that can be achieved for a given wavelength?</p> <p>A) Transit time B) Spectral response C) Dark current D) Responsivity</p>	L1