404190 **Item Bank Name** **Broadband Communication Systems**

Item Text	Option Text 1	Option Text 2	Option Text 3	Option Text 4
An optical fiber has core-index of 1.480 and a cladding index of 1.478. What should be the core size for single mode operation at 1310nm?	7.31µm	8.71µm	5.26µm	6.50µm
A single mode fiber has mode field diameter 10.2µmand V=2.20. What is the core diameter of this fiber?	11.1µm	13.2µm	7.6µm	10.1µm
A monochromatic wave propagates along a waveguide in z direction. These points of constant phase travel in constant phase travel at a phase velocity Vp is given by	Vp=ω/β	Vp=ω/c	Vp=C/N	Vp=mass/acceleration
A multimode step index fiber has a large core diameter of range _____	100 to 300 µm	100 to 300 nm	200 to 500 µm	200 to 500 nm
Multimode step index fibers have a bandwidth of _____	2 to 30 MHz km	6 to 50 MHz km	10 to 40 MHz km	8 to 40 MHz km
Multimode graded index fibers with wavelength of 0.85µm have numerical aperture of 0.29 have core/cladding diameter of _____	62.5 µm/125 µm	100µm/140 µm	85 µm/ 125 µm	50 µm/ 125µm
Which law gives the relationship between refractive index of the dielectric?	Law of reflection	Law of refraction (Snell's Law).	Millman's Law	Huygen's Law
The _____ ray passes through the axis of the fiber core.	Reflected	Refracted	Meridional	Skew
Light incident on fibers of angles_____the acceptance angle do not propagate into the fiber.	Less than	Greater than	Equal to	Less than and equal to

What is the numerical aperture of the fiber if the angle of acceptance is 16 degree ?	0.5	0.36	0.2	0.27
The ratio of speed of light in air to the speed of light in another medium is called as_____	Speed factor	Dielectric constant	Reflection index	Refractive index
Which is the correct order of sequential steps for an electric arc fusion technique? A. Pressing of fiber ends for fusion B. Application of heat for smoothening of end-surfaces C. Alignment of broken fiber edges	A, B, C	B, A, C	C, B, A	C, A, B
Fiber-optic cables with attenuations of 1.8, 3.4, 5.9, and 18 dB are linked together. The total loss is	7.5 dB	19.8 dB	29.1 dB	650 dB
Which among the following is provided by an optical receiver for the regeneration of data signal with minimum error?	Photo-diode	Signal Processing Circuits	Linear Circuitry	Connector
Which among the following represents the measure/s to minimize the inhomogenities for Mie scattering reduction?	Extrusion Control	Increase in relative R.I. difference	Removal of imperfections due to glass manufacturing process	All of the above
Which among the following is regarded as an inelastic scattering of a photon?	Kerr Effect	Raman Effect	Hall Effect	Miller Effect
The main benefit of light-wave communications over microwaves or any other communications media is	Lower cost	Better security	Wider bandwidth	Freedom from interference
Common types of Antennas used in satellite subsystems are	Horn antenna	Parabolic reflector antenna	Array antenna	All of these

Most important characteristics of the highly directional antennas used in satellite is	Narrow beam width	Low gain	side lobes	None of these
AOCS does not perform	Orbit insertion	Orbit maintenance	Fine pointing	Tracking