These are sample MCQs to indicate pattern, may or may not appear in examination

University of Mumbai
Online Examination 2020

Program: BE Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2016

Examination: Final Year Semester VII

Course Code: ECC703 and Course Name: OPTICAL COMMUNICATIION

Time: 1 hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	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?
Option A:	7.31μm
Option B:	8.71μm
Option C:	5.26μm
Option D:	6.50μm
Q2.	Soliton propagation results from a special case of ---------- dispersion
Option A:	Chromatic dispersion
Option B:	Linear
Option C:	Nonlinear
Option D:	Material Dispersion
Q3.	Which process gives the laser its special properties as an optical source?
Option A:	Dispersion
Option B:	Absorption
Option C:	Stimulated emission
Option D:	Spontaneous emission
Q4.	Average insertion losses as low as _____ have been obtained with multimode graded index and single-mode fibers using ceramic capillaries.
Option A:	0.1 dB
Option B:	0.5 dB
Option C:	0.02 dB
Option D:	0.3 dB
Q5.	Allowed loss in link power budget is calculated as
Option A:	source output minus receiver sensitivity
Option B:	the total power available minus the attenuation losses

University of Mumbai
Online Examination 2020

Option C:	the comparative costs of fiber and copper installations
Option D:	the loss of power due to defective components
Q6.	What is the principle of fibre optical communication
Option A:	Frequency modulation
Option B:	Population inversion
Option C:	Total internal reflection
Option D:	Doppler Effect
Q7.	In an optical fiber, the concept of Numerical aperture is applicable in describing the ability of _____
Option A:	Light Collection
Option B:	Light Scattering
Option C:	Light Dispersion
Option D:	Light Polarization
Q8.	Which equation is used to calculate MFD?
Option A:	Maxwell's equations
Option B:	Peterman equations
Option C:	Allen Cahn equations
Option D:	Boltzmann's equations
Q9.	Light incident on fibers of angles_____the acceptance angle do not propagate into the fiber
Option A:	Less than
Option B:	Greater than
Option C:	Equal to
Option D:	Less than and equal to
Q10.	Signal attenuation within optical fibers is usually expressed in terms of ----------
Option A:	Watt
Option B:	decibels (dB)
Option C:	Volts
Option D:	meter/s
Q11.	In Single mode step index fibers, Intermodal dispersion is ---------
Option A:	minimum
Option B:	maximum
Option C:	decreases as ray propagate
Option D:	increases as ray propagate

University of Mumbai
Online Examination 2020

Q12.	Single-frequency light is called
Option A:	Pure
Option B:	coherent
Option C:	monochromatic
Option D:	intense
Q13.	The densities of electrons and holes are the same in
Option A:	an intrinsic semiconductor
Option B:	an extrinsic semiconductor
Option C:	a p-n junction at equillibrium
Option D:	forward biased p-n junction
Q14.	Which of the following is used as an optical receiver in fiber optics communications
Option A:	PIN diode
Option B:	LED
Option C:	Tunnel Diode
Option D:	APD
Q15.	What is the unit of responsitivity?
Option A:	Ampere/Watt
Option B:	Ampere/Volt
Option C:	Watt/Ampere
Option D:	Volt/Ampere
Q16.	The heating of the two prepared fiber ends to their fusing point with the application of required axial pressure between the two optical fibers is called as _____
Option A:	Mechanical splicing
Option B:	Fusion splicing
Option C:	Difusion splicing
Option D:	Melting
Q17.	Total power loss in point to point link is given as
Option A:	the loss of power due to defective components
Option B:	the total power available - the attenuation losses
Option C:	Optical power coming from the attached light source (PS)–sensitivity of receiver (PR)
Option D:	Attenuatio loss
Q18.	Which method determines the dispersion limitation of an optical link
Option A:	Rise time budget

University of Mumbai
Online Examination 2020

Option B:	Link power budget
Option C:	Scattering loss
Option D:	Attenuatio loss
Q19.	A single fiber can handle as many voice channel as a
Option A:	pair of copper conductors
Option B:	1500-pair cable
Option C:	500-pair cable
Option D:	1000-pair cable
	B
Q20.	Approximately what is the frequency limit of the optical fiber?
Option A:	20 MHz
Option B:	1 MHz
Option C:	100 MHz
Option D:	40 GHz
Q21.	LED emits light by
Option A:	spontaneous emission
Option B:	stimulated emission
Option C:	absorption
Option D:	scattering
Q22.	LASER works on the principle of
Option A:	spontaneous emission
Option B:	stimulated emission
Option C:	absorption
Option D:	scattering
Q23.	When considering source-to-fiber coupling efficiencies, the _____ is an important parameter than total output power.
Option A:	Numerical aperture
Option B:	Radiance of an optical source
Option C:	Coupling efficiency
Option D:	Angular power distribution
Q24.	How many implementation methods are available for optical isolators?
Option A:	One
Option B:	Two
Option C:	Three
Option D:	Four

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Online Examination 2020

Q25.	_____ is used to convert/modulate the light beam using the RF signal.
Option A:	An electrical-optical modulator(E/O)
Option B:	An optical-electrical modulator(O/E)
Option C:	Laser diode
Option D:	Light source