A.Y.2019-2020   Semester -II

Sr.No.	Question	A	B	C	D	Correct Answer	
1	A technique used for determining the total fiber attenuation per unit length is _____ method.	a) Frank	b) Cut-off	c) cut-back	d) Erlangen	C	
2	The system designer finds greatest interest in the _____	a) Overall fiber a	b) Fiber dispers	c) Latitude of the	d) Durability	A	
3	How many parameters are usually worked upon by the measurement techniques in attenuation?	a) Three	b) Two	c) One	d) Five	B	
4	What type of a light source is usually present in the cut-back method?	a) Tungsten or x	b) LED	c) Laser	d) Photo-sensor	A	
5	The device used to remove any scattered optical power from the core is _____	a) Mode setup te	b) Nodal spectru	c) Mode stripper	d) Attenuator	C	
6	What is the hierarchy of the process at the receiving end of the cut-back technique?	a) Photodiode –	b) Photodiode –	c) Photodiode –	d) Photo-detector – lo	A	
7	What is the unit of measurement of the optical attenuation per unit length?	a) dB-km	b) dB/km	c) km/dB	d) V	B	
8	Determine the attenuation per kilometer for a fiber whose length is 2 km, output voltage is 2.1 V at	a) 2.8dB/km	b) 3.1dB/km	c) 3.5dB/km	d) 8dB/km	C	αdB= 10 log10(V2/V1)/(L1-L2) dB/km where L1-L2=1.998 and V2,V1are output voltages.
9	_____ are used to allow measurements at a selection of different wavelengths.	a) Diaphrams	b) Spot attenuat	c) Belts	d) Interference filters	D	
10	Which technology is used by the backscatter measurement method?	a) Refraction	b) Francis flat re	c) Optical time do	d) Optical frequency	C	
11	_____ measurements checks the impurity level in the manufacturing process.	a) Material refle	b) Material abso	c) Material attenu	d) Calorimetric loss	B	
12	_____ may be achieved by replacing the optical fibers with thin resistance wires.	a) Diffraction	b) Segmentation	c) Calorimetric ca	d) Electrical calibratio	D	
13	A scattering cell consists of _____ square solar cells called as Tynes cell.	a) Five	b) Four	c) Six	d) Three	C	
14	_____ removes the light propagating in the cladding.	a) Cladding mod	b) Core stripper	c) Mode enhance	d) Attenuators	A	
15	_____ refers to any spurious or undesired disturbances that mask the received signal in	a) Attenuation	b) Noise	c) Dispersion	d) Bandwidth	B	
16	How many types of noise are observed because of the spontaneous fluctuations in optical fiber co	a) One	b) Four	c) Two	d) Three	D	
17	_____ is caused due to thermal interaction between the free electrons and the vibrating	a) Thermal noise	b) Dark noise	c) Quantum noise	d) Gaussian noise	A	
18	A small leakage current still flows from the device terminals even if there is no optical power incide	a) True	b) False			A	
19	_____ distribution provides the description the random statistics of light emitted in black bo	a) Poisson	b) Cumulative	c) Probability	d) Bose-Einstein	D	
20	The minimum pulse energy needed to maintain a given bit-error-rate (BER) which any practical rec	a) Minimal energ	b) Quantum limi	c) Point of revers	d) Binary signaling	B	
21	An analog optical fiber system operating at wavelength 1μmhas a post-detection bandwidth of 5MI	a) 46	b) 40	c) 50	d) 52	C	The SNR is given by –S/N = ηP0/2hfB Where, η= 1 (for ideal detector) P0= incident power h= Planck's constant B= Bandwidth .
22	In the equation given below, what does τ stands for? Zm=ηP0r/hf	a) Velocity	b) Time	c) Reflection	d) Refractive index	B	
23	How many circuits are present in an equivalent circuit for the digital optical fiber receiver?	a) Four	b) One	c) Three	d) Two	A	
24	_____ compensates for distortion of the signal due to the combined transmitter, medium an	a) Amplification	b) Distortion	c) Equalization	d) Dispersion	C	
25	_____ is also known as frequency-shaping filter.	a) Resonator	b) Amplifiers	c) Attenuator	d) Equalizer	D	
26	The phase frequency response of the system should be _____ in order to minimize inter-	a) Non-Linear	b) Linear	c) More	d) Less	B	
27	Noise contributions from the sources should be minimized to maximize the receiver sensitivity. Sta	a) True	b) False			A	
28	How many amplifier configurations are frequently used in optional fiber communication receivers?	a) One	b) Two	c) Three	d) Four	C	
29	How many receiver structures are used to obtain better receiver characteristics?	a) Two	b) One	c) Four	d) Three	D	
30	The high-impedance front-end amplifier provides a far greater bandwidth than the trans-impedanc	a) True	b) False			A	
31	_____ is the lowest noise amplifier device.	a) Silicon FET	b) Amplifier-A	c) Attenuator	d) Resonator-B	A	
32	The properties of a bipolar transistor are superior to the FET. State whether the given statement is	a) True	b) False			B	
33	High-performance microwave FETs are fabricated from	a) Silicon	b) Germanium	c) Gallium arseni	d) Zinc	C	
34	Gallium arsenide MESFETs are advantageous than Silicon FETs. State whether the given stateme	a) True	b) False			A	
35	The PIN-FET hybrid receivers are a combination of :	a) Hybrid resista	b) Pin photodiod	c) P-N photodiode	d) Attenuator and low	B	
36	It is difficult to achieve higher transmission rates using conventional _____	a) Voltage ampli	b) Waveguide S	c) PIN-FET or AF	d) MESFET	C	
37	Which receiver can be fabricated using PIN-FET hybrid approach?	a) Trans-impeda	b) Gallium arser	c) High-impedanc	d) Low-impedance fro	A	
38	A silicon p-i-n photodiode utilized with the amplifier and the receiver is designed to accept data at	a) 276Mbits-1	b) 274 Mbits-1	c) 278Mbits-1	d) 302Mbits-1	B	
39	What is usually required by FETs to optimize the figure of merit?	a) Attenuation of	b) Matching with	c) Dispersion of t	d) Matching with the	D	
40	What is the abbreviation of HBT?	a) Homo-junction	b) Homo-junctio	c) Hetero-junction	d) Hetero-Bandwidth	C	
41	What type of receivers are used to provide wideband operation, low-noise operation?	a) APD optical re	b) Optoelectronic	c) MESFET recei	d) Trans-impedance f	B	
42	_____ circuits extends the dynamic range of the receiver.	a) Monolithic	b) Trans-impeda	c) Automatic Erro	d) Automatic Gain Co	D	
43	The sensitivity of the low-impedance configuration is _____	a) Good	b) Poor	c) Great	d) Same as that of hig	B	
44	What is generally used to determine the receiver performance characteristics?	a) Noise	b) Resistor	c) Dynamic range	d) Impedance	C	
45	The _____ technique eliminates the thermal noise associated with the feedback resistor in t	a) Compensation	b) Resonating in	c) Electromagnet	d) Optical feedback	D	
46	The optical feedback technique is useful at low transmission rates. State whether the given statem	a) True	b) False			A	
47	How many types of optical amplifier technologies are available.	a) One	b) Three	c) Four	d) Two	D	
48	. A device which converts electrical energy in the form of a current into optical energy is called as	a) Optical source	b) Optical coupl	c) Optical isolator	d) Circulator	A	
49	How many types of sources of optical light are available?	a) One	b) Two	c) Three	d) Four	C	
50	The frequency of the absorbed or emitted radiation is related to difference in energy E between the higher energy state E2 and the lower energy state E1. State what h stands for in the given equation? E =E2 – E1 = hf	a) Gravitation co	b) Planck's cons	c) Permittivity	d) Attenuation consta	B	
51	The radiation emission process (emission of a proton at frequency) can occur in _____ way	a) Two	b) Three	c) Four	d) One	A	
52	Which process gives the laser its special properties as an optical source?	a) Dispersion	b) Stimulated ab	c) Spontaneous e	d) Stimulated emissio	D	
53	The lower energy level contains more atoms than upper level under the conditions of _____	a) Isothermal pa	b) Population in	c) Thermal equili	d) Pumping	C	
54	_____ in the laser occurs when photon colliding with an excited atom causes the s	a) Light amplifica	b) Attenuation	c) Dispersion	d) Population inversio	A	
55	A ruby laser has a crystal of length 3 cm with a refractive index of 1.60, wavelength 0.43 μm. Dete	a) 1×102	b) 3×106	c) 2.9×105	d) 2.2×105	D	The number of longitudinal modes is given by-
56	Doppler broadening is a homogeneous broadening mechanism. State whether the given statemen	a) True	b) False			B	q = 2nL/λ
57	Longitudinal modes contribute only a single spot of light to the laser output. State whether the give	a) True	b) False			A	Where
58	_____ converts the received optical signal into an electrical signal.	a) Detector	b) Attenuator	c) Laser	d) LED	A	
59	The first generation systems of optical fiber communication have wavelengths between _____	a) 0.2 and 0.3 μr	b) 0.4 and 0.6 μ	c) 0.8 and 0.9 μm	d) 0.1 and 0.2 μm	C	
60	The quantum efficiency of an optical detector should be high. State whether the given statement is	a) True	b) False			A	
61	Which of the following does not explain the requirements of an optical detector?	a) High quantum	b) Low bias volta	c) Small size	d) Low fidelity	D	q = Number of longitudinal modes
62	How many device types are available for optical detection and radiation?	a) One	b) Two	c) Three	d) Four	B	n = Refractive index

#	Question	a	b	c	d	Ans	Notes
63	The _____ process takes place in both extrinsic and intrinsic semiconductors.	a) Avalanche mu	b) External phot	c) Internal photoe	d) Dispersion	C	L = Length of the crystal
64	_____ are widely used in first generation systems of optical fiber communication.	a) p-n diodes	b) 4-alloys	c) 3-alloys	d) Silicon photodiodes	D	λ = Peak emission wavelength.
65	A semiconductor laser crystal of length 5 cm, refractive index 1.8 is used as an optical source. Det	a) 2.8 GHz	b) 1.2 GHz	c) 1.6 GHz	d) 2 GHz	C	The modes of laser are separated by a frequency internal δf and this separation is given by-
66	Which of the following detector is fabricated from semiconductor alloys?	a) Photoconduct	b) p-i-n detector	c) Photodiodes	d) Photoemission det	A	δf = c/2nL
67	P-n photodiode is forward biased. State whether the given statement is true or false.	a) True	b) False			B	Where
68	The depletion region must be _____ to allow a large fraction of the incident light to be abs	a) Thick	b) Thin	c) Long	d) Inactive	A	c = velocity of light
69	The process of excitation of an electron from valence band to conduction band leaves an empty ho	a) Detection	b) Absorption	c) Degeneration o	d) Regeneration of an	D	n = Refractive index
70	_____ always leads to the generation of a hole and an electron.	a) Repulsion	b) Dispersion	c) Absorption	d) Attenuation	C	L = Length of the crystal.
71	The electron hole pairs generated in a photodiode are separated by the _____	a) Magnetic field	b) Electric field	c) Static field	d) Depletion region	B	
72	The photocurrent of an optical detector should be _____	a) Less	b) More	c) Linear	d) Non-linear	C	
73	The absorption of photons in a photodiode is dependent on:	a) Absorption Co	b) Properties of	c) Charge carrier	d) Amount of light	A	
74	The photocurrent in a photodiode is directly proportional to absorption coefficient. State whether th	a) True	b) False			A	
75	The absorption coefficient of semiconductor materials is strongly dependent on	a) Properties of	b) Wavelength	c) Amount of light	d) Amplitude	B	
76	Direct absorption requires assistance of photon. State whether the given statement is true or false	a) True	b) False			B	
77	In optical fiber communication, the only weakly absorbing material over wavelength band required	a) GaAs	b) Silicon	c) GaSb	d) Germanium	C	
78	The threshold for indirect absorption occurs at wavelength _____	a) 3.01 μm	b) 2.09 μm	c) 0.92 μm	d) 1.09 μm	D	
79	The semiconductor material for which the lowest energy absorption takes place is :	a) GaAs	b) Silicon	c) GaSb	d) Germanium	D	
80	The wavelength range of interest for Germanium is:	a) 0.8 to 1.6 μm	b) 0.3 to 0.9 μm	c) 0.4 to 0.8 μm	d) 0.9 to 1.8 μm	A	
81	A photodiode should be chosen with a _____ less than photon energy.	a) Direct absorpt	b) Band gap ene	c) Wavelength ra	d) Absorption coefficie	D	
82	_____ photodiodes have large dark currents.	a) GaAs	b) Silicon	c) GaSb	d) Germanium	C	
83	For fabrication of semiconductor photodiodes, there is a drawback while considering _____	a) GaAs	b) Silicon	c) GaSb	d) Germanium	D	
84	_____ materials are potentially superior to germanium.	a) GaAs	b) Silicon	c) GaSb	d) III – V alloys	D	
85	_____ alloys such as InGaAsP and GaAsSb deposited on InP and GaSb substrate.	a) Ternary	b) Quaternary	c) Gain-guided	d) III – V alloys	A	
86	_____ alloys can be fabricated in hetero-junction structures.	a) InGaSb	b) III – V alloys	c) InGaAsP	d) GaAsSb	B	
87	The fraction of incident photons generated by photodiode of electrons generated collected at deter	a) Quantum effic	b) Absorption co	c) Responsivity	d) Anger recombination	A	
88	In photo detectors, energy of incident photons must be _____ band gap energy.	a) Lesser than	b) Greater than	c) Same as	d) Negligible	B	
89	GaAs has band gap energy of 1.93 eV at 300 K. Determine wavelength above which material will c	a) 2.431×10-5	b) 6.424×10-7	c) 6.023×103	d) 7.234×10-7	B	λ = hc/t E = hc / λ = 6.626*10-34*3*108/ 1.36*10-6 = 1.46*10-19J
90	Determine Responsivity of photodiode having o/p power of 3.55 μmand photo current of 2.9 μm.	a) 0.451	b) 0.367	c) 0.982	d) 0.816	D	R = Ip/Po = 2.9*10-6/ 3.55*10-6 = 0.816 A/W.
91	Determine incident optical power on a photodiode if it has photocurrent of 2.1 μAand responsivity o	a) 4.15	b) 1.75	c) 3.81	d) 8.47	C	R = Ip/Po Po = Ip/R = 2.1*10-6/0.55 = 3.81 μm.
92	If a photodiode requires incident optical power of 0.70 A/W. Determine photocurrent.	a) 1.482	b) 2.457	c) 4.124	d) 3.199	B	Same as above formula
93	Compute intrinsic region width of p-i-n photodiode having junction capacitance of 4pF and material	a) 7.45×10-6	b) 2.26×10-7	c) 4.64×10-7	d) 5.65×10-6	B	Cj= εsA/ W w = εsA/Cj = 16.5×10-13/0.55×10-6/ 4×10-12 = 2.26×10-7.
94	Determine permittivity of p-i-n photodiode with junction capacitance of 5pF, area of 0.62×10-6m2an	a) 7.55×10-12	b) 2.25×10-10	c) 5×10-9	d) 8.5×10-12	B	
95	Determine response time of p-i-n photodiode if it has 3 dB bandwidth of 1.98×108Hz.	a) 5.05×10-6sec	b) 5.05×10-7Sec	c) 5.05×10-9 sec	d) 5.05×10-8Sec	C	Maximum response time = 1/Bm=1/1.98×108= 5.05×10-9sec.
96	Compute maximum 3 dB bandwidth of p-i-n photodiode if it has a max response time of 5.8 ns.	a) 0.12 GHz	b) 0.14 GHz	c) 0.17 GHz	d) 0.13 GHz	C	= 1/Bm =1/ 5.8×10-9= 0.17 GHz.
97	Determine carrier velocity of a p-i-n photodiode where 3dB bandwidth is1.9×108Hz and depletion r	a) 93.43×10-5	b) 29.55×10-3	c) 41.56×10-3	d) 65.3×10-4	B	Bm = Vd/ 2ΠW Vd = Bm× 2Π× W = 1.98×108×2Π×24×10-6 = 29.55×10-3.
98	Compute depletion region width of a p-i-n photodiode with 3dB bandwidth of 1.91×108and carrier v	a) 1.66×10-5	b) 3.2×10-3	c) 2×10-5	d) 2.34×104	A	Bm= Vd/2ΠW W=Vd/Bm2Π = 2×10-5/1.91×108×2Π = 1.66×10-5m.
	For linear as well as in nonlinear mode _____ are most important network elements.	a) Optical amplif	b) Optical detecto	c) A/D converter	d) D/A converters	A	
	The more advantages optical amplifier is	a) Fiber amplifie	b) Semiconducto	c) Repeaters	d) Mode hooping am	B	
	_____ cannot be used for wideband amplification	a) Semiconducto	b) Erbium-dope	c) Raman fiber ar	d) Brillouin fiber ampli	D	
	_____ is used preferably for channel selection in a WDM system.	a) Semiconducto	b) Erbium-dope	c) Raman fiber ar	d) Brillouin fiber ampli	D	
	For used in single-mode fiber, _____ are used preferably	a) Semiconducto	b) Erbium-dope	c) Raman fiber ar	d) Brillouin fiber ampli	A	
	Mostly _____ are used in nonlinear applications	a) Semiconducto	b) Erbium-dope	c) Raman fiber a	d) FPAs	D	
	_____ is superior as compared to _____	a) TWA, FPA	b) FPA, TWA	c) EDFA, FPA	d) FPA, EDFA	A	
	_____ are operated at current beyond normal lasing threshold current, practically	a) Semiconducto	b) Erbium-dope	c) Raman fiber ar	d) Brillouin fiber ampli	A	
	An uncoated FPA has peak gain wavelength 1.8μm, mode spacing of 0.8nm, and long active regio	a) 4.25×106	b) 3.75×107	c) 3.95×107	d) 4.25×109	B	n=λ2/2δλL=1.8×10-6/2×0.8×10-9×300×10-6=3.75×107
	An SOA has net gain coefficient of 300, at a gain of 30dB. Determine length of SOA.	a) 0.32 m	b) 0.023 m	c) 0.245 m	d) 0.563 m	B	L = Gs(dB)/10×g×loge=30/10×300×0.434`=0.023 m
	An SOA has length of 35.43×10-3m, at 30 dB gain. Determine net gain coefficient.	a) 5.124×10-3	b) 1.12×10-4	c) 5.125×10-3	d) 2.15×10-5	C	g=L×10×loge/Gs(dB)=35.43×10-3×10×0.434/30 =5.125×10-3.
	An SOA has mode number of 2.6, spontaneous emission factor of 4, optical bandwidth of 1 THz. D	a) 1.33×10-3	b) 5.13×1012	c) 3.29×10-6	d) 0.33×10-9	A	Past = mnsp(Gs-1) hfb = 2.6×4(1000-1)×6.63×10-34×1.94×1014×1×1012 = 1.33×10-3W.
	The spectral dependence on gain is always constant. State whether the given statement is true or	a) True	b) False			B	
	ESA _____ the pumping efficiency of device.	a) Increases	b) Does not affe	c) Reduces	d) Has negligible effe	C	
	Signal amplification is obtained in _____	a) Erbium-doped	b) Rare-earth-do	c) Raman fiber sy	d) Brillouin fiber ampli	A	
	It is possible to construct a single rare-earth-doped fiber amplifier which provides amplification for	a) True	b) False			B	
	_____ is constructed using erbium-doped glass.	a) An erbium-ba	b) Rare-earth-do	c) Raman fiber sy	d) Brillouin fiber ampli	A	
	_____ uses Er3+-doped erbium glass.	a) An erbium-ba	b) Rare-earth-do	c) Raman fiber sy	d) Brillouin fiber ampli	A	
	The most advantageous amplification is _____	a) An erbium-ba	b) Rare-earth-do	c) Raman fiber sy	d) Brillouin fiber ampli	C	
	_____ is also known as lump Raman amplifiers.	a) An erbium-ba	b) Rare-earth-do	c) Raman fiber sy	d) Discrete Raman an	D	
	_____ extends the pump power into transmission line fiber.	a) An erbium-ba	b) Rare-earth-do	c) Raman fiber sy	d) Distributed Raman	D	
	_____ are called hybrid Raman amplifier.	a) Lumped and o	b) Rare-earth-do	c) Raman fiber sy	d) Distributed Raman	A	
	In _____ the ASE contributes most of noise.	a) An erbium-ba	b) Rare-earth-do	c) Raman fiber sy	d) Distributed Raman	D	

Matoshri College of Engineering & Research Centre , Nashik
Department of Electronics & Telecommunication Engineering
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Sr.No.	Question	A	B	C	D	Correct Answer	
1	_____ is defined as a process by which the	a) Wavelength conversion	b) Attenuation	c) Sigma managemen	d) Wavelength dispersion	A	
2	The device which is used to perform wavelength conversion	a) Attenuator	b) Wavelength	c) Wavelength Circula	d) Wavelength translator	D	
3	A wavelength converter is termed as _____ if the converte	a) Down converter	b) Up converte	c) Attenuator	d) Shifter	B	
4	The _____ converters cannot process different modu	a) Shifting	b) Optoelectron	c) Opt-circular	d) Magnetic simulating	B	
5	The optical medium, in case of optical wavelength conversio	a) Depleted	b) Linear	c) Non-linear	d) Dispersive	C	
6	The process of imposing the nonlinear response of the medi	a) Demodulation	b) Absorption	c) Cross-modulation	d) Repeater mixing	C	
7	How many approaches are adopted by the cross-modulation	a) Four	b) Three	c) Two	d) Five	A	
8	_____ wavelength converters make use of a passive	a) Bipolar	b) Optoelectron	c) Magnetic	d) Coherent	D	
9	A _____ wavelength converter utilizes the nonlinea	a) Cross-gain modulation	b) Cross-phase	c) Cross-absorption m	d) Differential polarization	A	
10	The intensity modulated data on one signal wavelength is ca	a) Dispersed data	b) Pump signal	c) Probe signal	d) Frequency signal	B	
11	The probe signal is inverse to that of the pump signal. State	a) True	b) False			A	
12	In the XGM converter, the transfer function maintains the rec	a) True	b) False			B	
13	The speed of operation of XGM wavelength conversion is de	a) Depletion level	b) Hole concen	c) Carrier dynamics	d) Electron concentration	C	
14	. _____ is defined as the deviation in the emission f	a) Intensity probe	b) Dispersion	c) Attenuation	d) Frequency chirp	D	
15	When frequency chirp shifts the optical frequency towards th	a) Red shift	b) Green shift	c) Yellow shift	d) Blue shift	D	
16	What is the full form of ETDM?	a) Electronic tube di-cyclic	b) Electrical tim	c) Emphasis tier divisio	d) Electrical tube dielectric	B	
17	The practical limitations of the speed of electronic circuits ha	a) 100 MHz	b) 120 MHz	c) 100GHz	d) 80 Hz	C	
18	A strategy used for increasing the bitrate of digital optical fib	a) Optical time division mu	b) Electrical tim	c) Frequency division	d) Code division multiplexi	A	
19	_____ semiconductor laser sources provide low dut	a) Diameter preferred	b) Mode locked	c) Divine	d) Depletion	B	
20	_____ are the devices which are employed to elin	a) Optical intensity modula	b) Demodulato	c) Circulators	d) Optical Isolators	A	
21	_____ provides operation at high transmission rate	a) Optical intensity modula	b) Demodulato	c) Circulators	d) Electro-absorption mod	D	
22	In _____ the microwave frequency are modulated with	a) Subcarrier multiplexing	b) TDM	c) FDM	d) Code division multiplexi	A	
23	Which of the following techniques is easy to implement?	a) Amplitude shift keying	b) Phase shift k	c) Frequency shift key	d) SCM	C	
24	Which of the following is the disadvantage of SCM?	a) Source nonlinearity	b) Linearity	c) Distortion	d) Narrow bandwidth	C	
25	The IF signal can be input to a demodulator to recover the b	a) True	b) False			A	
26	Which of the following is not an application of optical amplifie	a) Power amplifier	b) In-line repea	c) Demodulator	d) Preamplifier	C	
27	_____ reconstitutes a transmitted digital optical signal.	a) Repeaters	b) Optical ampl	c) Modulators	d) Circulators	A	
28	_____ are transparent to any type of signal modul	a) Repeaters	b) Optical ampl	c) Modulators	d) Circulators	B	
29	_____ imposes serious limitations on the sys	a) Fiber attenuation	b) Fiber modula	c) Fiber demodulation	d) Fiber dispersion	D	
30	_____ is the ratio of input signal to noise ratio to the o	a) Fiber dispersion	b) Noise figure	c) Transmission rate	d) Population inversion	B	
31	How many factors govern the noise figure of the device?	a) Four	b) Three	c) Two	d) One	A	
32	What is the typical range of the noise figure?	a) 1 – 2 dB	b) 3 – 5dB	c) 7 – 11 dB	d) 12 – 14 dB	C	

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Sr.No.	Question	A	B	C	D	Correct Answer
1	The satellite that is used as a relay to extend communication distance is called as _____	a) Relay satellites	b) Communication satellites	c) Repeater satellites	d) Geosynchronous satellites	B
2	The transmitter-receiver combination in the satellite is known as a _____	a) Relay	b) Repeater	c) Transponder	d) Duplexer	C
3	The downlink frequency is lower than the uplink frequency.	a) True	b) False			A
4	What is the reason for carrying multiple transponders in a satellite?	a) More number o	b) Better reception	c) More gain	d) Redundancy	A
5	Why are VHF, UHF, and microwave signals used in satellite communication?	a) More bandwidt	b) More spectrum space	c) Are not diffracted b	d) Economically viable	C
6	What is the reason for shifting from c band to ku band in satellite communication?	a) Lesser attenua	b) Less power requirements	c) More bandwidth	d) Overcrowding	D
7	Which of the following bands cannot be used for satellite communication?	a) MF	b) Ku	c) X	d) C	A
8	What is the maximum theoretical data rate if a transponder is used for binary transmission and ha	a) 32Mpbs	b) 72Mpbs	c) 36Mpbs	d) 12Mpbs	B
9	Why are techniques like frequency reuse and spatial isolation carried out?	a) Reduce traffic l	b) More gain	c) High speed	d) Error detection	A
10	Which technique uses two different antennas to reduce traffic on the same frequency?	a) Spatial isolation	b) Frequency reuse	c) Multiplexing	d) Modulation	B
11	Which technique uses spot beam antennas to divide the area covered by the satellite into smaller	a) Spatial isolation	b) Frequency reuse	c) Multiplexing	d) Modulation	A
12	Spatial-division multiple access (SDMA) depends on satellite location and not frequency.	a) True	b) False			A
13	What happens if a satellite is launched vertically and released at its design altitude?	a) Continue to orb	b) Fall back	c) Overshoots the alti	d) Stays where it was release	B
14	The satellite is accelerating as it orbits the earth.	a) True	b) False			A
15	Why does the orbit take the shape of an ellipse or circle?	a) Position can be	b) Consume less fuel	c) Most efficient geom	d) Better coverage on earth	A
16	The direction of orbit in the same direction of earth rotation is called _____	a) Retrograde	b) Posigrade	c) Perigee	d) Apogee	B
17	When is the speed of the satellite maximum in an elliptical orbit?	a) Retrograde	b) Posigrade	c) Perigee	d) Apogee	C
18	Satellites closer to the earth travel at lower speeds than satellites that are far away from earth.	a) True	b) False			B
19	The time period taken by the satellite to complete one orbit is called _____	a) Lapsed time	b) Time period	c) Sidereal period	d) Unit frequency	C
20	The period of time that elapses between the successive passes of the satellite over a given meridi	a) synodic period	b) Lapsed time	c) Time period	d) Sidereal period	A
21	What is the angle of inclination for a satellite following an equatorial orbit?	a) 0°	b) 180°	c) 45°	d) 90°	A
22	The angle between the line from the earth station's antenna to the satellite and the line between th	a) Angle of inclina	b) Angle of elevation	c) Apogee angle	d) LOS angle	B
23	To use a satellite for communication relay or repeater purposes what type of orbit will be the best?	a) Circular orbit	b) Elliptical orbit	c) Geosynchronous o	d) Triangular orbit	C
24	What percentage of the earth can communication satellites see?	a) 20	b) 50	c) 70	d) 40	D
25	Which of the following is not a satellite subsystem?	a) Ground station	b) Power system	c) Telemetry tracking	d) Communication subsystem	A
26	Which of the following is not a part of the propulsion subsystem of a satellite?	a) Gyroscope	b) Jet thruster	c) AKM	d) Fuel control system	A
27	Which of the following are common baseband signals transmitted from the earth ground station?	a) Navigational da	b) Computer data, navigation	c) Voice, video, comp	d) Computer data	C
28	Which of the following components receives, translates the signal frequency and re-transmits the s	a) Repeater	b) Relay	c) Transponder	d) Transducer	C
29	Why is there a huge spectrum space between the transmitted and received signal in satellite comr	a) Reduce interfer	b) Maximum efficiency	c) Less attenuation	d) To reduce space occupied	A
30	Which of the following transponders convert the uplink signal to downlink signal using two mixers	a) Single conversi	b) Dual conversion transpond	c) Regenerative trans	d) Dual mixer transponder	B
31	In a regenerative transponder, the signal is demodulated and modulated again before transmission	a) True	b) False			A
32	What is the number of transponders if the satellite uses 12 channels of frequency and frequency r	a) 12	b) 6	c) 24	d) 3	C
33	Why is it not possible to provide transmit function by wideband amplifier and mixer circuits?	a) Heavy attenuat	b) High power output over wi	c) Economically not p	d) Weight of the system incre	B
34	Which of the following is not true?	a) Battery is only	b) When in orbit, solar power	c) Battery is used for	d) The batteries are charged	B
35	Telemetry, command, and control (TC&C) subsystem allow a ground station to monitor and contro	a) True	b) False			A
36	What is the use of the band pass filter in the receiver section?	a) Protects the rec	b) Increases antenna gain	c) Reduces noise	d) To reduce it to an intermed	A
37	The satellite in the earth station must be steerable even for a geosynchronous satellite.	a) True	b) False			A
38	In Rf tuning, what is the first local oscillator?	a) Quartz oscillato	b) Frequency synthesizer	c) Magnetic oscillato	d) Electric oscillators	B
39	If the earth station downlink signal received is at fs = 4.08 GHz, what first stage local-oscillator freq	a) 3310 MHz	b) 4080 MHz	c) 1203 MHz	d) 3250 MHz	A	Explanation: fIF = fs – fLO fLO = fs – fIF = 4080 – 770 = 3310 MHz.
40	Which of the following amplifiers is used in the transmitter substation?	a) RF amplifiers	b) Buffer amplifiers	c) Klystron amplifier	d) Operational amplifiers	C
41	Which part of the transmitter subsystem modulates the baseband signal?	a) Antenna	b) Up converter	c) Power amplifiers	d) Mixer	B
42	In digital systems, analog signals are first digitized with PCM converters before modulation.	a) True	b) False			A
43	In RF tuning, _____ provides the final up conversion to the microwave frequency?	a) Fixed-frequenc	b) RF frequency synthesizer	c) Quartz oscillator	d) Magnetic oscillator	B
44	When individual up converters are used to modulate a channel, what is used to combine them into	a) Microwave com	b) Multiplexer	c) Mixer	d) Amplifier	A