University of Mumbai
Examination June 2021

Examinations Commencing from 1st June 2021

Program: Electronics and Telecommunications Engineering

Curriculum Scheme: Rev2016

Examination: BE Semester VIII

Course Code: ECC 801 and Course Name: RF Design

Time: 2 hour Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	An ideal filter would have _____ in the passband, _____ in the stopband, and _____ in the passband.
Option A:	infinite attenuation, zero insertion loss, a linear phase response
Option B:	zero insertion loss, infinite attenuation, a non-linear phase response
Option C:	finite attenuation, zero insertion loss, a non-linear phase response
Option D:	zero insertion loss, infinite attenuation, a linear phase response
2.	Find the value of center of noise figure circle, if noise parameter N = 0.0986 and optimum reflection coefficient is 0.62 ∠100°
Option A:	0.56 ∠ (-100°)
Option B:	0.85 ∠ 100°
Option C:	0.56 ∠100°
Option D:	0.85 ∠ (-100°)
3.	In Indirect frequency synthesizer, the output frequency f0 is equal to
Option A:	fr/N (fr is reference frequency)
Option B:	Nfr (fr is reference frequency)
Option C:	fr + N (fr is reference frequency)
Option D:	fr - N (fr is reference frequency)
4.	The RF-LO isolation is excellent in
Option A:	Image reject mixer
Option B:	single ended mixer
Option C:	Double balanced mixer
Option D:	balanced (90°) mixer
5.	The mechanism that enables electromagnetic energy to be created in an electronic device and coupled to its AC power cord is known as
Option A:	Radiated Emission (RE)
Option B:	Conducted Emission (CE)
Option C:	Radiated Susceptibility (RS)
Option D:	Conducted Susceptibility (CS)
6.	In a FET design, for value of S11 = 0.75∠-120°, find the value of maximum source

	gain Gsmax in dB.
Option A:	3dB
Option B:	2.92dB
Option C:	4.4dB
Option D:	3.6dB
7.	The value of inductor for π section constant K low pass filter with cut off frequency 3000Hz and nominal characteristic impedance R0 of 600Ω is equal to:
Option A:	31.84mH
Option B:	12.6mH
Option C:	63.68mH
Option D:	30.6mH
8.	For a one port negative resistance oscillator for steady state oscillation, which of the following is TRUE?
Option A:	Γ L * Γ in= 1
Option B:	Γ L / Γ in= 1
Option C:	Γ L + Γ in= 1
Option D:	Γ L - Γ in= 1
9.	Under which condition the Transistor is unconditionally Stable?
Option A:	K > 1, Δ > 1
Option B:	K < 1, Δ > 1
Option C:	K < 1, Δ < 1
Option D:	K > 1, Δ < 1
10.	The process of filter design by the insertion loss method is given by
Option A:	Filter Specifications → Scaling and Conversion → LP Prototype Design → Implementation
Option B:	Filter Specifications → HP Prototype Design → Scaling and Conversion → Implementation
Option C:	Filter Specifications → BP Prototype Design → Scaling and Conversion → Implementation
Option D:	Filter Specifications → LP Prototype Design → Scaling and Conversion → Implementation
11.	_____cannot be used to minimize the EMI.
Option A:	filtering
Option B:	shielding
Option C:	Cable designing
Option D:	rectifying
12.	In order to avoid leakage of electromagnetic energy through the shield, the outer surface of the shield has to be_____.
Option A:	Covered through insulators.
Option B:	Placed in isolation
Option C:	Grounded
Option D:	Kept in open environment

13.	Burst noise present in semiconductors and ultra-thin gate oxide films is also called as
Option A:	Flicker noise
Option B:	Popcorn noise
Option C:	Shot noise
Option D:	Thermal noise
14.	For a minimum insertion loss, one could use a _____ and for the sharpest cutoff use a _____.
Option A:	Chebyshev response, Binomial response
Option B:	Binomial response, Butterworth response
Option C:	Binomial response, Chebyshev response
Option D:	Elliptic response, Butterworth response
15.	A one port oscillator uses a negative resistance diode having Γin = 1.25 ▫ 40° at 8GHz in Z0=50 ohms system. Then the input impedance of diode in ohms will be
Option A:	(-44+j124)
Option B:	50+j100
Option C:	(-48+j145)
Option D:	(-50+j100)
16.	In Electrical bonding process the components of an assembly, equipment or subsystems are electrically connected by means of what kind of conductor?
Option A:	Low impedance
Option B:	Twisted
Option C:	High impedance
Option D:	Mechanically strong
17.	PLL functions as a _____for phase noise arising in the reference signal and phase detector.
Option A:	High Pass Filter
Option B:	Low Pass Filter
Option C:	Band Pass Filter
Option D:	Band Stop Filter
18.	For a unilateral device condition for unconditional stability in terms of S parameters is:
Option A:	|S11|<1, |S22|<1
Option B:	|S11|>1, |S22|>1
Option C:	|S11|>1, |S22|<1
Option D:	|S11|< 1, |S22|> 1
19.	A method of frequency synthesis where multiple output frequencies are generated by mixing the outputs from two or more crystal-controlled frequency sources or by dividing or multiplying the output frequency from a single-crystal oscillator.

Option A:	Digital frequency synthesizer
Option B:	General frequency synthesizer
Option C:	Direct Frequency Synthesis
Option D:	Looped frequency synthesizer
20.	A dielectric resonator is modeled as _____ when it is used as a tuning circuit with a oscillator.
Option A:	series RLC circuit
Option B:	parallel RLC circuit
Option C:	LC circuit
Option D:	tank circuit

Q2.	
A	**Solve any Two** **5 marks each**
i.	Explain the steps involved in filter designing by Insertion loss method.
ii.	Discuss the working of fractional N-Frequency Synthesizer.
iii.	Show that both ports of a two-port negative resistance oscillator oscillate.
B	**Solve any One** **10 marks each**
i.	Explain the following power amplifier performance parameters: a) Amplifier efficiency and power added efficiency b)1-dB compression point c)1-dB compression gain d)Dynamic range e) Load Pull Contours
ii.	The S-parameters at 10 GHz for a microwave transistor with a 50 ohms reference impedance are: S11= 0.45∠150°, S12= 0.01∠-10°, S21=2.05 ∠10° S22=0.40∠-150° The source impedance is 20 ohms and the load impedance is 30 ohms. Calculate the power gain, the available gain and the transducer power gain.

Q3.	
A	**Solve any Two** **5 marks each**
i.	Why is single point ground system undesirable at high frequency? How multipoint ground system overcomes this problem?
ii.	Explain the mixer characteristics: Image frequency, Conversion loss, noise figure of SSB and DSB signal
iii.	Discuss the types of stability in an Amplifier design
B	**Solve any One** **10marks each**
i.	Explain:

	a) Radiation and Conduction Coupling modes. b) Common Mode Coupling Mechanisms.
ii.	Design a m-derived T- section of LPF having fc= 5KHz and nominal characteristic impedance Ro=600 ohms. The frequency of infinite attenuation is 1.25 times the cut off frequency fc.

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Curriculum Scheme: Rev2016
Examination: BE Semester VIII
Course Code: ECC 801 and Course Name: RF Design

Time: 2 hour | Max. Marks: 80

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	D
Q2.	C
Q3.	B
Q4	C
Q5	B
Q6	D
Q7	C
Q8.	A
Q9.	D
Q10.	D
Q11.	D
Q12.	C
Q13.	B
Q14.	C
Q15.	A
Q16.	A
Q17.	B
Q18.	A
Q19.	C
Q20.	B

University of Mumbai
Examination June 2021

Examinations Commencing from 1st June 2021

Program: Electronics and Telecommunication Engineering

Curriculum Scheme: Rev2016

Examination: BE Semester VIII

Course Code: ECCDLO8043 and Course Name: Satellite Communication

Time: 2-hour Max. Marks: 80

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0806_R16_EXTC_VIII_ECCDLO8043_QP2

Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	Find the orbital period of the satellite in a circular orbit 500 km above the Earth's surface
Option A:	**1.6 hrs**
Option B:	3.2 hrs
Option C:	2.4 hrs
Option D:	6.4 hrs
2.	In space qualification, components that have _____ reliability in outer space are selected
Option A:	Low
Option B:	medium
Option C:	**high**
Option D:	very low
3.	In TVRO, Outdoor unit mainly consists of
Option A:	Transmitting antenna and Low Noise Block (LNB)
Option B:	Television Receiver
Option C:	**receiving antenna and Low Noise Block (LNB)**
Option D:	IF amplifier
4.	When two networks are connected in series, its composite noise figure can be given as
Option A:	**F1+(F2-1)/G1**
Option B:	F1-(F2-1)/G1
Option C:	F2+(F1-1)/G1
Option D:	F1G1+(F2-1)
5.	SCPC systems are widely used on lightly loaded routes, this type of service being referred to as a _____.
Option A:	**thin route service.**
Option B:	thick route service.
Option C:	busy route service.
Option D:	empty route service.
6.	What is the approximate time taken by the GPS for one complete orbit?
Option A:	11 minutes

Option B:	45 minutes
Option C:	5 hours
Option D:	**12 hours**
7.	A satellite which simply reflects the signal without further amplification
Option A:	**Passive satellite**
Option B:	Active satellite
Option C:	Geostationary satellite
Option D:	Domestic satellite
8.	The rotation about _____ axis is called pitch in 3-axis stabilization
Option A:	X
Option B:	**Y**
Option C:	Z
Option D:	W
9.	The Tracking system present in the earth station performs mainly two functions as _____
Option A:	acquisition and tracking of earth station
Option B:	acquisition and tracking of the Sun
Option C:	acquisition and tracking of the Moon
Option D:	**satellite acquisition and tracking of satellite.**
10.	The range between a ground station and a satellite is 42000 km. Calculate the free space loss a frequency of 6 GHz.
Option A:	100 dB
Option B:	150 dB
Option C:	175dB
Option D:	**200.4dB**
11.	The CSC bandwidth is 160 kHz, and its center frequency is _____ below the pilot frequency
Option A:	**18.045 MHz**
Option B:	18.045 kHz
Option C:	1.8045 MHz
Option D:	1.8045 kHz
12.	In Satellite Radio sound quality is excellent due to a wide audio bandwidth of----------.
Option A:	5–15 MHz
Option B:	**5–15 kHz**
Option C:	50-150KHz
Option D:	50-150Hz
13.	The angle between the line from the earth station's antenna to the satellite and the line between the earth station's antenna and the earth's horizon is called as -------.
Option A:	Angle of inclination
Option B:	**Angle of elevation**
Option C:	Apogee angle
Option D:	Angle of azimuth

14.	Double conversion transponder is used for _____ band
Option A:	K
Option B:	**Ku**
Option C:	S
Option D:	C
15.	A master antenna TV (MATV) system is used to provide reception of _____ to a small group of users.
Option A:	Conventional TV/AM channels
Option B:	DBS TV/AM channels
Option C:	**DBS TV/FM channels**
Option D:	Conventional TV/FM channels
16.	The traffic-handling capacity of an Earth station on the uplink depends on ……
Option A:	**its EIRP**
Option B:	its antenna gain
Option C:	noise associated with the Earth Station
Option D:	received power at satellite
17.	A frame format of TDMA system includes.
Option A:	reference burst, preamble and traffic data.
Option B:	**reference burst, guard time, preamble and traffic data.**
Option C:	guard time, preamble and traffic data.
Option D:	reference burst, guard time and preamble.
18.	Bandwidth used in LASER satellite communication is _____RF bandwidth
Option A:	**Larger than**
Option B:	Equal to
Option C:	Smaller than
Option D:	depends on
19.	Which of the following term is used to describe the microwave radiation which is present throughout universe and appears to originate from matter in any form at a finite temperature?
Option A:	Noise factor
Option B:	Antenna loss
Option C:	**Sky noise**
Option D:	Noise power spectral density
20.	What is the number of transponders if the satellite uses 12 channels of frequency and frequency reuse is implemented?
Option A:	12
Option B:	6
Option C:	**24**
Option D:	3

Q2	**Solve any Four out of Six 5 marks each**
A	Explain design consideration of Earth station.
B	Define and explain reliability in satellite
C	Explain why 14/12 GHz band is used for DTH application, what are the advantages and disadvantages of this band?
D	Define and explain what is meant by frame efficiency in relation to TDMA operation
E	Explain Kepler's laws.
F	How does back off power affect satellite link performance.

Q3.	**Solve any Two Questions out of Three 10 marks each**
A	Explain the various stages in launching of a geostationary satellite into final circular orbit with zero inclination by ELV.
B	Explain in detail the operation of the SPADE system of demand assignment. What is the function of common signaling channels?
C	A receiver for geostationary satellite transmission at 2.2GHz has an equivalent noise temperature of 160 K and a bandwidth of 1MHz. The receiver antenna has a gain of 30dB, and the antenna noise temperature is 190dB. What is the minimum required satellite transmitter power to achieve a 20dB CNR at the output of the receiver?

University of Mumbai
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Program: Electronics and Telecommunication Engineering
Curriculum Scheme: Rev2016
Examination: BE Semester VIII
Course Code: ECCDLO8043 and Course Name: Satellite Communication
Time: 2-hour Max. Marks: 80

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0806_R16_EXTC_VIII_ECCDLO8043_AK2

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	C
Q3.	C
Q4	A
Q5	A
Q6	D
Q7	A
Q8.	B
Q9.	D
Q10.	D
Q11.	A
Q12.	B
Q13.	B
Q14.	B
Q15.	C
Q16.	A
Q17.	B
Q18.	A
Q19.	C
Q20.	C

University of Mumbai
Examination June 2021

Examinations Commencing from 1st June 2021

Program: BE (Electronics and Telecommunication Engineering) (CBCGS)

Curriculum Scheme: Rev2016

Examination: BE Semester VIII

Course Code: ECC 802 and Course Name: Wireless Networks

Time: 2 hours Max. Marks: 80

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Q1	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1	The full form of SPIN is
Option A:	Sensor Protocol for Information via Negotiation
Option B:	Secrete Protocol for Information via Negotiation
Option C:	Simple Protocol for Information via Negotiations
Option D:	Sensor point for Information via Negotiations
2.	Inductive Coupling is used in the
Option A:	Physical Layer
Option B:	Network Layer
Option C:	MAC Layer
Option D:	Date Link Layer
3.	An EMG sensor is for monitoring the activity of
Option A:	Brain
Option B:	Muscles
Option C:	Respiration
Option D:	Heart
4.	The full form of MAC is
Option A:	Multiple Alternative Control
Option B:	Medium Access Configuration
Option C:	Medium Access Control
Option D:	Medium Alternative Control
5.	The Access method of IEEE 802.15 is
Option A:	DSS-TDD-TDMA
Option B:	FHSS-FDD-FDMA
Option C:	FHSS-TDD-TDMA
Option D:	DSSS-FDD-FDMA
6.	Which of the following is not a type of RFID tag
Option A:	Active Tag
Option B:	Passive Tag
Option C:	Semi active Tag
Option D:	Additive passive Tag
7.	Which of the following is related to Ultra Wideband

Option A:	IEEE 802.15.3a
Option B:	IEEE 802.15.3b
Option C:	IEEE 802.15.3c
Option D:	IEEE 802.15.3d
8.	The full form of FEC is
Option A:	Frequent Error Correction
Option B:	Forward Error Correction
Option C:	Frequent Error Comparison
Option D:	Forward Error Comparison
9.	IEEE 802.11b has a maximum data rate _____Mbps
Option A:	2
Option B:	54
Option C:	11
Option D:	27
10.	Which multiple access technique is used by IEEE 802.11 standard for random access?
Option A:	CSMA/CA
Option B:	FDMA
Option C:	TDMA
Option D:	WCDMA
11.	If Interference Margin is 3dB, what will be the cell loading of CDMA?
Option A:	0.5
Option B:	0.6
Option C:	0.7
Option D:	1
12.	WMAN'S span upto
Option A:	200 Kms
Option B:	150 Kms
Option C:	50 Kms
Option D:	100 Kms
13.	IEEE 802.16.1 standard is
Option A:	Air interface for 10-66 GHz
Option B:	Coexistence of broadband wireless access systems
Option C:	Air interface for licensed frequencies for 2-11 GHz
Option D:	Air interface above 66 GHz
14.	In MAC PDU format MSB comprises of
Option A:	Genetic payload header
Option B:	Genetic MAC header
Option C:	Payload
Option D:	CRC
15.	Which of the following does not belong to the Reservation mechanism of contention based MAC protocol

Option A:	CSMA/CA
Option B:	IEEE 802.11
Option C:	MACA
Option D:	CSMA
16.	Which of the following is not a Hierarchical routing protocol
Option A:	DSR
Option B:	HSR
Option C:	CGSR
Option D:	ZRP
17.	Which of the following is not a characteristic of Ad-hoc networks
Option A:	Multihop
Option B:	Rapid deployment
Option C:	Fixed infrastructure
Option D:	Sporadic connectivity
18.	Flooding is
Option A:	Reactive technique
Option B:	Duplicated messages that can be avoided
Option C:	Redundant routing
Option D:	Proactive technique
19.	What will be the maximum number of subscribers, at initial installation, if present number of subscribers in the zone is 50,000 and subscriber growth 5% per year. Initial installation is based on a four year design.
Option A:	50,500
Option B:	52,500
Option C:	60,655
Option D:	60,775
20.	LEACH protocol is used for
Option A:	Unlimited bandwidth
Option B:	minimizes energy dissipation
Option C:	Maximum packet delivery
Option D:	Low jitter

Q2.	**Solve any Two Questions out of Three** **10 marks each**
A	*Explain Bluetooth security features and security levels with proper diagram*
B	*Explain Link budget analysis requirement of wireless network*
C	*Describe the model of Wireless Sensor Network. What are the factors influencing design of Wireless Sensor Network*

Q3.	
A	**Solve any Two** **5 marks each** **Write a short note on**
i.	*ZigBee*
ii.	*VANETS*

iii.	M2M communication
B	**Solve any One** **10 marks each**
i.	*What is localization of WSN nodes? Explain with examples centralized and distributed schemes in localization*
ii.	*Write a short note on IEEE 802.16*

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Program: BE (Electronics and Telecommunication Engineering) (CBCGS)
Curriculum Scheme: Rev2016
Examination: BE Semester VIII
Course Code: ECC 802 and Course Name: Wireless Networks

Time: 2 hours Max. Marks: 80

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Question Number	Correct Option
Q1.	A
Q2.	A
Q3.	B
Q4	C
Q5	C
Q6	D
Q7	A
Q8.	B
Q9.	C
Q10.	A
Q11.	A
Q12.	C
Q13.	A
Q14.	B
Q15.	D
Q16.	A
Q17.	C
Q18.	A
Q19.	D
Q20.	B

University of Mumbai

Examination June 2021

Examinations Commencing from 1st June 2021

Program: Electronics & Telecommunication Engineering

Curriculum Scheme: Rev2016

Examination: BE Semester VIII

Course Code: ECCDLO8044 and Course Name: Network Management in Telecommunication

Time: 2 hour Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	Establishment of administrator goals, policies and procedure of network management comes under _____.
Option A:	Operations group
Option B:	Provisioning group
Option C:	Maintenance group
Option D:	Administration group
2.	Which of the following elements of managing your network does not require most of your time?
Option A:	Network management configuration
Option B:	Expansion of network
Option C:	Troubleshooting network
Option D:	Gathering and analyzing statistics for upper management review to conduct business
3.	Which one of the following is not the challenge for IT managers?
Option A:	Managing complex network systems
Option B:	Managing converged networks
Option C:	Management of single and simple network system
Option D:	Management of information
4.	In EMS, S stands for _____.
Option A:	Standard
Option B:	Security
Option C:	System
Option D:	Selection
5.	In B-ISDN Maintenance VC and VP means:
Option A:	Virtual Communication and Virtual Path
Option B:	Virtual Channel and Virtual Path
Option C:	Virtual Communication and Virtual Procedure
Option D:	Virtual Channel and Virtual Procedure
6.	OSI network Model includes
Option A:	Information Model
Option B:	Community Model
Option C:	Connection Model

Option D:	Distribution Model
7.	From where to where is GetRequest PDU sent so that the value of variable or set of variables is retrieved?
Option A:	client; server
Option B:	server; client
Option C:	server; network
Option D:	client;network
8.	The two well -known ports of UDP where the services of UDP can be used by SNMP are……. and …….
Option A:	161; 162
Option B:	160; 161
Option C:	160; 162
Option D:	161; 161
9.	In case of MIB object identifier,which amongst the following could be closely associated
Option A:	1.3.6.1.2.1.1
Option B:	1.3.6.1.2.2.1
Option C:	2.3.6.1.2.1.2
Option D:	2.3.6.1.2.2.1
10.	What Kind of messages are sent by SNMP agent?
Option A:	GetRequest
Option B:	SetRequest
Option C:	Trap
Option D:	Set-Reset
11.	Desktop Management Task force has chosen……Management model
Option A:	Microsoft structure oriented
Option B:	Microsoft client oriented
Option C:	Microsoft agent oriented
Option D:	Microsoft object oriented
12.	In small-scale fading, there is
Option A:	Slow rate of change
Option B:	Rapid rate of change
Option C:	Fixed rate of change
Option D:	None of the above
13.	The main difference between the TMN and eTOM approaches is that
Option A:	the former has been developed using bottom up while eTOM is a top-down approach
Option B:	the former has been developed using a top-down approach while eTOM is a bottom up approach
Option C:	the former has been developed using layered hierarchical fashion while the latter is not
Option D:	the former has been developed using flat centralized paradigm while the latter is hierarchical

14.	At the highest level of integrated architecture of TMN are the functions associated with _____.
Option A:	Network management
Option B:	Service Management
Option C:	Business Management
Option D:	System Management
15.	How many different categories of applications are present in TNM?
Option A:	Six
Option B:	Three
Option C:	Four
Option D:	Five
16.	"ping", the network status monitoring tool, helps to _____
Option A:	Obtain and configures networking interface parameters and status
Option B:	Checks the status of node/host
Option C:	Looks up DNS for name-IP address translation
Option D:	Queries DNS server (supersedes nslookup)
17.	Which one of the following network status monitoring tool helps to obtain and configures networking interface parameters and status?
Option A:	Ping
Option B:	Ipconfig
Option C:	Nslookup
Option D:	Dig
18.	In Virtual Circuit concept the switches are _____, in contrast to _____ packet switching.
Option A:	cell-based, frame-based
Option B:	frame-based, cell-based
Option C:	packet-based, frame-based
Option D:	frame-based, packet-based
19.	There are _____ types of information technology services, namely _____.
Option A:	three; voice, video, and data
Option B:	two; video, and data
Option C:	two; voice, and data
Option D:	two; voice, and video
20.	An ATM interface management entity (IME) module has three versions namely _____.
Option A:	user, network, and system
Option B:	network element, network, and system
Option C:	link, network, and system
Option D:	switch, network, and system

Q2. (20 Marks)	Solve any Four out of Six (5 marks each)
A	Why do you need a network management system?
B	Compare the Internet and OSI specifications for the Object as Packet Counter.
C	Explain the role of Managers and Agents in SNMP.
D	Explain networking with RMON.
E	What is rule based reasoning? Explain in detail
F	Describe LAN emulation architecture and what added features does it bring to a corporate network?

Q3. (20 Marks)	Solve any Four out of Six (5 Marks each)
A	Explain in detail the functions of network management?
B	State the changes that were introduced in SNMPv2 as compared to SNMP.
C	Explain TMN Physical Architecture?
D	Explain 5 applications of TNM management (CFAPS)
E	What is service management
F	Explain the feature of ATM?

University of Mumbai
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Program: Electronics & Telecommunication Engineering

Curriculum Scheme: Rev2016

Examination: BE Semester VIII

Course Code: ECCDLO8044 and Course Name: Network Management in Telecommunication

Time: 2 hour Max. Marks: 80

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Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	D
Q2.	C
Q3.	C
Q4	C
Q5	B
Q6	B
Q7	A
Q8.	A
Q9.	B
Q10.	C
Q11.	D
Q12.	B
Q13.	A
Q14.	C
Q15.	D
Q16.	B
Q17.	B
Q18.	A
Q19.	A
Q20.	A

University of Mumbai

Examination June 2021

Examinations Commencing from 1st June 2021

Program: Electronics and Telecommunication Engineering) (CBCGS)

Curriculum Scheme: Rev2016

Examination: BE Semester VIII

Course Code: ECCDLO8041 and Course Name: Optical Networks

Time: 2 hour Max. Marks: 80

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Q1	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1	Information transfer is basically carried out in Optical communication by means of _____.
Option A:	Optical Attenuation
Option B:	Optical Gain
Option C:	Low refractive index
Option D:	Optical Networking
2.	Optical Network has _____ as a multifunctional element.
Option A:	Optical Node
Option B:	HOP
Option C:	Loss
Option D:	Gain
3.	The optical networking uses_____.
Option A:	Pair of copper conductors
Option B:	Optical Fiber cable
Option C:	Antenna
Option D:	None of above
4.	Optical networking fundamentals are _____ of the transmission techniques.
Option A:	Independent
Option B:	Dependent
Option C:	Useful
Option D:	None of above
5.	Insertion loss in a commercially available circulator is around ----------
Option A:	2dB
Option B:	0.7dB
Option C:	0.2dB
Option D:	1dB
6.	SONET in optic networks means_____.
Option A:	Similar Optical Networks
Option B:	Serial Optical Networks
Option C:	Synchronous Optical Networks

Option D:	Asynchronous Optical Networks
7.	In which topology, data circulates bi-directionally?
Option A:	Ring
Option B:	Bus
Option C:	Star
Option D:	Serial
8.	In SONET, for each frame, the bytes are transmitted ----------
Option A:	from left to right, top to bottom
Option B:	from right to left, bottom to top
Option C:	from left to right, bottom to top
Option D:	from right to left, top to bottom
9.	In _____topology, star and ring topology is combined.
Option A:	Fringe
Option B:	Mesh
Option C:	Seismic
Option D:	Synchronous
10.	Packet Switching is also known as_____
Option A:	Data switching
Option B:	Node switching
Option C:	Frame switching
Option D:	Cell switching.
11.	_____ Circuit is a series of logical connections between source and destination.
Option A:	Virtual
Option B:	Gain
Option C:	Switched network
Option D:	None of above
12.	A quantum or quasiparticle propagated as a travelling non-dissipative wave that is neither preceded nor followed by another such disturbance is known as_____.
Option A:	SONET
Option B:	Solitons
Option C:	OTDM
Option D:	None of above
13.	The network structure formed due to the interconnectivity patterns is known as a _____.
Option A:	Network
Option B:	Topology
Option C:	Circuit
Option D:	None of above
14.	_____ type of fiber-optic coupler causes the distribution of an optical power from more than two input ports among the several output ports.
Option A:	X coupler
Option B:	Tree Coupler

Option C:	Star coupler
Option D:	None of above
15.	Which optical devices are adopted or applicable for routing signals from one waveguide to another?
Option A:	Coupler.
Option B:	Splitter
Option C:	Splice
Option D:	Combiner
16.	Which one of following supports a great number of wavelength channels and reduces the number of switches within the optical network?
Option A:	Waveband switching
Option B:	Optical remuneration
Option C:	Optical genesis
Option D:	Wavelength multiplexing
17.	_____ is usually required by a packet so that the data is not overwritten.
Option A:	Guard band
Option B:	Footer
Option C:	Header
Option D:	Payload
18.	OTDM stands for _____.
Option A:	Optical Transfer Data Mode
Option B:	Optical Time Division Multiplexing
Option C:	Optical Transfer Domain Mode
Option D:	Optical Transfer Domain Measurement
19.	In an optical network, increase in the number of lasers _____the bit rate.
Option A:	Decreases
Option B:	Stabilizes
Option C:	Increase
Option D:	None of above
20.	_____ is the function responsible for detecting failures when they happen and isolating the failed component.
Option A:	Performance management
Option B:	Configuration management
Option C:	Fault management
Option D:	Information management

Q2.	**Solve any Two Questions out of Three** **10 marks each**
A	Describe any five types of Multiplexers and filters.
B	Explain Operational principle of WDM, WDM network elements, WDM architecture.
C	With reference packet switching and access networks, explain synchronization, broadcast OTDM networks and switch based networks.

Q3.	**Solve any Two Questions out of Three** **10 marks each**
A	Explain Optical network routing principals namely impairment aware routing, optical circuit switching and optical packet switching.
B	With reference to design of optical networks, explain transmission system model, power penalty transmitter and receiver optical amplifier.
C	Discuss virtual topology design problem combined SONET/WDM network design and regular virtual technologies.

University of Mumbai
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Curriculum Scheme: Rev2016
Examination: BE Semester VIII
Course Code: ECCDLO8041 and Course Name: Optical Networks

Time: 2 hour Max. Marks: 80

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Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	D
Q2.	A
Q3.	B
Q4	A
Q5	D
Q6	C
Q7	B
Q8.	A
Q9.	B
Q10.	D
Q11.	A
Q12.	B
Q13.	B
Q14.	C
Q15.	A
Q16.	A
Q17.	A
Q18.	B
Q19.	C
Q20.	C