

University of Mumbai
Examination June 2021

Examinations Commencing from 1st June 2021

Program: Information Technology

Curriculum Scheme: Rev2016

Examination: TE Semester VI

Course Code: ITC604 and Course Name: Wireless Network

Time: 2 hour

Max. Marks: 80

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	When an electromagnetic wave travels in free space, it suffers from
Option A:	Absorption
Option B:	Attenuation
Option C:	Refraction
Option D:	Super-refraction
2.	The range of GSM and CDMA technology is ____ and they also have ____ rates and modulation schemes.
Option A:	Different, different
Option B:	Same, same
Option C:	Different, same
Option D:	Same, different
3.	The most critical feature of TDMA operation is
Option A:	Dividing the carrier channel bandwidth into time slots
Option B:	Assignment of time-slots among multiple subscribers
Option C:	Time synchronization to the incoming TDMA frame
Option D:	Providing different access rates to subscribers
4.	GPRS is an overlay on top of the ____ physical layer and network entities.
Option A:	AMPS
Option B:	ETACS
Option C:	GSM
Option D:	IS-95
5.	EDGE is a new radio interface technology with enhanced modulation, and increases the GPRS data rates by up to
Option A:	three times
Option B:	four times
Option C:	six times
Option D:	eight times
6.	With a slotted ALOHA random-access protocol, the maximum throughput is ____ of the full channel capacity
Option A:	18.4%

Option B:	36.8%
Option C:	50%
Option D:	100%
7.	The normalized bandwidth efficiency of the IS-95 CDMA system is
Option A:	64 chips/s/Hz
Option B:	1.35 chips/s/Hz
Option C:	0.98 chips/s/Hz
Option D:	0.5 chips/s/Hz
8.	Which of the following is not a WSN topology?
Option A:	Star
Option B:	Mesh
Option C:	Tree
Option D:	Ring
9.	WSN needs to be
Option A:	Fault Tolerant
Option B:	Adaptable
Option C:	Recyclable
Option D:	Both Adaptable and Recyclable
10.	Which is not the application of VANETs
Option A:	Platooning
Option B:	Traffic information systems
Option C:	Road Transportation Emergency Services
Option D:	video transmission
11.	Which of the following is not a measurement parameter for ad-hoc network?
Option A:	Packet transmission ratio
Option B:	Routing overhead
Option C:	Hop count
Option D:	Network Data Transmission Speed
12.	Which of the following specifies a set of media access control (MAC) and physical layer specifications for implementing WLANs?
Option A:	IEEE 802.16
Option B:	IEEE 802.3
Option C:	IEEE 802.11
Option D:	IEEE 802.15
13.	HIPER-LAN stands for _____
Option A:	High Precision Radio Local Area Network
Option B:	High Performance Radio Local Area Network
Option C:	High Precision Radio Land Area Network
Option D:	Huge Performance Radio Link Access Node

14.	_____ is a low data rate wireless networking protocol targeted towards automation and remote-control applications.
Option A:	ZigBee technology
Option B:	Bluetooth technology
Option C:	HR-PAN
Option D:	UMTS
15.	WiMAX and LTE use _____ in uplink and downlink mechanism.
Option A:	Single antenna configuration
Option B:	Double antenna configurations
Option C:	multiple antenna configurations
Option D:	Radio Network configurations
16.	What is the raw channel bit error rate of Bluetooth?
Option A:	10^3
Option B:	10^{10}
Option C:	10^{12}
Option D:	10^1
17.	An attack in which the site is not capable of answering valid request.
Option A:	Smurfing
Option B:	Denial of service
Option C:	E-mail bombing
Option D:	Ping storm
18.	_____ provides an isolated tunnel across a public network for sending and receiving data privately as if the computing devices were directly connected to the private network.
Option A:	Virtual Protocol Network
Option B:	Virtual Public Network
Option C:	Virtual Private Network
Option D:	Visual Private Network
19.	Calculate number of APs per group supported by a mobility group made up of 12 4402-25 and 12 4402-50 WLC devices?
Option A:	800
Option B:	900
Option C:	1000
Option D:	1200
20.	The number of APs supported by 'Catalyst 3750G Integrated WLC WS-C3750G-24WS-S25' and 'Catalyst 6500 Series WiSM' respectively are _____
Option A:	50,100
Option B:	25,300
Option C:	25,100
Option D:	50,300

Q2. (20 Marks Each)	
A	Solve any Two 5 marks each
i.	Differentiate between different wireless generations, 1G,2G,3G and 4G
ii.	Explain the design issues of VANET and Justify the importance.
iii.	What are the challenges in Wireless sensor network?
B	Solve any One 10 marks each
i.	Explain wireless multiple access techniques with suitable diagrams
ii.	Explain Bluetooth Architecture in Detail along with its Advantages.

Q3 (20 Marks Each)	
A	Solve any Two 5 marks each
i.	What are the Design Considerations for Campus Wireless Networks? Explain
ii.	Compare Mi-Fi and Ly-Fi
iii.	Explain Virtual Private Network and List different protocols?
B	Solve any One 10 marks each
i.	Explain in detail WMAN 802.16 WiMAX Technology.
ii.	What is the difference between a physical channel and a logical channel? Describe types of GSM logical channel.