

# B.E. (EXTC) (Sem-VIII) (CBE&S)

## wireless Networks

EXTC

University of Mumbai

Examinations Summer 2022

Time: 2hour 30 minutes Max. Marks: 80

<b>Q1.</b>	<b>Choose the correct option for following questions. All the Questions are compulsory and carry equal marks</b>
<b>1.</b>	<b>In wireless ad-hoc network .</b>
Option A:	Access point is not required
Option B:	Access point is must
Option C:	Nodes are not required
Option D:	All nodes are access points
<b>2.</b>	<b>According to the specifications, how many Bluetooth devices can actively participate in a small network, called piconet?</b>
Option A:	2
Option B:	9
Option C:	6
Option D:	8
<b>3.</b>	<b>Which scheme implies the integer multiples of the first subcarrier, which are orthogonal to each other?</b>
Option A:	OFDM
Option B:	BPSK
Option C:	QPSK
Option D:	QAM
<b>4.</b>	<b>A scatternet is a collection of</b>
Option A:	One master and slave
Option B:	Only master
Option C:	Piconets
Option D:	Only slaves
<b>5.</b>	<b>Which mode enables peer-to-peer transmission between mobile units</b>
Option A:	Mobile Adhoc Network mode
Option B:	LAN mode
Option C:	Infrastructure mode
Option D:	Adhoc mode
<b>6.</b>	<b>Which transmission media provides the highest transmission speed in a network?</b>
Option A:	Co-axial cable
Option B:	Twisted pair cable
Option C:	Optical cable
Option D:	Ethernet cable (CAT)
<b>7.</b>	<b>The full form of SPIN is</b>
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
8.	<b>Each device in a MANET is -----to move independently in any direction and will therefore change its links to other devices frequently</b>
Option A:	Restricted
Option B:	Free
Option C:	Bonded
Option D:	Need permission
9.	<b>WiMAX uses licensed and unlicensed spectrum to deliver a.</b>
Option A:	Point-to-point connection
Option B:	Point-to-multipoint connection
Option C:	Both P2P and P2MP
Option D:	None of these
10.	<b>A true MANET requires ----- routing</b>
Option A:	Multicast
Option B:	Unicast
Option C:	Broadcast
Option D:	Scattered

<b>Q2</b>	
<b>A</b>	<b>Solve any Two</b>
	<b>5 marks each</b>
i.	<i>Define link types in Bluetooth</i>
ii.	<i>Explain Various WPAN sub standards in terms range, speed and IEEE Standards.</i>
iii.	<i>Describe the VANET network architecture.</i>
<b>B</b>	<b>Solve any One</b>
	<b>10 marks each</b>
i.	<i>Explain SPIN and LEACH Protocols of wireless sensor networks in details.</i>
ii.	<i>Describe IEEE 802.11 equipment. Why is it preferable to use smaller packets in a WLAN environment?</i>

<b>Q3</b>	
<b>A</b>	<b>Solve any Two</b>
	<b>5 marks each</b>
i.	<i>Explain the Routing protocols in Wireless Mesh Network</i>
ii.	<i>Explain in detail the three phases in Wireless Network planning process.</i>
iii.	<i>Explain with examples centralized and distributed schemes in localization of WSN nodes.</i>
<b>B</b>	<b>Solve any One</b>
	<b>10 marks each</b>
i.	<i>Explain various Bluetooth connection establishment states. Draw a complete flow diagram.</i>
ii.	<i>Consider a Bluetooth piconet where a slave in piconet 1 is sending a packet to the master with DM3 packet format. What is the supported maximum rate of the user from slave to master direction?(DM3 packets are the same as that of DM1 except that they can cover up to threetime slots and can carry up to 123 infobytes and Atime slot period in Bluetooth is 625 MicroSeconds.)</i>



<b>Q4</b>	
<b>A</b>	<b>Solve any Two</b>
	<b>Write short note on 5 marks each</b>
i.	M2M communication
ii.	VANET
iii.	MANET
<b>B</b>	<b>Solve any One</b>
	<b>10 marks each</b>
i.	Explain Wireless Mesh Network and its applications
ii.	Explain Link(Uplink and Downlink) Budget for GSM.