Program: BE Electronics & Telecommunication
Curriculum Scheme: Revised 2016
Examination: Final Year Semester VIII
Course Code: ECC802 and Course Name: Wireless Networks

Time: 1 hour **Max Marks:50**

1 A wireless personal area network is also known as
(a) Short wireless distance network
(b) Large wireless distance network
(c) Personal short distance network
(d) wireless network

2 The architecture of WPAN consists of
(a) One master and one slave device
(b) Only slave devices
(c) One master and number of slaves
(d) Only master

3 Connectivity topologies defined in WPAN are
(a) Only piconet
(b) Scatternet
(c) Both piconet and scatternet
(d) None of the above

4 A scatternet is a collection of
(a) One master and slave
(b) Only master
(c) Piconets
(d) Only slaves

5 The ZigBee is a commercial standard developing the application on top of which of the following standards that define the PHY and the MAC layers:
(a) IEEE 802.15.4
(b) IEEE 802.11
(c) IEEE 802.16
(d) IEEE 802.3

6 IEEE 802.15.4 is designed for low cost products, supports limited battery consumption and _____.
(a) a long range operation(>1km)
(b) a medium range operation(100m)
(c) a short range operation(10m)
(d) a long range operation(upto 1km)

7 The data rate of Zigbee for WBAN applications:
(a) 200kbs at 2.4GHz
(b) 250Mbs at 2.9GHz
(c) 250kbs at 2.4GHz
(d) 250kbs at 1.4GHz

8 Major technologies of WPAN are
(a) Bluetooth, ZigBee
(b) GSM
(c) GPS
(d) GPRS

9 IEEE 802.15.3 standard has been proposed for
(a) Low-rate WPAN
(b) High-rate WPAN
(c) Mesh-based WPAN
(d) coexistence

10 ZigBee system consists of
(a) Full function device
(b) Reduced function device
(c) Either (a) or (b)
(d) Both (a) and (b)

11 A peer-to-peer network can be
(a) Ad hoc
(b) Self-organizing
(c) Self-healing
(d) All the above

12 ZigBee supports three topologies: _____,_____ and _____.
(a) Star, mesh, Cluster tree
(b) Star, Bus, tree
(c) Ring, mesh, Cluster tree
(d) Star, mesh,Ring

13 RFID systems that exist in the world does not operate in
(a) low frequency
(b) high frequency
(c) Ultra high frequency
(d) Ultra Low Frequency

14 Chip-based RFID tags contain ____
(a) silicon chips and antennas
(b) silicon chips only
(c) Only antennas
(d) Silicon chips and data processor

15 _____ decodes the data encoded in the tag's integrated circuit (silicon chip)
(a) The reader
(b) The transponder
(c) The digital Memory chip
(d) Middleware

16 Communication Range for Active tags in RFID is
(a) 10 meters or more
(b) 100 meters or more
(c) Less than 10 meters
(d) 5 meters or more

17 Which type of RFID tag has internal power source
(a) Passive Tag
(b) Semi Passive Tag
(c) Active Tag
(d) Non Active Tag

18 NFC stands for
(a) Near Field Communication
(b) Near Frequency Communication
(c) Near Far Communication
(d) New Field Communication

19 NFC uses _____to enable simple and secure communication between electronic devices.
(a) Magnetic field induction
(b) Electric field
(c) Frequency reuse
(d) Thermal induction

20 NFC technology has a range typically upto
(a) 5cm
(b) 10cm
(c) 100cm
(d) 1m

21 Which of the following data rate is not supported by NFC technology
(a) 106 kbits
(b) 212 kbits
(c) 424 kbits
(d) 1024 kbits

22 Ultra-wideband technology is used for transmitting information spread over a _____
(a) bandwidth (<500 MHz)
(b) large bandwidth (>500 KHz)
(c) bandwidth (<500 KHz)
(d) large bandwidth (>500 MHz)

23 Ultra-wideband characteristics are suited for_____ application.
(a) Long distance, low data rate
(b) Short distance, High data rate
(c) Long distance, High data rate
(d) Short distance, low data rate

24 In WLANs, the connection between the client and the user is accomplished by
(a) RF or Infrared (IR) communications
(b) Co-axial cable
(c) Optical fiber
(d) Twisted pair cable

25 A wireless LAN consists of _____
(a) complex network
(b) simple network
(c) nodes and intermediate points
(d) nodes and access points

26 The term _____ is used to describe UHF technology
(a) broad band
(b) narrow band
(c) spectral band
(d) spread band

27 The _____cannot be used on a WLAN environment
(a) coherent detection mechanisms
(b) collision detection mechanisms
(c) incoherent detection mechanisms
(d) non-collision detection mechanisms

28 In WLAN, the AP acts as a _____ for wireless user's data to be routed onto the wired network
(a) router
(b) gateway
(c) hub
(d) switch

29 _____ significantly improves protection against interfering (or jamming) signals.
(a) FHSS
(b) DSSS
(c) IR technology
(d) UHF technology

30 An _____ is the network architecture for providing communication between wireless clients and wired network resources
(a) central network
(b) core network
(c) intermediate network
(d) infrastructure network

31 The _____ service provides a mechanism for one station to identify another station
(a) authentication
(b) authorization
(c) monitoring
(d) recovery

32 _____ is used for the PSDU before transmission
(a) Data transferring
(b) Data restoring
(c) Data securing
(d) Data whitening

33 IBSS stands for
(a) Initial Basic Service Set
(b) Independent Basic Service Set
(c) Independent Beacon Service Set
(d) Initial Beacon Service Set

34 The _____ contains information marking the start of a PSDU frame
(a) Synchronization (Sync) field
(b) SFD (Start Frame Delimiter) field
(c) Service field
(d) Data rate field

35 IEEE 802.16 standard is commonly known as
(a) WiMAX
(b) Wi-Fi
(c) WLAN
(d) WPAN

36 Which of the following bandwidth for user is provided by WiMAX?
(a) Very less
(b) Larger
(c) Significant
(d) Less

37 WiMAX envisions which of the following mobility-related usage scenarios?
(a) Nomadic and portable
(b) complications in mobility
(c) partial mobility
(d) no mobility

38 Subchannelization is a key concept for.
(a) Wi-Fi
(b) WiMAX
(c) WMAN
(d) WPAN

39 Is not an advantage of IEEE 802.16 incorporating.
(a) Packing
(b) Fragmentation
(c) Bandwidth allocation
(d) Roaming within a networks

40 A high-level QoS and scheduling support is function of.
(a) Wi-Fi
(b) WiMAX
(c) WPAN
(d) WLAN

41 MMDS deployment time and cost is_____
(a) Low
(b) High
(c) Very high
(d) Moderate

42 In the 1X EV-DO average rate (or throughput) of the downlink implies lower-data-rate users will have proportionately ----------latency.
(a) zero latency
(b) lower latency
(c) higher latency
(d) Latency is unchanged
43 Dedicated HSDPA carrier the power should be ?
(a) 8 to 9 W
(b) 10 to 12 W
(c) 13 to 15 W
(d) 12.5 to 13.5 W
44 The 802.16a specifies protocol that supports.
(a) Low latency applications
(b) High latency applications
(c) Both low latency and high latency applications
(d) moderate Latency applications
45 WiMAX uses licensed and unlicensed spectrum to deliver
(a) Point-to-point connection
(b) Point-to-multipoint connection
(c) Both P2P and P2MP
(d) Broadcast

46 In an application, LMDS has its own 46 Mbps channel. According to queuing theory, if the channel is 50% loaded, the queuing time will be equal to the downloaded time. Under these conditions, how long does it take to download a 50 kb video clip?
(a) 8 ms
(b) 8.69 ms
(c) 9.69 ms
(d) 9 ms

47 IEEE 802.16e-2005 uses which of the following multiple access technique?
(a) OFDM
(b) OFDMA
(c) SOFDM
(d) SOFDMA
48 WMAN-OFDM PHY layer is the version of_____
(a) 12 point OFDM
(b) 24 point OFDM
(c) 125 point OFDM
(d) 256 point OFDM

49 Estimate the average SINR of HSDPA when the maximum transmit power of DSCH is 5.5 W and total base station power is 18 W. Use and G as 0.2 and 0.363, respectively.
(a) 1.4dB
(b) 1.2dB
(c) 10 dB
(d) 0.4 dB

50 Consider a data system in which P1=1/2, P2=1/3, and P 3=1/6. The data rates are R1=16 kbps, R2=64 kbps, and R3=1024 kbps, respectively. The assigned slots are S1=16, S2=8 and S3=2. What is the average throughput?
(a) 100.1 kbps
(b) 58.2 kbps
(c) 200 kbps
(d) 25.4 kbps
51 A link budget is accounting of all _____
(a) Gain and losses from the transmitter
(b) Power transmitted by transmitter
(c) Power received by receiver
(d) Power transmitted and received

52 If the radius of the cellular cell is 2.1km, the area of the cell is _____.
(a) 4.45sq.km
(b) 11.45 sq.km
(c) 6.615 sq.km
(d) 5.53sq.km

53 In link budget of GSM 1800, uplink is from _____ and downlink is from _____.
(a) Mobile station to Base station, Base station to mobile station
(b) Base station to mobile station, Mobile station to Base station
(c) Mobile station to Base station, Base station to MSC
(d) Base station to mobile station, Mobile station to MSC

54 In ____ systems with mostly voice traffi c, both uplink and downlink tend to be in balance; however, in ___ systems with both voice and data traffic, one of the links can be loaded more than the other, so that either link could be the limiting factor in determining the cell capacity or coverage.
(a) 2G, 3G
(b) 3G, 2G
(c) 1G, 2G
(d) 3G,4G
55 Factors that cannot be controlled directly, but must be considered in the link budget, include _____
(a) antenna gain
(b) co-channel interference
(c) Transmitter radiated power
(d) propagation path loss and system bandwidth

56 In the time division multiple access/frequency division multiple access (TDMA/FDMA) system, the interference analysis is required for _____, whereas in code division multiple access (CDMA) it is needed for _____.
(a) for cell loading and sensitivity analysis., for frequency allocation
(b) for frequency allocation, for cell loading and sensitivity analysis.
(c) for user requirement, for cell allocation analysis
(d) For cell allocation analysis, for user requirement
57 _____ accounts for nonorthogonal interference received by the serving cell because of a multipath.
(a) NonOrthogonality factor
(b) Commercial factor
(c) Orthogonality factor
(d) Analysis factor

58 A wireless adhoc network uses _____
(a) smart network topology
(b) static network topology
(c) standard network topology
(d) dynamic network topology
59 MANETs stand for
(a) Mobile Automobile Networks
(b) Mobile Adhoc Networks
(c) Mobile Add-on Networks
(d) Mobile Autonomous Networks
60 _____ may be denied channel access unnecessarily.
(a) Redundant nodes
(b) Exposed nodes
(c) Registered nodes
(d) Un-registered nodes
61 In Power Control MAC , the RTS and CTS packets are sent using
(a) low power
(b) medium power
(c) adequate power
(d) maximum available power
62 AODV stands for
(a) Ad Hoc On-Demand Digital Vector
(b) Ad Hoc On-Demand Distance Vector
(c) Add On-Demand Distance Vector
(d) Ad Hoc On-Data Distance Vector
63 In Global State Routing protocol, _____ contains the shortest distance to each destination node.
(a) next hop table
(b) distance table
(c) topology table
(d) vector table

64 In a VANET, each vehicle in the system is equipped with a computing device, a short-range wireless interface, and a _____ receiver.
(a) SDR
(b) GPS
(c) MANET
(d) Optimal
65 A MANET is a _____ established networks
(a) shared
(b) spontaneous
(c) dedicated
(d) planned
66 AODV is a method of routing messages between _____
(a) intermediate nodes
(b) mobile nodes
(c) adjacent nodes
(d) sensor nodes

67 The size of a VANET is not fixed, hence the network size is said to be _____
(a) unbounded
(b) adequate
(c) vast
(d) unlimited

68 The Proactive routing protocols are also known as _____ routing protocols.
(a) vector-driven
(b) table-driven
(c) link state
(d) on-demand
69 What is not an HTTP command, for IoT devices
(a) DELETE
(b) OPTIONS
(c) TRACE
(d) CHECK

70 IoT edge computing is processing raw data at the boundaries of the network,
(a) Very close to the sink
(b) Far away from the point of data creation
(c) Near to the point of data creation
(d) Remote area
71 The mobile sensors are able to control their radios via the.
(a) MAC protocol
(b) Network layer
(c) Application layer
(d) Routing protocol
72 _____ in IoT is one of the key characteristics, devices have different hardware platforms and networks.
(a) Sensors
(b) Heterogeneity
(c) Security
(d) Connectivity
73 TinyOS system and programs written for TinyOS are written in a special programming language called
(a) Network embedded systems C (nesC)
(b) cpp
(c) java
(d) python
74 TinyOS is based on an
(a) multithreading
(b) Event driven programming model
(c) Real application based
(d) Tcp/IP
75 '_____' is a mesh-networking standard intended for uses such as embedded sensing,
(a) WMAN
(b) WLAN
(c) ZigBee
(d) bluetooth
76 _____ for providing security in shopping malls, parking garages, and other facilities
(a) Wireless traffic sensor network
(b) Wireless surveillance sensor networks
(c) Wireless tracking sensor network
(d) Defence sensor network

77 _____schedule is used to send data from node-to-head cluster
(a) A FDMA
(b) SC-FDMA
(c) TDMA
(d) OFDMA

78 Nodes with _____probabilities are chosen as the CHs
(a) lower
(b) higher
(c) least
(d) nil
79 Which of the following are components of a sensor node?
(a) Mesh network
(b) GPU
(c) Microcontroller
(d) Active tags

80 _____ node sets up a time division multiple access (TDMA) schedule for data transmission coordination within the cluster.
(a) Source
(b) sink
(c) Cluster head
(d) cluster member

81 _____ distributed infrastructure-building protocol that enables nodes to discover their neighbors and establish transmission/reception schedules for communication without the need for any local or global master nodes.
(a) Flooding
(b) Gossiping
(c) SMAC
(d) SPIN
82 A communication link is established in WSN consists of a pair of time slots operating at a randomly chosen but fixed frequency by
(a) Application layer
(b) Phy layer
(c) MAC protocol
(d) Routing protocol

83 Power conservation is achieved by using a random wake-up schedule during the connection phase and by turning the radio OFF during idle time slot
(a) Battery consumption
(b) Power conservation
(c) Signal acquisition
(d) Signal conditioning
84 The technology that promises a potentially revolutionary approach to radio communication in WBANs is
(a) Wi-Fi
(b) Wi-Max
(c) UWB
(d) GSM
85 The Channel width of GSM is
(a) 124KHz
(b) 270KHZ
(c) 200KHz
(d) 890KHz
86 The uplink frequency of GSM is
(a) 890-925 MHz
(b) 935-960 MHz
(c) 890-915 MHz
(d) 1800-1900MHz
87 The advantage of SPIN protocol over blind flooding or gossiping data dissemination methods is that it avoids the problem of
(a) Implosion, Overlap, Resource blindness
(b) Overlap, Resource blindness
(c) Implosion, Resource blindness
(d) Resource blindness

88 An electroencephalography (EEG) sensor is for monitoring the activity of
(a) Heart
(b) Muscle
(c) Brain
(d) Respiration
89 Larger cells are more useful in
(a) Densely populated areas
(b) Rural areas
(c) Lightly populated areas
(d) Mountainous areas

90 dbm is the abbreviation for power ratio in decibels of the measured power referenced to
(a) 1W
(b) 100mW
(c) 1mW
(d) 0.1mW

91 Diversity technique is a method for improving which of the following message signal by utilizing two or more communication channels with different characteristics?
(a) Error detection capability
(b) Error correction capability
(c) Reliability
(d) Forward error correction