29. a. List the entities of mobile IP and describe data transfer from a fixed node to mobile node and vice versa. Why and where is encapsulation needed?   10   3   4   1

(OR)

b. What is the specific need of WAP when WWW and HTTPs are there? Explain the WAP architecture in detail using necessary diagram.   10   4   4   1

30. a. What is the mechanism used in IEEE 802.11 to avoid hidden terminal problem? Explain in detail using necessary diagram.   10   3   5   1

(OR)

b. How does femto-cell addresses indoor coverage holes in macro cell base station? What are the limitations of femto-cells?   10   4   5   1

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Reg. No.													

B.Tech. DEGREE EXAMINATION, NOVEMBER 2022
Sixth/ Seventh Semester

18CSE458T – WIRELESS AND MOBILE COMMUNICATION
(For the candidates admitted from the academic year 2018-2019 to 2019-2020)

Note:
(i)   **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.
(ii)   **Part - B** should be answered in answer booklet.

Time: 2½ Hours   Max. Marks: 75

PART – A (25 × 1 = 25 Marks)
Answer **ALL** Questions

	Marks	BL	CO	PO
1. Why spread spectrum technique is inefficient for a single user?	1	2	1	1

    (A) Small transmission bandwidth   (B) Large transmission bandwidth
    (C) Fixed transmission bandwidth   (D) Narrow transmission bandwidth

2. In which modulation technique does the phase of the carrier signal is changed by varying the sine and cosine inputs at a particular time   1   2   1   2
    (A) Frequency modulation   (B) Amplitude modulation
    (C) Pulse code modulation   (D) Phase shift key modulation

3. _____ is the process in which frequency of the carrier signal changes with respect to message (or) modulating signal   1   1   1   1
    (A) Frequency modulation   (B) Amplitude modulation
    (C) Phase modulation   (D) Pulse modulation

4. The sharing of a medium and its link by two (or) more devices is called   1   1   1   1
    (A) Full duplex   (B) Multiplexing
    (C) Processing frames   (D) Statistical frames

5. In code division multiple access multiple users occupy a _____ transmission channel.   1   1   1   1
    (A) Different   (B) Same
    (C) Multiple   (D) Transparent

6. Assigning different slots for uplink and downlink using the same frequency is called as   1   2   2   1
    (A) Frequency division duplex   (B) Code division duplex
    (C) Space division duplex   (D) Time division duplex

7. Cell splitting is known as subdividing the _____ into _____.   1   1   2   1
    (A) Small cell, microcell   (B) Macro cell, micro cell
    (C) Congested cell, smaller cell   (D) Congested cell, transmitter cells

8. _____ is the maximum number of channels that can be provided in a fixed frequency band   1   1   2   1
    (A) Radio capacity   (B) Channel capacity
    (C) Carrier capacity   (D) Spectral capacity

9. What is a cluster in cellular system?   1 2 2 1
   - (A) Group of frequencies
   - (B) Group of cells
   - (C) Group of subscribers
   - (D) Group of mobile systems

10. A small division of a given geographical area is known as   1 1 2 1
    - (A) Shell
    - (B) Core
    - (C) Cell
    - (D) Kernel

11. The shape of the cellular region for maximum ratio coverage is   1 1 3 1
    - (A) Circular
    - (B) Oval
    - (C) Hexagon
    - (D) Square

12. Identify the reason behind assigning of different channels to neighboring cells   1 2 3 1
    - (A) To minimize interference
    - (B) To minimize area
    - (C) To maximize throughput
    - (D) To maximize capacity of each cell

13. In code division multiple access if two vectors are called orthogonal is their inner product is   1 2 3 1
    - (A) 1
    - (B) –1
    - (C) 11
    - (D) 0

14. Which of the following is not a version of carrier sense multiple access?   1 1 3
    - (A) Non-persistent
    - (B) NP-persistent
    - (C) P-persistent
    - (D) I-persistent

15. Geo-synchronous satellites are located above _____ from earth surface.   1 1 3 1
    - (A) 1000 km
    - (B) 2000 km
    - (C) 3000 km
    - (D) 36000 km

16. Which of the following wireless application protocol stack is compatible for handling connections reconnections and suspensions?   1 2 4 1
    - (A) Wireless application environment
    - (B) Wireless session protocol
    - (C) Wireless transaction protocol
    - (D) Wireless transport layer security

17. The address used by a mobile node in a foreign network is called as _____.   1 1 4 1
    - (A) Unique address
    - (B) Duplicate address
    - (C) Care of address
    - (D) Physical address

18. _____ language assisted in creating pages delivering wireless application protocol data   1 1 4 1
    - (A) Wireless markup language
    - (B) Wired markup language
    - (C) Hypertext markup language
    - (D) Java programming language

19. Which entity buffers all packets with destination mobile host and additionally 'snoops' in snooping TCP   1 2 4 1
    - (A) Home agent
    - (B) Foreign agent
    - (C) Correspondent host
    - (D) Source router

20. Wireless application protocol is a _____ suite.   1 1 4 1
    - (A) Protocol
    - (B) Security
    - (C) Message
    - (D) Packet

21. Which of the following is not a standard of wireless LAN?   1 1 5 1
    - (A) IEEE 802.11 a
    - (B) HIPERLAN
    - (C) HIPERLAN 12
    - (D) AMPS

22. Interconnected collection of piconet is called as _____.   1 1 5 1
    - (A) Multinet
    - (B) Macronet
    - (C) Scatternet
    - (D) Mininet

23. IEEE 802.15.4 standard is used with   1 1 5 2
    - (A) Zigbee
    - (B) Rubee
    - (C) Wibee
    - (D) Z-wave

24. Wi-max uses _____ multiplexing.   1 1 5 1
    - (A) Time division multiplexing
    - (B) Orthogonal frequency division multiplexing
    - (C) Space division multiplexing
    - (D) Channel division multiplexing

25. In an emergency situation with no existing infrastructure computing devices are connected using   1 2 5 2
    - (A) MANET
    - (B) Cell network
    - (C) LAN
    - (D) Wi-Fi

PART – B (5 × 10 = 50 Marks)
Answer ALL Questions

     Marks BL CO PO

26. a. What is the significance of a spread spectrum system? How can spreading be achieved? How can DSSS systems benefit form multi-path propagation?   10 4 1 1

(OR)

    b. Explain ASK, BFSK and BPSK in detial. Encode the data 01100 using ASK, BFSK and BPSK. Show it in diagram.   10 3 1 1

27. a. How does adjacent channel interference and co-channel interference affects cellular communication? Explain with suitable diagrams.   10 4 2 1

(OR)

    b. Explain multiple access technique with collision avoidance scheme in detail using necessary diagrams.   10 3 2 1

28. a. Give the reasons for a handoff in GSM and its associated problems. Explain the step-by-step procedure involved during a handoff process and types of handoff.   10 4 3 1

(OR)

    b. What are the various types of satellite orbits? Explain the characteristics, merits and demerits of each satellite types according to its orbit location.   10 3 3 1