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M.Sc. (IT) (Third Semester)
Examination, Dec. - Jan., 2021-22
(Elective-V-I)
MOBILE COMMUNICATION
(M.Sc. (IT)-305)

Time : Three Hours] 　　　　　*[Maximum Marks:100*
　　　　　　　　　　　　　　　[Minimum Pass marks : 40

Note : Attempt all sections as directed

Section - A

1 mark each

(Objective/Multiple choice questions)

Note : Attempt all questions.

Choose the correct answer :

1. Which of the following is / are the main part (s) of basic cellular system.

   (A)　A mobile unit

   (B)　A cell site

   (C)　A mobile Telephone Switching Office

   (D)　All of the above

P.T.O.

[2]

2. Fading of the received radio signals in a mobile communication environment occurs because of............

   (A)　Direct propagation.

   (B)　Multipath Propagation

   (C)　Bi-path propagation

   (D)　None of the above

3. State whether true or false.

   1.　The cells or subdivisions of a geographical area are always always hexagonal.

   2.　A land to Mobile call originates through the telephone exchange.

   (A)　True, False

   (B)　False,True

   (C)　False, False

   (D)　True,True

4. Which mode is used for installing networks in wireless communication device characteristics?

   (A)　Fixed and wired

   (B)　Mobile and wired

   (C)　Fixed and wired

   (D)　Mobile and wireless

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5. Wireless LANs implement security measures in the

   (A) Systems Layers

   (B) Data Link Layers.

   (C) Sub Layers

   (D) Multi Layers

6. Specifications for a wireless LAN are called.

   (A) Standard 802.3z

   (B) Standard 802.3u

   (C) Project 802.3.

   (D) IEEE 802.11.

7. In wireless LAN, there are many hidden stations so we cannot detect the

   (A) Frames.

   (B) Collision

   (C) Signal.

   (D) Data

8. Term that is used for stationary or mobile wireless station and also have optional central base station is called-

   (A) Point to Point

   (B) Multi Point

   (C) Network Point

   (D) Access Point

9. Which statement concerning GPS is TRUE?

   (A) It cannot be used in all parts of the world

   (B) There are 12 functioning GPS satellites at present.

   (C) It may be suspended without warning.

   (D) Two position lines are used to give a 2D fix.

10. Most GPS receivers use the doppler shift of the carrier phase to compute............

   (A) Latitude

   (B) Longitude

   (C) Speed

   (D) Time

11. What is Mobile communication?

   (A) Allows to communicate from different locations with out the use of physical medium.

   (B) Allows to communicate from different locations with the use of physical medium.

   (C) Allows to communicate from same locations with out the use of physical medium.

   (D) Allows to communicate from same locations with the use of physical medium.

12. Which of the following is a type of wireless communication?

 (A) LAN

 (B) WAN

 (C) PAN

 (D) All of the mentioned

13. Why wireless communication is used?

 (A) It enables billion of people to connect to the Internet

 (B) Lowers the cost of network infrastructure.

 (C) Makes services more inexpensive.

 (D) All of the mentioned.

14. Which of the following specifies a set of media access control (MAC) and physical layer specifications for implementing WLANs?

 (A) IEEE 802.11.

 (B) IEEE 802.16

 (C) IEEE 802.15

 (D) IEEE 802.3

15. Radio capacity may be increased in cellular concept by

 (A) Increase in radio spectrum

 (B) Increasing the number of base stations & reusing the channels.

 (C) Both (A) & (B)

 (D) None of the above

16. In a Cellular network, which of the following is used to use the same frequency for others?

 (A) Frequency hopping

 (B) Frequency reuse

 (C) Frequency planning

 (D) None of the above

17. Which of the following uses wireless as the mode of communication for transferring or exchanging data between various mobile over a short-range?

 (A) Ad hoc computing

 (B) Mobile computing

 (C) Bluetooth technology

 (D) None of the above

18. What geometric shape is used in Cellular system design?

 (A) Circle

 (B) Square

 (C) Hexagon

 (D) Pentagon

19. Which Propagation mode follows the curvature of the earth surface?

 (A) Ground-wave propagation

 (B) Sky-Wave propagation

 (C) Line-of sight Propagation

 (D) Electromagnetic propagation

20. Which of the following is not a characteristic of cellular telephone system?

(A) Accommodate a Large number of users

(B) Large geographic area

(C) Limited Frequency Spectrum

(D) Large Frequency Spectrum

Section - B

(2 marks each)

(Very Short Answer Type Questions)

Note- Attempt all questions Answer using 2-3 Sentences.

1. What are the limitations of mobile computing?

2. "MAC protocol designed for infrastructure based wireless network may not work satisfactory in infrastructure less environment." Justify

3. Define Handoff. What are its types?

4. List the applications of MANET's.

5. What are the three components of GPS?

6. Compare Agent solicitation and Agent discovery.

7. Differentiate between traditional IP and Mobile IP.

8. What is hybrid routing protocol?

9. Distinguish between infrastructure-based network and infrastructure less network.

10. What is GPS?

Section - C

(3 marks each)

(Short Answer Type Questions)

Note : Attempt all questions Answer precisely using<75 words.

1. Explain the distinguishing features of various generations of wireless networks.

2. Discuss the characteristics of satellite communication.

3. What are the essential features of MANET?

4. What is tunneling in mobile IP?

5. What is the role of Home agent and Foreign agent in mobile IP?

6. Discuss briefly the user scenarios of Bluetooth.

7. Describe the mobile satellites systems (LEO,GEO and MEO).

8. Explain the categories of wireless networks

9. Distinguish wireless LAN and wired LAN.

10. Identify the issues of Wireless MAC Protocol.

Section - D

6 Marks Each

(Long Answer Type Questions)

Note : Attempt all questions, answer precisely using 150 words.

1. Explain the different generations of wireless network.

Or

Describe the present state of wireless mobile communication system highlighting various evolutionary stages therein.

2. Draw a block diagram for satellite communication system. Explain the function of each block.

Or

Explain in details GPS positioning location principles.

3. What is the working mechanism of cellular networks? How their performance can be measured? Explain.

Or

Explain the operation of mobile IP with the help of a suitable schematic diagram and by suitable examples.

4. Explain the system and protocol architecture of IEEE 802.11 in detail.

Or

Summarize the issues in the Wireless MAC Protocols.

5. What is MANET? How is it different from cellular system?

Or

Explain the Dynamic Source Routing with an example.

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