Avinashilingam Institute for Home Science and Higher Education for Women

(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Examination – August 2020
VI Semester

Class : III UG **Time : 2 Hours**
Major : Information Technology **Max. Marks: 50**

15BITC27 Mobile Communication
Part-A **10 x 1 = 10**
Choose the Correct Answer

1. The FDMA channel carries ____ phone circuit at a time.
   a. ten b. two
   c. one d. several

2. In TDMA, Preamble contains
   a. address b. data
   c. guard bits d. trail bits

3. The process of transferring a mobile station from one base station to another is
   a. MSC b. roamer
   c. hand off d. forward channel

4. Commonly used mode for 3G networks is
   a. TDMA b. FDMA
   c. TDD d. FDD

5. The shape of the cellular region for maximum radio coverage is
   a. circular b. square
   c. oval d. hexagon

6. Guard band is
   a. the small unused bandwidth between the frequency channels to avoid interference
   b. the bandwidth allotted to the signal
   c. the channel spectrum
   d. the spectrum acquired by the noise between the signal

7. Pure ALOHA is a
   a. random access protocol b. scheduled access protocol
   c. hybrid access protocol d. demand access protocol

8. Coherence time is
   a. indirectly proportional to doppler spread
   b. directly proportional to doppler spread
   c. directly proportional to square of doppler spread
   d. directly proportional to twice of doppler spread

9. Wireless LANs implement security measures in the
   a. system layers b. data link layers
   c. sub layers d. multi layers

10. The basic GSM is based on _____ traffic channels.
   a. connection oriented b. connection less
   c. packet switching d. circuit switching

Part B **3 x 6 = 18**

Answer any **Three** questions

Each answer should not exceed 400 words or two pages

11. Briefly discuss the reference model in mobile communication.

12. Discuss the main problems of signal propagation. Why do radio waves not always follow a straight line? Justify with example.

13. List the benefits of reservation schemes. How are collisions avoided during data transmission?

14. Discuss the usage of satellites in mobile communication.

15. Discuss the effects of near and far terminals in Medium Access Control.

16. Explain how HSCSD offers faster data transmission to users than GSM service.

17. Discuss the factors that differentiate the functionalities of Aloha and Slotted Aloha.

18. Write a note on Digital Video Broadcasting.

19. Differentiate Infrared and Radio transmission techniques.

20. Deliberate the differences between infrastructure based and ad-hoc networks with regard to roaming.

Part C **2 x 11 = 22**

Answer any **Two** questions

Each answer should not exceed 800 words or four pages

21. Explain the difference between the three basic propagation mechanisms that give rise to signal attenuation in a wireless medium.

22. Illustrate with a reference model the functionalities offered by Bearer services and Tele services in GSM.

23. Illustrate with flow diagram the process involved in the following activities:
    i. Mobile station registration in GSM network
    ii. Mobile call setup and Termination

24. Discuss the authentication and security features of GSM in detail.

25. Discuss the usage of SDMA and FDMA in accessing the transmission channels.

26. Explain the key features of GPRS and show how it enhances the services of GSM.

27. Discuss the merits and demerits of using the following orbits - GEO, MEO and LEO for positioning the satellites.

28. Explain the working of digital audio broadcasting.

29. Discuss the features and functionalities of Multimedia Object Transfer protocol.

30. Discuss the various services offered by wireless ATM. How it manages Handover in its environment?

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