Master of Computer Applications
MCAE513: Mobile and Satellite Communication Networks
Unique Paper Code: 223402513
Semester V
Nov-Dec 2022
Year of admission: 2020

Max. Marks: 70

Time: Three Hours

Instructions:
1. All questions are compulsory.
2. Attempt all the parts of a question together.

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(10)

1. Define the concept of
   (a) Frequency Reuse *diff cells.*
   (b) Cell Splitting *max area cov.*
   (c) Adhoc WLAN
   (d) Pure ALOHA
   (e) Slotted ALOHA

2. (a) Define ASK, PSK, FSK digital modulation schemes. Which of the scheme has high noise immunity and why? *PSK* (5)
   (b) Is multipath fading affect the quality of wireless communication? Justify your answer. (5)

3. (a) What is CDMA Multiple Access Scheme? How is Up-link data from mobile phones decoded in CDMA? (5)
   (b) What is SDMA and explain its features and the problems associated with it. (5)

4. (a) What is GPRS network? What is its configuration? How data communication takes place using GPRS? (5)
   (b) What is Handoff in mobile communication? Differentiate between Hard and Soft Handoff. (5)

5. (a) What is CSMA/CA protocol? How is collision avoided in WLAN using such protocol? (5)
   (b) Why do we need wireless LAN. Briefly explain IEEE 802.11 WLAN architecture in detail. (5)

6. (a) How is positioning done in GPS? What is the minimum number of satellites required to determine one's position using GPS? Justify your answer (5)
   (b) What are the different configurations of VSAT network? What are their advantages and disadvantages? (5)

7. What is GSM? Explain its architecture in detail with diagram. Also explain its registers, interfaces and protocols in detail. (10)