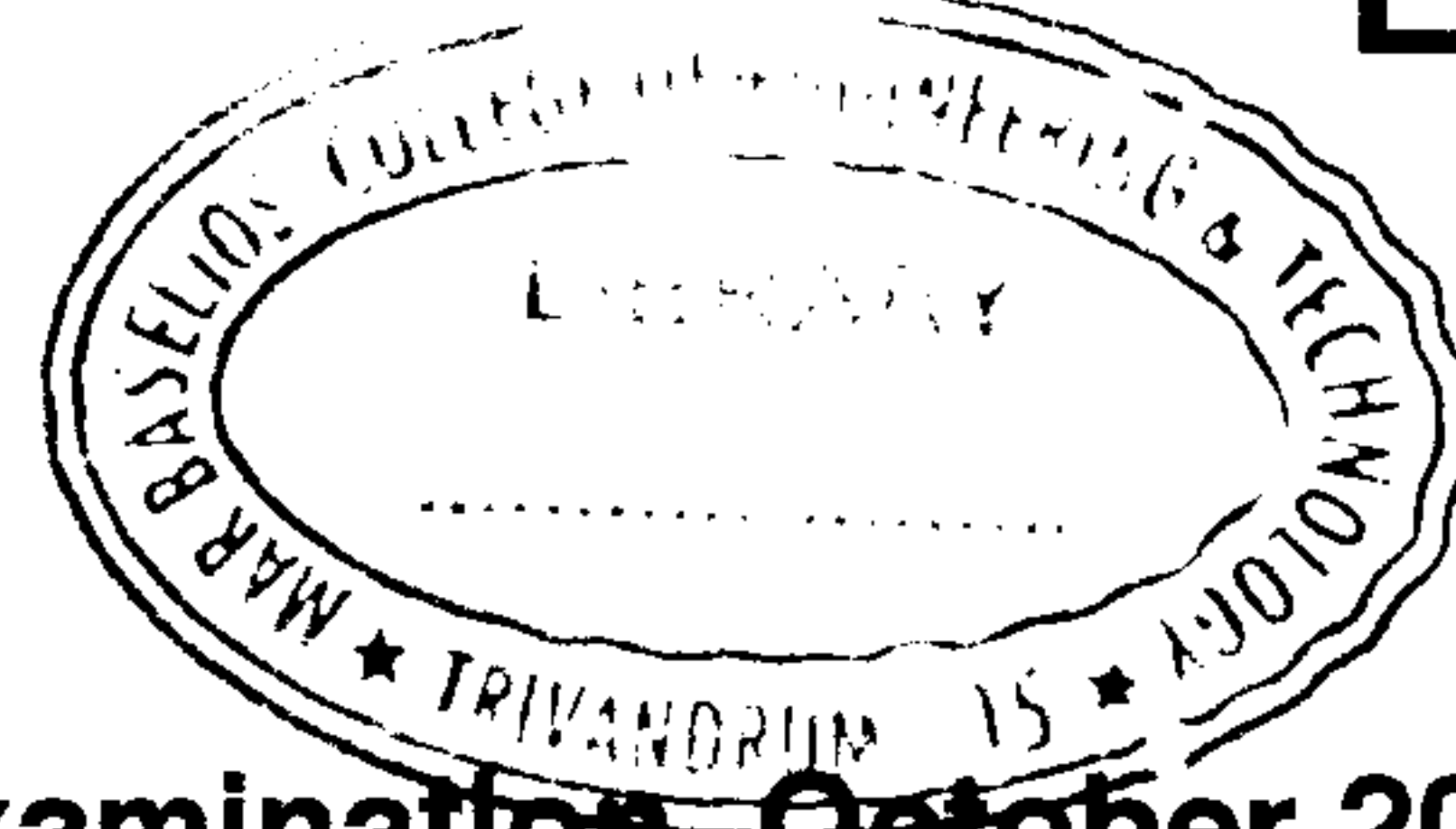




Reg. No. :

Name :



**Eighth Semester B.Tech. Degree Examination, October 2018
(2008 Scheme)**

08.801 : MOBILE COMPUTING (F)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions. **Each** question carries **4** marks.

1. What is fading in mobile environment ? What problems does this create for a wireless network.
2. What factors influence the choice of digital modulation technique ?
3. What do you understand by co-channel interference and adjacent channel interference ?
4. What are the benefits of IMT-2000 over 2G systems ?
5. What are the advantages of Iridium satellite system ?
6. State the functions of MAC management layer of IEEE 802.11.
7. Differentiate piconet and scatternet in Bluetooth technology.
8. Specify how Internet can be accessed using Digital Video Broadcasting.
9. Why is timeout freezing required in case of mobile nodes ? What are the modifications made in data link layer and transport layer to enforce timeout freezing ?
10. What is WAP 2.0 ? State how it is different from WAP 1.0 ?

P.T.O.



PART – B

Answer **any one** question from **each** Module :

Module – I

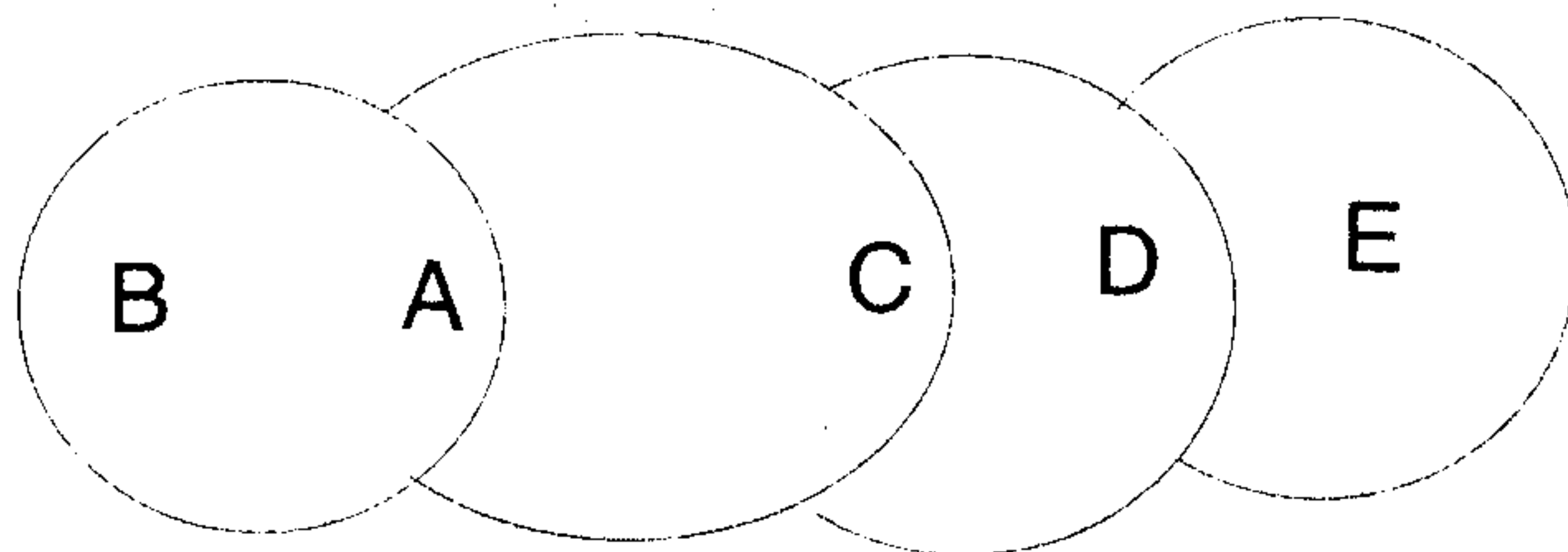
11. a) How does frequency reuse enhance cellular network capacity ? Besides the number of users, what other major factor influences the decision on cluster size ? A cellular system uses frequency spectrum 1800 MHz to 1840 MHz for uplink channels and 1860 MHz to 1900 MHz for downlink channels respectively. Each channel takes 200 KHz and can be shared by 8 users. Each user needs one uplink and one downlink channel. How many users can be supported without frequency reuse in this cellular system ? **10**
- b) What is the use of spread spectrum ? Sketch the block diagram of the Transmitter and Receiver of DSSS. Explain what each block does and what the signal looks like (in time and/or frequency domains) at each location in the block diagram with an example. **10**

OR

12. a) How can higher data rates be achieved in standard GSM ? Explain the architecture used to achieve higher data rates, the main elements and describe their functions. What are the advantages of specifying not only the radio interface but also the internal interfaces of the system ? **10**
- b) Explain the term interference in the space, time, frequency and code domain. What are the countermeasures in SDMA, TDMA, FDMA and CDMA systems ? **10**

Module – II

13. a) Using IEEE 802.11 (DCF) : Wireless stations A and D send CBR/UDP traffic to the common destination C. Consider A, D and C are all within receiving range of each other when the basic scheme is used. Describe a collision (what happens before, during and after). What does the collision probability depend on ? When RTS/CTS are used : What are the changes to the previous answers ? Comment also on the throughput and fairness. When and what information (if any) is learnt about the medium by the other stations ? (Hint : Illustrate through a diagram with time as the X-axis). **10**





b) Explain the different phases of MAC layer in HIPERLAN . 10

OR

14. a) What is DAB ? Explain the components, frame format and the protocol used by DAB to access different formats of data. 10

b) Describe the base band layer of Bluetooth with the state diagram depicting the working of Bluetooth ? 10

Module – III

15. a) Specify the enhancements made to the basic client server architecture of the web to suit a mobile wireless user ? Explain the layer of WAP protocol used to achieve the following : A client wants to have a shared state with the server for transferring the content. 10

b) Suppose a mobile user visits foreign networks A, B and C and that a correspondent begins a connection to the mobile user when it is resident in foreign network A. List the sequence of messages between foreign agents, and between foreign agents and the home agent as the mobile user moves from network A to network B to network C. Next, suppose chaining is not performed and the correspondent (as well as the home agent) must be explicitly notified of the changes in the mobile user's Care-of-address. List the sequence of messages that would need to be in these second scenarios. 10

OR

16. a) A client needs to access a file from a remote server, how many TCP connections are established between the client and the server while the client is downloading the file from the server. Describe the process of data transfer between the client and the server. 10

b) Illustrate the use of dynamic host configuration protocol in a network with an example. 10

