53 (CS 712) MOCO

2017

MOBILE COMPUTING

Paper : CS 712

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1. *(a)* Briefly answer the following questions : 2×5=10

   (i) What do you mean by center excited cell and edge excited cell ?

   (ii) Why do uplink and downlink in GSM are seperated by three time slots ?

   (iii) Write the difference between co-channel interference and adjacent channel interference.

(iv) What do you mean by horizontal handoff and vertical handoff ?

(v) What is the need for agent advertisements ?

(b) Write the relationships among frame, multiframe, superframe and hyperframe. 4

(c) Suppose the SNR is required to be greater than 18 *dB*, what will be the minimum reuse factor ? Assume, path loss exponent = 4. 6

2. (a) Discuss the advantages and disadvantages of cellular system. 6

(b) Explain in brief : MSISDN, TMSI, MSRN. Write the steps of a mobile terminated call with a neat diagram. 3+7=10

(c) Evaluate the final data rate of TCH/F. 4

3. Draw the functional architecture of a GSM system and explain the entities in different subsystems. 20

4. *(a)* Write the difference between proactive and reactive protocols in MANET. Explain DSR with a suitable example. 3+7=10

(b) What do you mean by correlation of a signature sequence ? Explain the basic scheme of a CDMA system. 3+7=10

5. *(a)* Write the security services offered by GSM. Explain the subscriber authentication process. 3+7=10

(b) Describe indirect TCP. Mention its advantages. 8+2=10

6. *(a)* Why mobile IP is needed ? Explain the requirements that accompanied the development of mobile IP standard. 2+6=8

(b) What do you mean by tunneling and encapsulation ? Explain IP packet delivery to and from a mobile node. 4+6=10

(c) Define mobility binding. 2

7. Write short notes on the following : ***(any four)*** 5×4=20

(i) Mobile database system

(ii) Database hoarding

(iii) Handover

(iv) Limitations of wireless networking

(v) Wireless Application Protocol

(vi) GSM TDMA frame structure

(vii) Selective tuning (indexing) techniques.
