GURU NANAK INSTITUTE OF TECHNOLOGY
An Autonomous Institute under MAKAUT
2022
MOBILE COMMUNICATION
IT704C

TIME ALLOTTED: 3 HOURS **FULL MARKS: 70**

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable

GROUP – A
(Multiple Choice Type Questions)

Answer any *ten* from the following, choosing the correct alternative of each question: **10×1=10**

		Marks	CO No.
1. i.	Which of the following does not come under the teleservices of GSM? a. Standard mobile telephony b. Mobile originated traffic c. Packet switched traffic d. Base originated traffic	1	CO3
ii.	State the data rate or speed offered by a GPRS connection? a. 56-115 kbps b. 9-256kbps c. 64-128 kbps d. None of these	1	CO1
iii.	Mobility binding table in mobile IP is maintained by a. Mobile Node b. Home agent c. Foreign agent d. All of these	1	CO3
iv.	In DSR a route error (RERR) packet is sent in which of the following a. Route Discovery b. Route Maintenance c. Both (A) and (B) d. None of these	1	CO4
v.	2G standards support a. Limited internet browsing b. Short Messaging Service c. Both (A) and (B) d. None of these	1	CO3

vi. Which one of the following is abbreviated as EDGE? 1 CO1
   a. Enhanced Digital Generation Gap
   b. Enhanced Data rate for GSM Evolution
   c. Encryption Data rate for GSM Evolution
   d. None of these

vii. What should be the bandwidth of Bluetooth device 1 CO1
   a. 4.2 GHz
   b. 3.2 GHz
   c. 2.4 GHz
   d. 2.3 GHz

viii. In multicast routing, each involved router needs to construct a _____ path tree for each group. 1 CO2
   a. Average
   b. Longest
   c. Shortest
   d. None of these

ix. What is the length of the shortest possible PDCCH in bits? 1 CO4
   a. 144
   b. 288
   c. 122
   d. 72

x. Which one of the following has no backward compatibility with 3G CDMA2000. 1 CO3
   a. IS-95
   b. GPRS
   c. IS-95A
   d. IS-95B

xi. To develop MIDP, the maximum length of a record store name will be_____. 1 CO4
   a. 8 characters
   b. 32 characters
   c. 128 characters
   d. 256 characters

xii. Type-B Mobile station supports _____ 1 CO2
   a. Speech only
   b. GPRS only
   c. GPRS or Speech one at a time
   d. GPRS and Speech simultaneously

GROUP – B
(Short Answer Type Questions)
(Answer any *three* of the following) **3 x 5 = 15**

		Marks	CO No.
2.	What are the different kinds of GPRS?	5	CO1
3.	Explain Bluetooth architecture Protocol.	5	CO4

		Marks	CO No.
4. a)	How I-TCP does differ from traditional TCP?	2	CO2
b)	What are the advantages and disadvantages of I-TCP?	3	CO3
5. a)	What are the differences between soft handoff and hard handoff?	2	CO1
b)	Describe briefly Features of Cellular Systems.	3	CO2
6. a)	Design block diagram of the WLL architecture.	3	CO4
b)	Define mobile IP with example.	2	CO4

GROUP – C
(Long Answer Type Questions)

Answer any *three* from the following: **3×15=45**

		Marks	CO No.
7. a)	Briefly describe congestion control, slow start and fast retransmit mechanism.	6	CO1
b)	Discuss IEEE802.11 System Architecture.	9	CO2
8. a)	Discuss about Mobile IP packet Delivery System with suitable diagram.	10	CO3
b)	Prove that for hexagonal geometry the co-channel reuse ratio is given by $Q=\sqrt{(3N)}$, where $N=i^2+ij+j^2$.	5	CO4
9. a)	Evaluate Quality of services in 3G.	5	CO3
b)	Write short notes on Tunneling & Encapsulation.	5	CO3
c)	What is HIPERLAN? What are the four different versions of HIPERLAN?	5	CO4
10.a)	Briefly explain the protocol stack of WAP.	4	CO3
b)	What is satellite network? What do you mean by MANET?	5	CO1
c)	Evaluate Quality of Services of 4G.	6	CO4
11.a)	Explain Optimization Techniques in case of mobile IP packet delivery system.	10	CO3
b)	Explain Co-channel and Adjacent Interference.	5	CO2