Scheme – I

Sample Question Paper

Program Name: Electronics Engineering Programme Group
Program Code: EJ/ET/EN/EX/EQ
Semester: Fifth
Course Title: Mobile and Wireless Communication
Marks: 70

Time: 3 Hour

Instructions:

(1) All questions are compulsory.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data if necessary.
(5) Preferably, write the answers in sequential order.

Q.1) Attempt any FIVE of the following: 10 Marks

(a) State two features of N-AMPS
(b) Define cluster. Draw the diagram of a7 cell cluster
(c) Explain the term frequency reuse
(d) State data rates of 3G and 4G technologies
(e) State the need for 4G technology
(f) State two features of Bluetooth technology
(g) State two applications of MANET

Q.2) Attempt any THREE of the following: 12 Marks

(a) State four features of CDMA 2000 radio standards
(b) Explain Handoff procedure with suitable diagram. State its types. Explain any one type
(c) Explain the step by step procedure of a mobile originated call
(d) CDMA 2000 is more advantageous than 3G GSM standards, Justify.

Q.3) Attempt any THREE of the following: 12 Marks

(a) Explain channel assignment strategies in a cellular system
(b) Draw the architecture of UMTS. State the function of various blocks.
(c) Draw the system architecture of WLAN and explain with suitable diagram.
(d) Fig. 1 is block diagram of a security framework of UMTS. Identify the blocks A and B. Explain their functions.

Fig 1.

Q.4) Attempt any THREE of the following. 12 Marks
(a) Compare IS-95 and GSM standards on the basis of
   i) Multiple Access technique used.
   ii) Handoff
   iii) Handset interoperability
   iv) Coverage area
(b) State the vision of IMT 2000 global standards
(c) Explain Authentication process by using Cipher key generation in GSM.
(d) It is desired to make a database of the students in a college present at any particular day. Explain the approach to maintain and check a database for students of the college with RFID technology.
(e) Explain the services and performance of Signaling System 7.

Q.5) Attempt any TWO of the following. 12 Marks
(a) Draw the block diagram of a mobile phone unit and state the function of each block.
(b) Suggest the method to minimize adjacent channel interference, improve signal to interference ratio and improve the system capacity. Explain the suggested method with diagram.
Q.6) Attempt any TWO of the following.  

a) Compare fixed wireless networks and mobile wireless networks on the basis of
   i) Portability
   ii) Latency
   iii) Type of connection
   iv) Speed
   v) Type of base stations
   vi) Application

b) Illustrate significance of six characteristics of IMT 2000.

c) Explain the different types of MANETs.
Instructions:

(1) All questions are compulsory.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data if necessary.
(5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR. 08 Marks

(a) Sketch the block diagram of paging system.
(b) List Different types of Handoff in Cellular System
(c) Define Co-Channel and Adjustment Channel Interference
(d) "Frequency Reuse Helps in increasing the Channel capacity" Justify.
(e) Sketch the block diagram of Wireless Local Loop system

Q.2 Attempt any THREE. 12 Marks

(a) Explain with the help of block diagram, Working of Mobile Transmitter Unit.
(b) Design a Cellular network with cluster size 7 (Using Frequency Reuse Method).
(c) Explain with the help of block diagram, function of GSM architecture.
(d) Justify ‘Microcell zone concept used to increase Channel Coverage and capacity’
Scheme – I

Sample Test Paper - II

Program Name : Electronics Engineering Programme Group
Program Code  : EJ/ET/EN/EX/EQ
Semester      : Fifth
Course Title  : Mobile and Wireless Communication
Marks         : 20

Time: 1 Hour

Instructions:
(1) All questions are compulsory.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data if necessary.
(5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR. 08 Marks
(a) List any four Services Provided by GSM.
(b) Specify any four Radio Aspects of IS-95 System.
(c) Draw the WLAN system architecture.
(d) Explain the function of MTP (Message Transfer Part) in Signaling System 7 (SS7).
(e) Explain the need of 3G and 4G Technology.

Q.2 Attempt any THREE. 12 Marks
(a) Compare GSM and IS-95 system (any 4 points)
(b) Explain with the help of diagram, the topologies used in Mobile Ad-Hoc Network (MANET).
(c) Explain the features of 4G Technology.
(d) Explain 3G W-CDMA technology with its four Specifications.