

Time: 3 Hours

DECEMBER 2014

Max. Marks: 100

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

- Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.
- The answer sheet for the Q.1 will be collected by the invigilator after 45 minutes of the commencement of the examination.
- Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.
- Any required data not explicitly given, may be suitably assumed and stated.

Q.1 Choose the correct or the best alternative in the following: (2×10)

- a. A Small division of a given geographical area is Known as
- | | |
|-----------|--------------|
| (A) Shell | (B) Cell |
| (C) Core | (D) Division |
- b. IEEE has defined the specifications for a wireless LAN, called _____, which covers the physical and data link layers.
- | | |
|-----------------|----------------|
| (A) IEEE 802.3 | (B) IEEE 802.5 |
| (C) IEEE 802.11 | (D) IEEE 802.2 |
- c. Which of these is/are Digital Cellular technology/Technologies
- | | |
|---------------------|-----------------|
| (A) IS: 54 / IS-136 | (B) GSM |
| (C) IS-95 | (D) all of them |
- d. The core concept used in Cellular technology is
- | | |
|----------------|---------------------|
| (A) TDM | (B) Frequency Reuse |
| (C) Code reuse | (D) Doppler shift |
- e. In a LAN network every system is identified by
- | | |
|----------------|-------------------|
| (A) Name | (B) MAC address |
| (C) IP Address | (D) Serial number |
- f. CDMA uses the idea of tolerating interference by
- | | |
|----------------------------|---------------------------------------|
| (A) intelligent modulation | (B) Spread spectrum modulation |
| (C) manchester coding | (D) Bipolar non return to zero coding |

Code: DE66

Subject: WIRELESS & MOBILE COMMUNICATIONS

g. What is the uplink and down link frequency of GSM?

- (A) Up link 935-960 MHz and Down link 890-915 MHz
 (B) Up link 900-950 MHz and Down link 850-890 MHz
 (C) Up link 600-660 MHz and Down Link 550-590 MHz
 (D) Up link 650-710 MHz and Down Link 540-590 MHz

h. FDMA is used mainly for _____ transmission

- (A) digital (B) analog
 (C) both analog and digital (D) none of these

i. MAC is the abbreviation for

- (A) Multimedia access control (B) Media access control
 (C) Mobile access control (D) Master access point control

j. IEEE802.11 the wireless LAN uses

- (A) CSMA/CA (B) CSMA/CD
 (C) Both (A) and (B) (D) None of these

**Answer any FIVE Questions out of EIGHT Questions.
 Each question carries 16 marks.**

- Q.2** a. What do you mean by ad hoc networks? Explain MANET in detail. (8)
 b. Explain the concept of cellular communication with neat diagram. (8)
- Q.3** a. Explain the working of Turbo code encoder and decoder with the help of block diagrams. (8)
 b. What is intersymbol interference (ISI)? Does it affect the transmission rate of a digital channel? Explain clearly. (8)
- Q.4** a. How do you characterize traffic load of a cell? Derive expressions for them. (8)
 b. Explain in detail, slotted ALOHA protocol and how it improves throughput as compared to pure ALOHA protocol. (8)
- Q.5** a. Explain frequency shift key (FSK) and phase shift key (PSK) with suitable waveform. (6)
 b. What do you mean by dynamic channel allocation (DCA)? Explain distributed and centralised dynamic channel allocation (DCA). (10)

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- Q.6** a. Discuss the 'handoff' strategies employed in the design of a mobile communication system. (8)
- b. Draw the satellite system architecture and explain the process of call setup. (8)
- Q.7** a. Explain Interfaces, Planes and Layer of GSM in a cellular network. (10)
- b. Enlist the various types of operations supported by IS-41. (6)
- Q.8** a. Discuss the important and innovative applications of MANET's. (8)
- b. With the help of example, explain TORA. (8)
- Q.9** Write short notes on: (8×2)
- (i) WLAN (wireless local area network)
- (ii) Switched Beam and Adaptive Beam