

- Q.28 Define channel Capacity. Why is it so important.  
(CO3)
- Q.29 What is the difference between antenna diversity and MIMO?  
(CO4)
- Q.30 How does OFDMA works?  
(CO5)
- Q.31 Mention disadvantages of MIMO.  
(CO4)
- Q.32 List main features of LTE  
(CO5)
- Q.33 What is difference between GSM technology and CDMA technology.  
(CO6)
- Q.34 What is CDMA. Explain its structure with block diagram.  
(CO5)
- Q.35 Enlist few differences between 1G/2G/3G  
(CO2)

#### SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 What are basic components of cellular system. Explain each in details.  
(CO2)
- Q.37 What does LTE mean? Explain its complete Architecture with Block diagram.  
(CO5)
- Q.38 What are different types of fading. Explain each one in details.  
(CO3)

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### 3rd Sem / Mechtronics

### Subject:- Mobile & Wireless Communication

Time : 3Hrs.

M.M. : 100

#### SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 What is frequency reuse? (CO1)
- Process of selecting and allocating channels
  - Process of selection of mobile users
  - Process of selecting frequency of mobile equipment
  - Process of selection of number of cells
- Q.2 What is a cell in cellular system? (CO2)
- A group of cells
  - A group of subscribers
  - A small geographical area
  - A large group of mobile systems
- Q.3 For a cellular system, if there are N cells and each cell is allocated k channel. What is the total number of available radio channels, S? (CO2)
- $S=K*N$
  - $S=k/N$
  - $S=N/k$
  - $S=k^N$
- Q.4 Propagation model that characterize rapid fluctuation is called \_\_\_\_\_ (CO3)
- Hata model
  - Fading model
  - Large scale propagation model
  - Okumura model

- Q.5 The performance of BPSK is best in terms of BER because \_\_\_\_\_. (CO3)
- Symbol offset interference does not exist
  - Existence of cross rail interference
  - No multipath delay
  - Doppler spread
- Q.6 Small scale fading Occurs due to \_\_\_\_\_. (CO3)
- Doppler Shift
  - Time Delay
  - Doppler Shift and Time Delay
  - None of the mentioned
- Q.7 Which of the following is not a category of space diversity technique? (CO3)
- Selection diversity
  - Time diversity
  - Feedback diversity
  - Equal gain diversity
- Q.8 Which of the following technology does not use MIMO? (CO4)
- 4G
  - Wifi
  - WiMax
  - AMPS
- Q.9 ITU Stands for \_\_\_\_\_. (CO6)
- International Television Union
  - Internal Telecommunication Union
  - Inventions for Telecommunication Union
  - International Telecommunications Union
- Q.10 Which of the following is used by IS-95? (CO5)
- DSSS
  - FHSS
  - THSS
  - Hybrid

## SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 Define Space Diversity. (CO3)
- Q.12 CDMA2000 technology is a \_\_\_\_\_ network. (CO5)
- Q.13 Define Multipath fading. (CO3)
- Q.14 Define Noise Figure. (CO3)
- Q.15 MIMO stands for \_\_\_\_\_. (CO4)
- Q.16 OFDMA stands for \_\_\_\_\_. (CO5)
- Q.17 Large cells are called as \_\_\_\_\_ cells and small cells are called as \_\_\_\_\_. (CO1)
- Q.18 What is Co-channel Interference? (CO1)
- Q.19 What is the access technique used by LTE? (CO5)
- Q.20 On what factors Channel Capacity depends? (CO3)

## SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Define Cell and its salient features. (CO1)
- Q.22 What are advantages and applications of Wireless Communication System. (CO6)
- Q.23 What is the purpose of link budget? (CO3)
- Q.24 Explain adjacent channel Interference. (CO3)
- Q.25 What is the difference between noise figure and noise power? (CO3)
- Q.26 Explain MIMO System in Wireless Communication (CO4)
- Q.27 What causes Multipath fading? (CO3)