

- Q.23 What are main features of 4G.  
 Q.24 Define free space path loss.  
 Q.25 Explain about noise figure  
 Q.26 Define fading margin.  
 Q.27 Explain about beam forming.  
 Q.28 Explain about capacity planning.  
 Q.29 Define antenna diversity.  
 Q.30 Describe the role of MIMO system.  
 Q.31 Give the function of HLR.  
 Q.32 What is function of BSC.  
 Q.33 Describe the power control mechanism for reducing interference.  
 Q.34 Describe features of CDMA  
 Q.35 Give comparison between 3G and 4G

#### **SECTION-D**

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Describe about LTE, its features and Architecture in detail.  
 Q.37 Explain in detail about OFDMA and its features.  
 Q.38 Describe about cellular capacity and frequency reuse concept in detail.

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202431

**4th Sem / Branch : Mechatronics**  
**Subject:- Mobile and Wireless Communication**

Time : 3Hrs.

M.M. : 100

#### **SECTION-A**

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

- Q.1 ITU stands for \_\_\_\_\_  
 a) International Television Union  
 b) Internal Telecommunication Union  
 c) Inventions for Telecommunication Union  
 d) International Telecommunication Union
- Q.2 What is the Access technique used by an LTE or LTE-A network:  
 a) WCDMA                      b) FDMA  
 c) PDMA                        d) OFDMA
- Q.3 The advantage of using frequency reuse is :  
 a) Increased capacity  
 b) Limited spectrum is required  
 c) Same spectrum may be allocated to other network  
 d) All of the above

- Q.4 Radio capacity may be increased in cellular concept by:  
a) Increase in radio spectrum  
b) Increasing the number of base stations and reusing the channels  
c) Both a & b  
d) None of the above
- Q.5 Commonly used mode for 3G networks is:  
a) TDMA                  b) FDMA  
c) TDD                  d) FDD
- Q.6 2G standards support:  
a) Limited internet browsing  
b) Short messaging service  
c) Both a & b  
d) None of the above
- Q.7 Which of the following is not a channel parameter:  
a) Coherence time      b) RMS delay spread  
c) Doppler spread      d) Bandwidth
- Q.8 Which of the following is not an effect caused by multipath in radio channel:  
a) Random frequency modulation  
b) Time dispersion  
c) Rapid changes in signal strength  
d) Power of base station

- Q.9 MIMO is a smart antenna technology  
a) False                  b) True
- Q.10 Large scale fading can be mitigated with the help of:  
a) Modulation  
b) Demodulation  
c) Macroscopic diversity technique  
d) Microscopic diversity technique

### SECTION-B

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

- Q.11 Explain the term Handoff.  
Q.12 Give functions of BTS.  
Q.13 Give full form of SIM  
Q.14 Define Roaming.  
Q.15 Define Noise Figure  
Q.16 CDMA stands for \_\_\_\_\_  
Q.17 GSM stands for \_\_\_\_\_  
Q.18 OFDM stands for \_\_\_\_\_  
Q.19 Define Fading margin.  
Q.20 Define Splitting

### SECTION-C

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

- Q.21 Define Mobile radio propagation.  
Q.22 Explain Co-channel interference.