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**6th Sem / Branch : Eltx**

**Subject:- Wireless and Mobile Communication/Digital  
and Data Communication Engg.**

Time : 3Hrs.

M.M. : 100

**SECTION-A**

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

- Q.1 The 2G GSM technology uses a carrier separation of  
a) 1.25 MHz                      b) 200 KHz  
c) 30 KHz                        d) 300 KHz
- Q.2 Commonly used mode for 3G network is  
a) TDMA                        b) FDMA  
c) TDD                         d) FDD
- Q.3 Radio capacity may be increased in cellular concept by  
a) increase in radio spectrum  
b) increasing the number of base stations & reusing the channels  
c) both a & b  
d) none of the above
- Q.4 Hexagon shape is used for radio coverage for a cell because  
a) it uses the maximum area for coverage  
b) fewer number of cells are required  
c) it approximates circular radiation pattern  
d) all of the above

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Q.5 In handoff

- a) process of transferring the call to the new base station takes place  
b) transfers the call  
c) new channel allocation is done  
d) all of the above

Q.6 Flat fading is a type of

- a) multipath delay spread small scale fading  
b) Doppler spread small scale fading  
c) both a & b  
d) none of the above

Q.7 Advantage of using Dynamic channel assignment is

- a) blocking is reduced  
b) capacity of the system is increased  
c) both a & b  
d) none of the above

Q.8 The techniques used to improve the capacity of cellular systems are

- a) splitting  
b) sectoring  
c) coverage zone approach  
d) all of the above

Q.9 GSM is an example of

- a) TDMA cellular systems  
b) FDMA cellular systems  
c) CDMA cellular systems  
d) SDMA cellular systems

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- Q.10 MIN stands for
- mobile identification number
  - mobile internet
  - mobility in network
  - none of the above

### SECTION-B

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

- Q.11 There are two types of fading ..... and .....
- Q.12 Tropospheric reflection occurs in ..... region of the atmosphere.
- Q.13 Small cells are called as ..... cells.
- Q.14 D/R ratio in cellular system is called as .....
- Q.15 TDD stands for .....
- Q.16 Define multiple access.
- Q.17 Bluetooth is a ..... wireless technology.
- Q.18 Define cell area.
- Q.19 Which message is displayed if VCO is faulty?
- Q.20 What happens if RTC is faulty?

### SECTION-C

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

- Q.21 List the tools required to disassemble a mobile phone.
- Q.22 Write a short note on hot testing method of mobile phone.

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- Q.23 List any five features of LTE.
- Q.24 Write a short note on uses of Wi-Fi system.
- Q.25 List any five applications of Bluetooth.
- Q.26 Write any five features of GPRS.
- Q.27 Write the functions of HLR and VLR.
- Q.28 Write a short note on electromagnetic waves.
- Q.29 Calculate the wavelength corresponding to 300 GHz frequency.
- Q.30 Define dedicated short range and long range communications.
- Q.31 Write a short note on open loop power control.
- Q.32 Derive an expression for channel capacity of a cellular system.
- Q.33 Write the full form of CRS, BTR and UW related to TDMA.
- Q.34 Write a short note on multipath effect.
- Q.35 Write the full form of IMEI, TMSI, PSTN, ISDN and SIM.

### SECTION-D

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

- Q.36 Explain 5+5  
(a) Rayleigh fading and (b) Frequency re-use
- Q.37 List different multiple access techniques and compare them in a tabular form. 4+6
- Q.38 Compare CDMA and GSM techniques in detail.

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