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Roll No. ....

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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.  $(10 \times 1 = 10)$

- 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.  $(12 \times 5 = 60)$

- 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, IMSI, PSTN, ISDN and SIM.

### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions.  $(2 \times 10 = 20)$

- 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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