Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **14EC2038** | **Duration :** | **3hrs** |
| **Sub. Name :** | **CELLULAR MOBILE COMMUNICATION** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Point-out the various impacts on the signal propagating in a mobile communication system. | CO1 | 5 |
| b. | Name the modulation techniques used in GSM and Wireless LAN (IEEE 802.11). Bring out in detail the significant features of these modulation techniques. | CO1 | 15 |
| (OR) | | | | |
| 2. | a. | If a transmitter produces 100W of power, express the transmit power in units of dBm and dBW. | CO1 | 5 |
| b. | Mention the multiple access technique which is used in GSM and WCDMA. With proper explanation, bring out its advantages and disadvantages. | CO1 | 15 |
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| 3. | a. | Find the optimum wavelength and frequency for a half-wave dipole of length 20metres. | CO1 | 5 |
| b. | Generate ASK, FSK, PSK and MSK signal for the data.  [0 1 0 1 1 0 0]. Also, state the advantages of these modulation techniques. (Assume the required number of carrier signals). | CO1 | 15 |
| (OR) | | | | |
| 4. | a. | Define Cell in mobile communication.Bring out the advantages of using small cells. | CO1 | 5 |
| b. | Compare and contrast the different multiple access schemes. | CO1 | 15 |
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| 5. | a. | How are locations of co-channel cells determined in a cellular system? Use pictorial representation. | CO2 | 5 |
| b. | Sketch neatly and explain the GSM architecture and its different radio interfaces. | CO2 | 15 |
| (OR) | | | | |
| 6. | a. | List the different services offered by GSM. | CO2 | 5 |
| b. | Illustrate the cellular frequency reuse concept with necessary diagrams. | CO2 | 15 |
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| 7. | a. | Bring out the important facts of GEO, LEO and MEO satellites. | CO2 | 5 |
| b. | Neatly sketch and brief a satellite system used for global mobile communication. | CO2 | 15 |
| (OR) | | | | |
| 8. |  | Explain the frame structure and sender components of Digital Audio Broadcasting (DAB) with necessary diagrams. | CO2 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Illustrate the functioning of Dynamic Source Routing (DSR) in Mobile Adhoc Network. | CO3 | 20 |