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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2016**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **14EC2038** | **Duration :** | **3hrs** |
| **Sub. Name :** | **CELLULAR MOBILE COMMUNICATION** | **Max. marks :** | **100** |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Compare and contrast the features ofSDMA, TDMA, FDMA and CDMA mechanisms. | CO1 | 16 |
| b. | What are the factors influencing the signal propagation in wireless medium? | CO1 | 04 |
| (OR) | | | | |
| 2. | a. | Explain in detail the different techniques used to improve coverage & capacity of cellular systems. | CO1 | 16 |
| b. | What is hidden and exposed terminal problem? How are collisions avoided during wireless transmission? | CO1 | 04 |
| 3. | a. | What is the need for frequency reuse? Explain the frequency reuse concept and show that N=i2+ij+j2  where N is the number of cells per cluster. | CO1 | 14 |
|  | b. | Discuss in detail about future trends of Cellular & Wireless systems. | CO1 | 06 |
| (OR) | | | | |
| 4. | a. | What are the consequences of choosing the cluster of (i) a large cell reuse cluster pattern and (ii) small cell reuse cluster pattern on the following parameters:  (a) Spectrum Utilization Efficieny,  (b) Carrier to Interference Ratio,  (c) No. of calls per cell,  (d) No. of channels available per cell. | CO1 | 14 |
|  | b. | What are the types of Handoff’s encountered in mobile communication? | CO1 | 06 |
| 5. | a. | Explain the GSM system architecture and give its protocol specifications. | CO2 | 16 |
|  | b. | Draw and Explain the following GSM Radio Interfaces:   * Mobile Station (MS) to Base transceiver Interface (BTS), * BTS to BSC, * BSC to MSC, and * Interfaces between other MS Entities. | CO2 | 04 |
| (OR) | | | | |
| 6. | a. | Discuss the features of GEO, LEO and MEO satellites. | CO2 | 16 |
|  | b. | What are the types of logical channels present in GSM ? | CO2 | 04 |
| 7. | a. | Explain the DAB transport mechanisms and give its channel and frame format specification. | CO2 | 16 |
|  | b. | Discuss about the DAB transmitter with neat block diagram. | CO2 | 04 |
| (OR) | | | | |
| 8. | a. | Explain the user plane and control plane protocol layers of WATM. | CO3 | 16 |
|  | b. | Describe the reference models of WATM with further access scenarios. | CO3 | 04 |
| **Compulsory:** | | |  |  |
| 9. | a. | Discuss, in detail the dynamic source routing and dynamic host configuration protocol. | CO3 | 16 |
|  | b. | What are the motivations for Mobile IP? | CO3 | 04 |

ALL THE BEST