**University of Mumbai**

Program: Computer Engineering

Curriculum Scheme: Rev2016

Examination: BE Semester VII

Course Code: CSC702 and Course Name: Mobile Communication and Computing

Time: 2 hour 30 minutes Max. Marks: 80

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| Q1. | Choose the correct option for following questions. All the Questions are compulsory and carry equal marks |
| 1. | LTE Mac layer responsible for |
| Option A: | re-segmentation of RLC data PDUs |
| Option B: | Mapping between logical channels and transport channels, Multiplexing of MAC SDUs |
| Option C: | Carries all information from the MAC transport channels over the air interface |
| Option D: | Re-segmentation and carries all information |
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| 2. | Which of the following handover type is supported by FDD mode in UMTS? |
| Option A: | Hard Handover |
| Option B: | Soft handover |
| Option C: | Soft or Hard Handover |
| Option D: | Soft and Hard Handover |
| | |
| 3 | Co-Channel Interference can be avoided using |
| Option A: | TDMA technique |
| Option B: | Guard Spaces |
| Option C: | FDMA technique |
| Option D: | Multipath propagation |
| | |
| 4 | In DSSS systems take a user bit stream of (four bit) 0101 and perform an XOR with a chipping sequence of (seven bits) 0110101. How many bits will be there in resulting signal? |
| Option A: | 28 |
| Option B: | 07 |
| Option C: | 04 |
| Option D: | 14 |
| | |
| 5. | In IEEE 802.11 MAC packet structure the first 2 bytes are used for _____. |
| Option A: | Frame control |
| Option B: | Sequence control |
| Option C: | Checksum (CRC) |
| Option D: | Protocol version |
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| 6 | The TMSI number is used to hide_____ number. |
| Option A: | IMSI |
| Option B: | MSRN |
| Option C: | MSISDN |

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| Option D: | IMEI |
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| 7. | The behavior of TCP shows after the detection of congestion is called as _____ . |
| Option A: | Fast retransmit |
| Option B: | Selective transmission |
| Option C: | Slow start |
| Option D: | Error Control |
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| 8 | The _____is the problem in reverse tunneling |
| Option A: | Handover |
| Option B: | Foreign Agent |
| Option C: | Firewall |
| Option D: | Routing |
| | |
| 9 | In HIPERLAN-2, Each access point contains _____ and _____ |
| Option A: | Access point controller, Access point Transceiver |
| Option B: | Access point radio , Access point sector |
| Option C: | Access point EC , Access point CL |
| Option D: | Access point CM , Access point DM |
| | |
| 10. | Each ____ is a base station that controls the mobiles in one or more cells. |
| Option A: | eND |
| Option B: | eNB |
| Option C: | eMB |
| Option D: | eNS |

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| Q2.<br>(20 Marks) | Solve any Four out of Six 5 marks each |
| A | What is Modulation? Explain ASK, PSK techniques in detail |
| B | Explain the GPRS components which are used in UMTS core network architecture. |
| C | Discuss the different interframe spacing between transmission of frame in IEEE 802.11. |
| D | Draw a high level architecture of LTE. Explain in short, the functions of EPC component. |
| E | What are the different types of Handovers supported by GSM? Explain in short. |
| F | Differentiate between Bluetooth and IEEE 802.11a protocol |

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| Q3.<br>(20 Marks) | Solve any Two Questions out of Three 10 marks each |
| A | What is Hidden terminal and Exposed terminal problem? How it is solved with MACA? |
| B | What do you mean by Self Organizing Networks? Explain SOIN Architecture. |

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| C | Explain How Power Management is done in Infrastructure based and Adhoc Network |

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| Q4.<br>(20 Marks ) | |
| A | Solve any Two Questions out of Three 5 marks each |
| i. | Explain Agent advertisement and Discovery. |
| ii. | Draw and explain entities in Bluetooth protocol stack. |
| iii. | What are the functions of LTE MAC layer? |
| B | Solve any One Question out of Two. 10 marks each |
| i. | What is the need of micro mobility? |
| ii. | Explain How Power Management is done in Infrastructure based and Adhoc Network |