Faculty of Engineering

End Sem (Even) Examination May-2019

CS2EL04 Wireless Communication

Programme: Diploma   Branch/Specialisation: CSE

Duration: 3 Hrs.   **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i. The time over which a call can be maintained within a cell without handoff is called _____   **1**
(a) Run time   (b) Peak time   (c) Dwell time   (d) Cell time

ii. Co-channel interference is a function of _____   **1**
(a) Radius of cell   (b) Transmitted power
(c) Received power   (d) Frequency of mobile user

iii. Which of the following techniques do not help in expanding the capacity of cellular system?   **1**
(a) Sectoring   (b) Scattering
(c) Splitting   (d) Microcell zone concept

iv. TDMA Preamble contains _____   **1**
(a) Address   (b) Data   (c) Guard bits   (d) Trail bits

v. Which of the following does not come under subsystem of GSM architecture?   **1**
(a) BSS   (b) NSS   (c) OSS   (d) Channel

vi. _____ supports the operation and maintenance of GSM.   **1**
(a) BSS   (b) NSS   (c) OSS   (d) MSC

vii. Constant envelope modulation techniques occupy _____ bandwidth than linear modulation schemes.   **1**
(a) Larger   (b) Smaller   (c) Same   (d) Twice

viii. What is the modulation index of MSK?   **1**
(a) 0.1   (b) 1   (c) 0.5   (d) 0

P.T.O.

ix. WiMAX uses the   **1**
(a) Orthogonal frequency division multiplexing
(b) Time division multiplexing
(c) Space division multiplexing
(d) All of these

x. An interconnected collection of piconet in Bluetooth system is called   **1**
(a) Scatternet   (b) Micronet   (c) Mininet   (d) None of these

Q.2 i. Define Adjacent channel interference.   **2**
ii. Define the frequency reuse concept.   **3**
iii. Explain channel assignment strategies in detail.   **5**
OR   iv. Explain the various types of Handoff processes available.   **5**

Q.3 i. Define cell splitting.   **2**
ii. Explain in detail the TDMA & FDMA multiple access techniques.   **8**
OR   iii. Explain in detail the features of a common channel signalling network, its types, advantages and disadvantages.   **8**

Q.4 i. Explain MSC and its registers in GSM.   **3**
ii. Briefly explain GSM system architecture and its functional blocks.   **7**
OR   iii. Explain in details GSM Channels.   **7**

Q.5 i. Define QPSK.   **4**
ii. Explain in detail the generation & detection of MSK technique.   **6**
OR   iii. Explain in detail the generation & detection of GMSK modulation?   **6**

Q.6   Write a short note on any two:
i. Bluetooth.   **5**
ii. Zig bee.   **5**
iii. Wi-max.   **5**

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Marking Scheme
CS2EL04 Wireless Communication

Q.1　i.　The time over which a call can be maintained within a cell without handoff is called _____　**1**
(c) Dwell time

ii.　Co-channel interference is a function of _____　**1**
(a) Radius of cell

iii.　Which of the following techniques do not help in expanding the capacity of cellular system?　**1**
(b) Scattering

iv.　TDMA Preamble contains _____　**1**
(a) Address

v.　Which of the following does not come under subsystem of GSM architecture?　**1**
(d) Channel

vi.　_____ supports the operation and maintenance of GSM.　**1**
(c) OSS

vii.　Constant envelope modulation techniques occupy _____ bandwidth than linear modulation schemes.　**1**
(a) Larger

viii.　What is the modulation index of MSK?　**1**
(c) 0.5

ix.　WiMAX uses the　**1**
(a) Orthogonal frequency division multiplexing

x.　An interconnected collection of piconet in Bluetooth system is called　**1**
(a) Scatternet

Q.2　i.　Adjacent channel interference.　**2**
　　　At least 3 points

ii.　Frequency reuse concept.　**3**
Definition　　　　　　　1 mark
Description　　　　　　2 marks

iii.　Channel assignment strategies　**5**

OR　iv.　Handoff processes　1 mark　**5**
Various types of Handoff　4 marks

Q.3　i.　Cell splitting.　**2**

ii.　TDMA multiple access techniques　4 marks　**8**
FDMA multiple access techniques　4 marks

OR　iii.　Features of a common channel signalling　1 mark　**8**
Its types　3 marks
Advantages　2 marks
Disadvantages.　2 marks

Q.4　i.　MSC　1 mark　**3**
Its registers in GSM.　2 marks

ii.　GSM system description　2 marks　**7**
GSM system architecture　3 marks
Its functional blocks.　2 marks

OR　iii.　GSM description　2 marks　**7**
Channels description　5 marks

Q.5　i.　Description of QPSK.　2 marks　**4**
Diagram　2 marks

ii.　Generation of MSK technique　3 marks　**6**
Detection of MSK technique　3 marks

OR　iii.　GMSK modulation　**6**
Generation　3 marks
Detection　3 marks

Q.6　　　Write a short note on any two:
i.　Bluetooth.　**5**
ii.　Zig bee.　**5**
iii.　Wi-max.　**5**

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