B. TECH.
(SEM-II) THEORY EXAMINATION 2017-18
MOBILE COMPUTING

Time: 3 Hours   *Total Marks: 100*

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1.   **Attempt *all* questions in brief.**   **2 x 10 = 20**

    a.   Explain the word Mobile Computing.
    b.   Define Wireless Telephony System.
    c.   Define Hand Off.
    d.   Explain HLR & VLR.
    e.   What is Mobile IP?
    f.   Differentiate between CDMA & GSM.
    g.   What are two kinds of cell spiliting?
    h.   What is MIMO radio channel?
    i.   What is SIMO radio channel?
    j.   What are Adhoc networks?
         Explain Cellular system.

SECTION B

2.   **Attempt any *three* of the following:**   **10 x 3 = 30**

    a.   Describe the process of Handoff in GSM system.
    b.   Explain the different propagation mechanism in mobile communication system.How its affects communication system performance?
    c.   Write briefly about the types of fading and its effect on communication system performance. Explain techniques to overcome phenomena of fading.
    d.   What are the basic elements of a basic cellular system? Describe the functionality of each system.
    e.   How does diversity combining techniques improve mobile communication?

SECTION C

3.   **Attempt any *one* part of the following:**   **10 x 1 = 10**

    (a) Describe the methods for increasing the coverage are for a noise limited system. What is a Hole and what methods are used to fill these holes?
    (b) Write short note on (i) Cell sectoring and its purpose (ii) Leaky Feeder radio communication.

4.   **Attempt any *one* part of the following:**   **10 x 1 = 10**

    (a) Explain the detail protocol architecture of GSM. Explain the formulas of Dropped Call Rate.
    (b) Explain the following (i) Limitation of Conventional Mobile System (ii) Frequency Hopping (iii) Mobile to mobile propagation

5. **Attempt any *one* part of the following:**   **10 x 1 = 10**

    (a)   List three significant factors which influence the choice of speech coders in mobile communication system?

    (b)   Define the following terms (i) SS7 (ii)Mobile Agent (iii) CDMA (iv) Mobile management

6. **Attempt any *one* part of the following:**   **10 x 1 = 10**

    (a)   What do you mean by perception of Call blocking from the subscriber? Discuss various frequency spectrum utilization techniques..

    (b)   Differentiate between MIMO and SIMO radio channels (ii) Ground Path and Ground Reflected Path.

7. **Attempt any *one* part of the following:**   **10 x 1 = 10**

    (a)   Explain the channel coding and interleaving in GSM. Also differentiate between CDMA & GSM.

    (b)   Write Short Notes on (i) Foliage Loss (ii) Wireless Mobile ATM (iii) Dropped Call