Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (Electrical & Electronics)/(Electronics & Electrical) (Sem.–7)

# WIRELESS COMMUNICATION

Subject Code : BTEEE-804F

M.Code : 71968

Time : 3 Hrs. Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

## SECTION-A

**Write briefly :**

1. Calculate channel capacity of TDMA in cell system.
2. What is called shadowing?
3. What are the limitations of 1G cellular network?
4. Write the drawback of Bit-Error-rate-Driven diversity.
5. Compare the capacity of a fading and a non-fading channel for information.
6. What are the main transmission technologies for WLAN?
7. Discuss the fundamental concepts of all-IP networks.
8. What is the frequency of separation between uplink and downlink in AMPS and GSM?
9. List the benefits of cellular-WLAN integration architecture.
10. Draw the forward link structure in IS-95 CDMA.

## SECTION-B

11. Explain briefly the following terms used in telephony :

    a) Busy hour calling rate

    b) Unit call

12. How does multipath fading is mitigated with the design of base station antennas? Explain.

13. Write short notes on support of mobility on the Internet.

14. A group of N stations share 100 Kbps slotted ALOHA channel. Each station output a 500 bits frame on an average of 5000ms even if previous one has not been sent. What is the required value of N?

15. Describe the functions of the MS and SIM. Why does GSM separate the MS and SIM?

## SECTION-C

16. What signalling facilities are to be provided by subscriber's instrument in an automatic telephone exchange? Explain in detail. Also show how this is achieved by a schematic diagram?

17. What is difference between multiplexing and multiple access techniques? Are FDM and TDM similar to corresponding FDMA/TDMA respectively? If not, why? Explain the relative advantages and disadvantages of FDM A and TDMA.

18. Draw the IEEE 802.11 protocol architecture, name the main elements and describe their functions. Why is the PHY layer in IEEE 802.11 subdivided?



**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**