

Total No. of Questions : 4]

SEAT No. :

**PB-296**

[Total No. of Pages : 2

**[6270]-85**

**B.E. (E & TC) (Insem)**

**MOBILE COMPUTING**

**(2019 Pattern) (Semester - VIII) (404191 (E)) (Elective - V)**

*Time : 1 Hour]*

*[Max. Marks : 30*

*Instructions to the candidates:*

- 1) *Answer Q.1 or Q.2, Q.3 or Q.4.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right side indicate full marks.*
- 4) *Use of Calculator is allowed.*
- 5) *Assume suitable data if necessary.*

- Q1)** a) What do you mean by spread spectrum? List its types and explain any one with neat block diagram. [5]
- b) Define Mobile Computing. List the applications of mobile computing. [5]
- c) Explain the terms hidden terminal and exposed terminal. [5]

OR

- Q2)** a) Explain classical Aloha and slotted Aloha with a neat sketch. [5]
- b) Compare FDMA, TDMA and CDMA. [5]
- c) Consider a slow FHSS system with m-ary FSK with number of bits per symbol = 2, two symbol per hop and PN sequence generated output with binary message of 011011011000. The message is transmitted using following PN sequence with  $K=3$  {001 110 101 000 101}. Plot output of the system. [5]

**P.T.O.**

- Q3)** a) List the features of 5G and compare 1G, 2G, 3G, 4G and 5G. [5]
- b) Draw and explain GPRS architecture. [5]
- c) Explain connection establishment steps of Mobile Originated Call (MOC) in GSM. [5]

OR

- Q4)** a) Explain different algorithms used to make GSM secure. Draw a neat diagram and elaborate it. [5]
- b) Draw and explain 5G network architecture. [5]
- c) Draw and explain the GSM frame structure. [5]

