

Total No. of Questions : 8]

SEAT No. :

PA-2638

[Total No. of Pages : 2

[5927]-401

**B.E. (Information Technology)**

**WIRELESS COMMUNICATIONS**

**(2019 Pattern) (Semester - VII) (Elective - IV) (414445D)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right side indicate full marks.
- 4) Assume Suitable data if necessary.

**Q1) a)** Explain the Principal of TDMA. What are different features of TDMA? [9]

b) How Code Division Multiple Access Technique is implanted while accessing a channel for multiple users? Support your theory with example. [9]

OR

**Q2) a)** What is MIMO? Explain two formats of MIMO. [9]

b) What is OFDM technique? Also, explain OFDMA transmitter and receiver. [9]

**Q3) a)** What are the different challenges in WAP? Also, write down the advantages and disadvantages of WAP. [9]

b) What is LoRaWAN? Elaborate LoRaWAN network elements. [8]

OR

**Q4) a)** What is Wi-Fi Direct? What are the different types of Wi-Fi Direct? [9]

b) What is NFC? What are the different characteristics of NFC? [8]

**P.T.O.**

**Q5) a)** What is security? What are the different security issues in 1G, 2G, 3G, and 4G? [9]

b) Explain in details Visible Light Communication. Also, explain its applications. [9]

OR

**Q6) a)** Explain security issues and challenges in GSM. [9]

b) What is multimedia security? Explain multimedia security in 5G and 6G. [9]

**Q7) a)** Explain how 5G network works along-with its benefits. [9]

b) Enlist and explain application of Holographic MIMO surface. [8]

OR

**Q8) a)** What is quantum Technology? Explain quantum Technology for a 5G/6G wireless network? [9]

b) Explain Simultaneous Transmission and Reflection (STAR) for 360° coverage in details. [8]

