

(3 Hours)

[Total Marks - 80]

N.B i) Question no.1 is compulsory

ii) Solve any **three** from the remaining **five** questions

- |   |   |    |
|---|---|----|
| 1 | a.Explain the 'Zone planning' concept for the Indoor radio planning.  | 5  |
|   | b. What is the pole capacity of the cell ?  | 5  |
|   | c. Discuss the Advanced Antenna systems used in HSPA and LTE.   | 5  |
|   | d. With a suitable example explain category 1 and category 2 of sensor network  | 5  |
| 2 | a. ] 'CDMA is interference limited system'.Justify and explain the need for power control.  | 10 |
|   | b. Give the detailed radio access network overview. Explain in detail functions of Node B and RNC also draw UTRAN logical architecture. | 10 |
| 3 | a. Explain Bluetooth security features and security levels with proper diagram  | 10 |
|   | b. Elaborate on Zigbee components , topologies and protocol stack.  | 10 |
| 4 | a. Explain the relevance of CSMA/CA technique in WLAN and the concept of Hidden Node and Exposed Node.                                  | 10 |
|   | b. There are various resource constraints in the design and implementation of WSN . Justify.  | 10 |
| 5 | a. How does a typical RFID system work ? Discuss its components and list its applications.  | 10 |
|   | b. Why TCP and UDP protocols are unsuitable for implementation in WSN.  | 10 |
| 6 | Write notes on [any two]  | 20 |
|   | a. Middleware architecture of WSN   |    |
|   | b. UWB technology   |    |
|   | c. Routing challenges in WSN  |    |