Duration-3hrs   Marks -80

N.B i) Question no.**1** is compulsory

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

1a	Discuss the Advanced Antenna systems used in HSPA and LTE.	5
b	Draw and explain with a neat diagram the various components of a sensor node.	5
C	What are the different Network Topologies supported by Zigbee?	5
d	Explain the 'Zone planning' concept for the Indoor radio planning.	5
2a	What are the different requirements to plan a good Link Budget for Wireless Networks?	10
b	Explain 'hidden node' and 'exposed node' problems in WLANs.	10
3a	What is UMTS? List important features of UMTS air interface.	10
b	Explain various Bluetooth connection establishment states .Draw a complete flow diagram.	10
4a	Explain Middleware architecture for WSNs.	10
b	Discuss Wimax in detail and compare its performance with Wifi .	10
5a	Discuss the various routing challenges and design issues in WSNs.	10
b	Why Network Management Design is a critical issue in WSN? Justify.	10
6a	What are the different types of handovers in GSM?	10
b	How does a typical RFID system work ? Discuss its components and list its applications.	10

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