(3 Hrs)   **Total Marks: 80**

N. B.   1. Question No 1 is compulsory.
        2. Solve any three from remaining.

Q 1   Answer any four :   20
- (a) What is the need for Wireless Sensor network? Explain the WSN Protocol stack.
- (b) Explain the need for DWDM. Compare it with WDM.
- (c) "AAL 5 is a widely used ATM adaptation layer protocol": justify with
     (i) Mention the main functions of AAL
     (ii) Name practical Examples that use services of AAL5.
- (d) Draw and explain different states of Bluetooth enabled device.
- (e) What are the different network security threats and safeguards? Explain.

Q 2   (a) Draw and explain Bluetooth protocol stack in detail.   10
      (b) Compare Ubiquitous and hierarchical access in Access Network design. Explain the steps   10
           for completing access layer design in detail.

Q 3   (a) In frame relay frame format, which bit is used to avoid network congestion? Draw and   10
           explain frame format of Frame relay.
      (b) Bring out the advantages of Optical networking. With a neat sketch, explain the SONET   10
           hardware components along with its functional layers.

Q 4   (a) What is a firewall? What are the capabilities and limitations of firewall? Discuss the   10
           different types of firewalls, along with their advantages and disadvantages.
      (b) With reference to ATM :   10
           (i) Explain ATM Protocol architecture, bringing out the functions of ATM layer.
           (ii) Compare the following ATM Adaptation Layer Protocols : AAL1, AAL2, AAL3/4,
              AAL5.

Q 5   (a) Draw and explain (i) IEEE 802.15.3 LR-WPAN Device architecture.   10
                               (ii) ZigBee technology
      (b) Write short notes on : (i) B-ISDN model of ATM   (ii) UWB   10

Q6   Write a short note on :. (Any four)   20
- (a) DMZ.
- (b) SNMP
- (c) RFID.
- (d) RMON.
- (e) VOFR

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