21415

3 Hours / 100 Marks   Seat No.

Instructions : (1) All Questions are *compulsory*.

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Use of Non-Programmable Electronic Pocket Calculator is permissible.

(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. (A) Attempt any SIX of the following :   **12**

(a) State any two advantages of FDM.

(b) Compare guided media and unguided media. (any two points)

(c) List different types of satellites.

(d) What is SMDS ?

(e) What is Repeater ? Give its use.

(f) List the classes of IP address.

(g) List different types of network connecting devices.

(h) What is Encapsulation ?

(B) Attempt any TWO of the following :   **8**

(a) Describe characteristics of data communication systems.

(b) Describe following :

(i)   Wi-Fi

(ii) Wi-MAX

(c) Explain the relation between TCP and IP.

P.T.O.

2.   Attempt any FOUR of the following :   **16**

    (a)   List and describe various communication modes.

    (b)   State the meaning of :

        (i)   Amplitude

        (ii)   Frequency

        (iii) Bandwidth

        (iv)   Bauds

    (c)   Draw a neat diagram of circuit switching and explain in brief.

    (d)   What is multiplexing ? Give its types.

    (e)   What is WAN addressing ? Give its use.

    (f)   Explain DQDB (Distributed Queue Dual Bus).

3.   Attempt any FOUR of the following :   **16**

    (a)   What is star topology ? Give its advantages over other topologies.

    (b)   Describe cable modem with neat diagram.

    (c)   Explain Hand-off operation in mobile phone.

    (d)   Explain ICMP protocol.

    (e)   Describe the application of IEEE standard.

    (f)   Explain the function of Bridges and Repeaters in Internet.

4.   Attempt any FOUR of the following :   **16**

    (a)   Compare fast Ethernet and Gigabit Ethernet (4 points only)

    (b)   Draw and explain synchronous transmission mode.

    (c)   Explain the FDDI system.

    (d)   Explain WAN architecture with neat diagram.

    (e)   Describe the working of ARP & RARP.

    (f)   Define standards. List various standard organisations.

5. **Attempt any FOUR of the following :** 16

    (a) What is DNS server ? Describe concept of DNS.

    (b) Describe the following :

        (i) Routers

        (ii) Gateways

    (c) Explain Data Fragmentation and Reassembly.

    (d) Explain the architecture of Bluetooth.

    (e) What is LAN ? List its advantages.

    (f) Compare TCP and UDP (4 points only)

6. **Attempt any FOUR of the following :** 16

    (a) Draw architecture of ISP and explain.

    (b) Describe dial-up network with its specifications.

    (c) Name error detection methods. Describe CRC with example.

    (d) Explain the concept of Asynchronous TDM.

    (e) State the need for Internet. What are the problems with internetworking ?

    (f) Draw OSI reference model. Describe working of any two layers.

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