2021
COMPUTER SCIENCE
[GENERAL]
Paper : IV
Group–A

Full Marks : 60 Time : 3 Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer the following (any **six**): 1×6=6

   a) Name the different classes of Classful IP addressing scheme.

   b) Which OSI layer is responsible for encryption/ decryption, encoding and decoding of data?

   c) What is DNS? Give an example of a Domain name know to you?

   d) What is the use of Bridge in LAN?

   e) What is the significance of modulation and demodulation in digital data communication?

   f) Name the different topologies used in LAN.

   g) Give the formula of S/N ratio?

   h) What is the full form of TCP/IP and ISO-OSI?

   i) What is the default subnet of Class C?

2. Answer in short (any **seven**): 2×7=14

   a) Explain FSK modulation.

   b) Differentiate between ARP and RARP.

   c) What are browsers? Give names of any two browsers.

   d) What is bit rate and baud rate?

   e) What are the basic functions of routers?

   f) What are the different types of cabling supported by Ethernet standard?

   g) What are guided and unguided media? Give two examples of each.

   h) Explain the Session Layer of ISO-OSI model.

   i) Define the term VPI with respect to ATM.

3. Explain the following (any **six**): 5×6=30

   i) Calculate the Shannon channel capacity for Bandwidth =20Khz and SNR_{db}=40

   ii) Explain TDMA and FDMA.

   iii) Ten signals, each requiring 4000Hz, are

multiplexed on to a single channel using FDM. How much minimum bandwidth is required for the multiplexed channel? Assume that guard bands are 400 Hz wide.

iv) Briefly explain X.25 standard. Where is it applied?

v) List any five line coding techniques and represent the sequence 10110011 using the techniques.

vi) Explain data link layer functions.

vii) Explain the Transport layer of TCP/IP protocol.

4. Write short notes on (any **one**): 10×1=10

i) TCP/IP protocol

ii) What is routing and congestion? Give any one algorithm each for routing and congestion control in computer network.

iii) Principle and operation of Token ring topology.

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