

2020

COMPUTER SCIENCE — GENERAL

Paper : SEC-A-1

(Communication, Computer Network and Internet)

Full Marks : 80

The figures in the margin indicate full marks.

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

Answer **question nos. 1 & 2** and **any four** questions from the rest.

1. Answer **any ten** questions :

2×10

- (a) What is gateway?
- (b) State the importance of OSI reference model.
- (c) Write the advantages of co-axial communication media over twisted pair.
- (d) Mention the functionality of firewall.
- (e) Write the differences between Intranet and Internet.
- (f) What is a Geostationary satellite?
- (g) What do you mean by throughput of a network?
- (h) Differentiate between Bridge and Router.
- (i) Name the different components of URL.
- (j) What is the maximum bit rate of a noiseless channel having bandwidth of 5000 Hz and transmitting a signal with four signal levels?
- (k) State the responsibilities of Transport layer.
- (l) Write the difference between FDM and WDM.
- (m) Mention the main problem of NRZ encoding.
- (n) State the advantages of using Optical fibre.
- (o) Write two applications of SMTP.

2. Write short notes on **any four** :

5×4

- (a) WAN
- (b) Star topology
- (c) Physical layer of OSI model

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- (d) MODEM
 - (e) TDM
 - (f) E-mail.
3. (a) Compare radiowave and microwave.
- (b) What is noise? Discuss different types of noise that can affect signal transmission. 5+(2+3)
4. (a) What is latency?
- (b) Distinguish between a low pass channel and a band pass channel.
- (c) How do guided media differ from unguided media?
- (d) Mention some applications of infrared communication. 2+3+2+3
5. (a) Explain the steps of Pulse Code Modulation (PCM).
- (b) State the difference between LAN and WAN.
- (c) Write down the properties of ASK. 5+2+3
6. (a) Compare and Contrast between PCM and DM.
- (b) Discuss briefly about ISP (Internet Service Provider).
- (c) Explain the concept of VSAT. 4+4+2
7. (a) Describe the structure of twisted pair cable with proper diagram.
- (b) Why is https now preferred over http?
- (c) Write the functionalities of ASDL modem. 5+2+3
8. (a) Explain about token ring.
- (b) Discuss about voice and video conferencing. 5+5
9. (a) Why do we need a DNS system when we can directly use an IP address? What is the difference between a primary server and a secondary server?
- (b) In electronic mail, what is MIME? Why do we need POP3 and IMAP4 for electronic mail?
(3+3)+(2+2)
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