

2018

COMPUTER SCIENCE — GENERAL

Fourth Paper

(Group – A)

Full Marks – 50

The figures in the margin indicate full marks

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

SET – 3

Answer *Question No.1* and *any five* questions from the rest

1. Answer *any five* questions : 2×5
 - (a) What is modulation?
 - (b) Write the Shannon's formula for data transfer rate.
 - (c) Differentiate between a periodic signal and an aperiodic signal.
 - (d) What is a geosynchronous satellite?
 - (e) Define channel capacity.
 - (f) What is an URL?
 - (g) Explain iterative mapping for address resolution of DNS.
 - (h) Why is MIME needed for emails?

2.
 - (a) Discuss the structure and transmission characteristics of co-axial cable and fiber optic cable.
 - (b) What are the major advantages of using fiber optic cable for communication?
 - (c) What is the frequency range used for microwave signal communication? (3+2)+2+1

3. Briefly discuss the jobs of the physical layer and data link layer of OSI model of networking. 4+4

4.
 - (a) What are the advantages of digital transmission over analog transmission?
 - (b) Define ASK, FSK and PSK. 2+(2×3)

5.
 - (a) What is multiplexing?
 - (b) Describe briefly on FDM and TDM. 2+6

[Turn Over]

6. (a) Why is routing needed? 3+5
(b) Write any routing algorithm of your choice.
7. (a) Why is Firewall needed? 2+6
(b) Discuss about any encryption and any decryption technique.
8. (a) Mention the factors on which the effective bandwidth of a medium depends. 4+4
(b) Discuss the open loop and closed loop congestion control in a network in brief.
9. Write short notes on *any two* of the following : 4×2
(a) VSAT
(b) Token ring topology
(c) Email
(d) Network security.