

**SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2019**

(CUCBCSS)

Computer Science

BCS 6B 14—COMPUTER NETWORKS

Time : Three Hours

Maximum : 80 Marks

I. Answer *all* questions. Each question carries 1 mark :

- 1 The data link layer takes the packets from network layer and encapsulates them into \_\_\_\_\_ for transmission.
- 2 CRC stands for \_\_\_\_\_.
- 3 An interconnected collection of piconets are called \_\_\_\_\_.
- 4 \_\_\_\_\_ are specialized forums in which user with a common interest can exchange messages.
- 5 \_\_\_\_\_ layer in OSI model is responsible for the syntax and semantics of the information transmitted.
- 6 \_\_\_\_\_ is the set of techniques that allows the simultaneous transmission of multiple signals across a single data link.
- 7 If the physical links are limited to a pair of nodes it is said to be \_\_\_\_\_.
- 8 The part of e-mail system which is responsible for manipulating mailboxes is called \_\_\_\_\_.
- 9 \_\_\_\_\_ routing algorithm uses Hello packets to learn about the neighbours.
- 10 End to end connectivity is provided from host to host in \_\_\_\_\_ layer.

(10 × 1 = 10 marks)

II. Answer *all* questions. Each question carries 2 marks :

- 11 What are the criteria necessary for an effective and efficient network ?
- 12 What are the key design issues of a computer Network ?
- 13 What are the responsibilities of Data Link Layer ?
- 14 Differentiate gateway and router.
- 15 What do you mean by Character stuffing ?

(5 × 2 = 10 marks)

**Turn over**

III. Answer any *five* questions. Each question carries 4 marks :

- 16 Differentiate CSMA/CD and CSMA/CA.
- 17 Explain the network hardware in detail.
- 18 Define blocking in a switched network.
- 19 How is a repeater different from an amplifier ?
- 20 Explain Dijkstra's algorithm.
- 21 Discuss the concept of redundancy in error detection and correction.
- 22 What is the difference between network layer delivery and transport layer delivery ?
- 23 What do you mean by remote logging ?

(5 × 4 = 20 marks)

IV. Answer any *five* questions. Each question carries 8 marks :

- 24 Explain the different transmission mediums used in networks.
- 25 Discuss open loop and closed loop congestion control.
- 26 Explain the various random access protocols in detail.
- 27 Explain different error control mechanisms used in networks.
- 28 Discuss different random access methods in detail.
- 29 Discuss the architecture and services of electronic mail.
- 30 Explain Cryptography and its categories in detail.
- 31 Explain the following protocols :
  - a) UDP b) TCP c) SCTP.

(5 × 8 = 40 marks)