

**2020****B.C.A.****[HONOURS]****(Data Communication and Computer Network)****Paper : BCA-204**

Full Marks : 80

Time : 4 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.*Answer **Q. No.1** and any **four** from the rest.

1. Answer any **eight** questions:  $2 \times 8 = 16$
- Write the purpose of networking.
  - What is bit rate?
  - What do you mean by throughput of a transmission media?
  - Write the difference between simplex and half duplex.
  - What is piggy backing?
  - State Nyquist theorem.
  - What is channel encoding?

- Give one example of bit-oriented protocol and one example of byte oriented protocol.
  - Write two disadvantages of Satellite Communication.
  - Define message switching.
  - Represent 110101 by both the Manchester Encoding Schemes.
  - Write the difference between Amplitude modulation and frequency modulation.
2. a) Write down the function of datalink and physical layer.
- What is distortion and attenuation?
  - Write two each advantage and disadvantage of transmission through air.
  - Describe the structure of a optical fiber.
- 4+4+4+4
3. a) Explain the concept of Service Access Point, Entity, and Protocol Data unit in content of OSI Model.
- Given a bandwidth of 5000 Hz for an 8-PSK signal, what are the band rate and bit rate?
  - Write the demerits of OSI protocol.
  - Discuss radiowave communication.
- 6+4+3+3

4. a) Write two advantages and disadvantages of packet switching.
- b) How many bits does the field-sequence number, acknowledgement no., HLEN and urgent pointer contain in a TCP header format? Describe the function of the above mentioned fields.
- c) Write the advantages and disadvantages of using CSMA technique.
- d) Discuss about ALOHA and pure ALOHA scheme.  $4+4+4+4$
5. a) Write the differences between connection less and connection oriented service.
- b) What do you mean by the Bit Interval and Bit rate in a digital signal?
- c) Discuss FDDI (fiber distributed data interface).
- d) What do you mean by bridge?  $8+3+3+2$
6. a) Describe the layers of X.25 protocol.
- b) Where does we use token-passing method? Describe the technique briefly.
- c) What is the difference between computer network and distributed system?  $8+6+2$

7. Write short notes on the following (any **four**):  $4 \times 4 = 16$
- a) Circuit switching
- b) TCP/IP vs OSI
- c) Multiplexing
- d) MAC protocol
- e) Ethernet LAN
- f) Internet Protocol
- g) Frame format of Token Bus