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**Reg. No. :** .....

**Code No. : 6081**

**Sub. Code : PCAM 53**

M.C.A. (CBCS) DEGREE EXAMINATION,  
NOVEMBER 2020.

Fifth Semester

Computer Applications – Core

DATA COMMUNICATION AND NETWORKS

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — ( $10 \times 1 = 10$  marks)

Answer ALL questions.

Choose the correct answer :

1. The structure of format of data is called \_\_\_\_\_
- |            |                |
|------------|----------------|
| (a) syntax | (b) semantics  |
| (c) struct | (d) formatting |

2. The \_\_\_\_\_ layer defines the characteristics of the interface between the devices and the transmission medium.
- (a) physical                      (b) data link  
(c) network                      (d) transport
3. Communication between a computer and a keyboard involves \_\_\_\_\_ transmission.
- (a) Automatic                      (b) Half duplex  
(c) Full duplex                      (d) Simplex
4. In a synchronous modem, the digital to analog converter sends a signal to the \_\_\_\_\_
- (a) transmission line                      (b) modulator  
(c) terminal                      (d) equalizer
5. The most frequently used UTP connector is \_\_\_\_\_
- (a) Category 5 connector  
(b) EIA 232  
(c) RJ 45  
(d) JR 45

6. Switched virtual circuit requires \_\_\_\_\_
- (a) connection establishment
  - (b) connection release
  - (c) control
  - (d) (a) and (b)
7. \_\_\_\_\_ is handling of lost or damaged frames.
- (a) Line discipline
  - (b) Flow control
  - (c) Error control
  - (d) All of the above
8. Another name for VRC is \_\_\_\_\_
- (a) LRC
  - (b) CRC
  - (c) Check sum
  - (d) Parity check
9. In IPv6 addresses, addresses that start with eight zeros are called \_\_\_\_\_
- (a) unicast addresses
  - (b) multicast addresses
  - (c) anycast addresses
  - (d) reserved addresses
10. ICMP has been designed to compensate \_\_\_\_\_
- (a) error reporting
  - (b) error correction
  - (c) host and management queries
  - (d) all the above

PART B — ( $5 \times 5 = 25$  marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What is meant by data communication and explain its characteristics.

Or

- (b) Explain the functions of network layer and datalink layer.

12. (a) Write about transmission impairment in data communication.

Or

- (b) What is transmission mode? Explain with its types.

13. (a) List out the usages of twisted pair cable.

Or

- (b) Why switching concept is required? Compare advantages and disadvantages of switching.

14. (a) Define error detection. What are the methods used to detect the error?

Or

- (b) What are the services provided by point-to-point protocol?

15. (a) What are the most common routing metrics are used in networking?

Or

- (b) Compare IPv4 and IPv6 addressing.

PART C — ( $5 \times 8 = 40$  marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Discuss about categories of networks.

Or

- (b) Draw neat diagram and explain the role of each layer in OSI model.

17. (a) What are the methods used to convert analog data into digital form?

Or

- (b) Compare baseband and broadband data transmission.

18. (a) Write about guided transmission medium.

Or

- (b) Discuss about structure of Switches used in each type of network.

19. (a) What are the techniques used to control the errors in datalink layer? Explain.

Or

- (b) Write about the types of LAN technologies.

20. (a) How to classify routing algorithms? Explain about non adaptive routing algorithm.

Or

- (b) Explain briefly about network addressing.
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