

**PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)**

**MCA DEGREE EXAMINATION MAY 2019  
(Second Semester)**

**Branch - COMPUTER APPLICATIONS**

**COMPUTER NETWORKS**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQU AL** marks (10 x 1 = 10)

- 1 In \_\_\_\_\_ mode, each station can both transmit and receive but not at the same time.
 

(i) Simplex	(ii) Full-duplex
(iii) Half duplex	(iv) Duplex
- 2 The \_\_\_\_\_ is used to associate a logical address with the physical address.
 

(i) ARP	(ii) RARP
(iii) ICMP	(iv) IGMP
- 3 For electrical signals, peak amplitude is normally measured in \_\_\_\_\_.
 

(i) Hertz	(ii) Volts
(iii) Seconds	(iv) Microseconds
- 4 \_\_\_\_\_ have frequency between 300 GHz to 400 THZ.
 

(i) Radio	(ii) Microwaves
(iii) Infrared waves	(iv) Satellite
- 5 \_\_\_\_\_ technique is used to improve the efficiency of bidirectional protocols.
 

(i) Piggybacking	(ii) Sliding window
(iii) Stop wait	(iv) Foot print
- 6 In an Ethernet network, slot time is calculated by \_\_\_\_\_.
 

(i) Slot time = round trip time + time required to send the jam sequence	(ii) Slot time = round trip time - time required to send the jam sequence
(iii) Slot time = max length / propagation speed	(iv) Slot time = max length * propagation speed
- 7 A \_\_\_\_\_ address is used during the transition from IPV4 to IPV6.
 

(i) Unspecified	(ii) Loop back
(iii) Compatible	(iv) Any cast
- 8 A \_\_\_\_\_ option is used as a filler between options of the IPV4 datagram header.
 

(i) End of option	(ii) No-operation
(iii) Record route	(iv) Timestamp
- 9 The combination of IP address & a port number is called a \_\_\_\_\_ address.
 

(i) MAC	(ii) Sub layer
(iii) Socket	(iv) Datagram
- 10 \_\_\_\_\_ is used for control connection by FTP.
 

(i) Port 22	(ii) Port 20
(iii) Port 19	(iv) Port 21

**Cont...**

**SECTION- B (25 Marks)**Answer **ALL** questions**ALL** questions carry **EQUAL** Marks (5 x 5 = 25)

11 a What is a network? Discuss the basic topologies of a network.

OR

b Discuss the organization of layers in the OSI model.

12 a Categorize the approaches used for the transmission of digital signal.

OR

b Mention the propagation modes in the fibre optic cable.

13 a Mention the process of error detection in block coding.

OR

b How does the bluetooth layers differ from the internet model layers? Explain.

14 a Discuss about NAT.

OR

b Brief the tools used by ICMP for debugging.

15 a Discuss the operations and uses of UDP.

OR

b Brief on message access protocols.

**SECTION -C (40 Marks)**Answer **ALL** questions**ALL** questions carry **EQUAL** Marks (5 x 8 = 40)***Question no. 16 is compulsory***

16 Two channels one with a bit rate of 100 kbps &amp; another with a bit rate of 200 kbps are multiplexed.

1. Explain how this can be achieved
2. Calculate the frame rate & duration
3. What is the bit rate of the link?

17 a Compare and contrast TCP / IP &amp; OSI reference model.

OR

b Elaborate on the multiplexing and demultiplexing process in FDM.

18 a Illustrate the CRC encoder &amp; decoder with an example.

OR

b Discuss the ATM layers and their functions.

19 a Explain how address depletion can be overcome using classless addressing? Give an example.

OR

b Elaborate on the operations of IGMP.

20 a Explain the connection oriented transmission of TCP.

OR

b Discuss the DNS in the internet.