

Total No. of Questions : 5]

SEAT No. :

PA-2555

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[5948]-105

M.C.A. - I (Management)

IT - 15 : NETWORK TECHNOLOGIES

(2020 Pattern) (Semester - I)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) All questions are compulsory.
- 2) All questions carry equal marks.
- 3) Draw neat diagrams wherever necessary.

Q1) Write the correct option.

- a) Frames from one LAN can be transmitted to another LAN via _____ device
 - i) Router
 - ii) Bridge
 - iii) Modem
 - iv) Repeater
- b) Segmentation and reassembly is done at _____ layer.
 - i) Network
 - ii) Data Link
 - iii) Transport
 - iv) Presentation
- c) Encryption and compression are done at sender's side by _____ layer.
 - i) Presentation
 - ii) Transport
 - iii) Network
 - iv) Session
- d) Error detection at the data link layer is achieved by _____
 - i) bit stuffing
 - ii) cyclic redundancy codes
 - iii) hamming codes
 - iv) equalization
- e) Which one of the following task is not done by data link layer?
 - i) framing
 - ii) error control
 - iii) flow control
 - iv) channel coding
- f) In cyclic Redundancy checking, what is CRC?
 - i) the divisor
 - ii) quotient
 - iii) dividend
 - iv) remainder





- g) Which error detection method uses complement arithmetic?
- i) Simple parity check
 - ii) Two dimensional parity check
 - iii) CRC
 - iv) Checksum
- h) Which error detection method consists of one redundant bit per data unit?
- i) Simple parity check
 - ii) Two dimensional parity check
 - iii) CRC
 - iv) Checksum
- i) The IPV4 addresses are _____.
- i) unique
 - ii) universal
 - iii) unique and universal
 - iv) common
- j) IPV6 addresses are represented using.
- i) decimal notation
 - ii) binary notation
 - iii) dotted-decimal notation
 - iv) hexadecimal notation
- k) The address space of IPV6.
- i) 8 bits
 - ii) 32 bits
 - iii) 64 bits
 - iv) 128 bits
- l) _____ protocol allows the administrator to assign a cost called the metric to each route.
- i) RIP
 - ii) OSPF
 - iii) BGP
 - iv) None of the mentioned
- m) In OSPF, each router that is connected to two or more areas is called _____.
- i) back bone router
 - ii) area border router
 - iii) internal router
 - iv) as boundary router
- n) DHCP provides _____ to the client.
- i) IP address
 - ii) MAC address
 - iii) URL
 - iv) None of the mentioned
- o) A DNS client is called _____.
- i) DNS updater
 - ii) DNS resolver
 - iii) DNS Handler
 - iv) None of the mentioned



- p) SMTP uses which of the following TCP port?
- i) 31
 - ii) 43
 - iii) 25
 - iv) 27
- q) Which of the following is not a form of DOS Attack?
- i) Vulnerability attack
 - ii) Bandwidth flooding
 - iii) Connection flooding
 - iv) Trojan Horse
- r) Which methods are commonly used in serversocket class?
- i) public outputstream getoutputstream
 - ii) public socket accept ()
 - iii) public synchronized void done ()
 - iv) public void connect ()
- s) The _____ class is used to create Datagram packet?
- i) Datagram packet
 - ii) Datagram socket
 - iii) Both of these
 - iv) None of the mentioned
- t) _____ is responsible for establishing a connection.
- i) Socket
 - ii) Serversocket
 - iii) Clientsocket
 - iv) None of the mentioned

Q2) a) Encode a binary word 11001 into the even parity hamming code
[Given number of data bits, $n = 5$] [5]

b) The received code word is 1100100101011, check if there is error in the code word if divisor is 10101. [5]

OR

a) A receiver received the hamming code 11001010101 with even parity. Find the error in received code. [5]

b) Generate the hamming code for the data 111011011 with odd parity. [5]

Q3) a) Determine the network address for the following IP-addresses [5]

i) 87.52.26.71

ii) 77.12.133.86

iii) 193.56.77.22

iv) 128.76.44.37

v) 100.77.44.13

b) Explain IP addressing with network masks and network addresses. [5]

OR

a) Draw and explain IPV4 packet format. [5]

b) Determine the network, subnetwork and host addresses if IP address is 27.54.19.33 and subnet mask is 255.255.224.0. [5]

Q4) a) Explain TCP protocol's working in detail. [5]

b) Explain DNS and DNS - resource records in detail. [5]

OR

a) What is open shortest path First protocol? Explain in detail. [5]

b) Explain the functioning of SMTP protocol. [5]

Q5) a) What are security attacks? Explain passive attacks in detail. [4]

b) WAP for establishing termination of connection between client and server using TCP. [6]

OR

a) Explain OSI model in detail. [4]

b) Write a program for implementing the sliding window protocol of window size 5. [6]

