

Roll No.-----

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(To be filled in the OMR Sheet)		

प्रश्नपुस्तिका क्रमांक  
Question Booklet No.

O.M.R. Serial No.

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प्रश्नपुस्तिका सीरीज  
Question Booklet Series

**A**

**B.C.A.(Fifth Semester) Examination, February/March-2022**

**BCA-503(N)**

**Computer Network**

**Time : 1:30 Hours**

**Maximum Marks-100**

जब तक कहा न जाय, इस प्रश्नपुस्तिका को न खोलें

- निर्देश : —
1. परीक्षार्थी अपने अनुक्रमांक, विषय एवं प्रश्नपुस्तिका की सीरीज का विवरण यथास्थान सही— सही भरे, अन्यथा मूल्यांकन में किसी भी प्रकार की विसंगति की दशा में उसकी जिम्मेदारी स्वयं परीक्षार्थी की होगी।
  2. इस प्रश्नपुस्तिका में 100 प्रश्न हैं, जिनमें से केवल 75 प्रश्नों के उत्तर परीक्षार्थियों द्वारा दिये जाने हैं। प्रत्येक प्रश्न के चार वैकल्पिक उत्तर प्रश्न के नीचे दिये गये हैं। इन चारों में से केवल एक ही उत्तर सही है। जिस उत्तर को आप सही या सबसे उचित समझते हैं, अपने उत्तर पत्रक (O.M.R. ANSWER SHEET) में उसके अक्षर वाले वृत्त को काले या नीले बाल प्वाइंट पेन से पूरा भर दें। यदि किसी परीक्षार्थी द्वारा निर्धारित प्रश्नों से अधिक प्रश्नों के उत्तर दिये जाते हैं तो उसके द्वारा हल किये गये प्रथमतः यथा निर्दिष्ट प्रश्नोत्तरों का ही मूल्यांकन किया जायेगा।
  3. प्रत्येक प्रश्न के अंक समान हैं। आप के जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
  4. सभी उत्तर केवल ओ०एम०आर० उत्तर पत्रक (O.M.R. ANSWER SHEET) पर ही दिये जाने हैं। उत्तर पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
  5. ओ०एम०आर० उत्तर पत्रक (O.M.R. ANSWER SHEET) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाय।
  6. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी प्रश्नपुस्तिका बुकलेट एवं ओ०एम०आर० शीट पृथक—पृथक उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें।
  7. निगेटिव मार्किंग नहीं है।

महत्वपूर्ण : — प्रश्नपुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्नपुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्ष निरीक्षक को दिखाकर उसी सीरीज की दूसरी प्रश्नपुस्तिका प्राप्त कर लें।

## **Rough Work / रफ कार्य**

1. Which type of topology is best suited for large businesses which must carefully control and coordinate the operation of distributed branch outlets?
  - (A) Ring
  - (B) Local area
  - (C) Hierarchical
  - (D) Star
2. Which of the following transmission directions listed is not a legitimate channel?
  - (A) Simplex
  - (B) Half Duplex
  - (C) Full Duplex
  - (D) Double Duplex
3. Which of these is a standard interface of serial data transmission?
  - (A) ASCII
  - (B) RS232C
  - (C) 2
  - (D) Centronics
4. “Parity bits” are used for which of the following purposes?
  - (A) Encryption of data
  - (B) To transmit faster
  - (C) To detect errors
  - (D) To identify the user
5. What kind of transmission medium is most appropriate to carry data in a computer network that is exposed to electrical interferences?
  - (A) Unshielded twisted pair
  - (B) Optical fiber
  - (C) Coaxial cable
  - (D) Microwave

6. A collection of hyperlinked documents on the internet forms the?
  - (A) World Wide Web (WWW)
  - (B) E-mail system
  - (C) Mailing list
  - (D) Hypertext markup language
7. The location of a resource on the internet is given by its?
  - (A) Protocol
  - (B) URL
  - (C) E-mail address
  - (D) ICQ
8. The term HTTP stands for?
  - (A) Hyper terminal tracing program
  - (B) Hypertext tracing protocol
  - (C) Hypertext transfer protocol
  - (D) Hypertext transfer program
9. Which software prevents the external access to a system?
  - (A) Firewall
  - (B) Gateway
  - (C) Router
  - (D) Virus checker
10. Which one of the following is the most common internet protocol?
  - (A) HTML
  - (B) NetBEUI
  - (C) TCP/IP
  - (D) IPX/SPX

11. The term FTP stands for?
  - (A) File transfer program
  - (B) File transmission protocol
  - (C) File transfer protocol
  - (D) File transfer protection
12. At what speed does tele-computed refer?
  - (A) Interface speed
  - (B) Cycles per second
  - (C) Baud rate
  - (D) Megabyte load
13. The two sublayers of a Data link layer are:
  - (A) LLC Logical Link Control Layer
  - (B) MAC Medium Access Control Layer
  - (C) Both (A) and (B)
  - (D) Data Layer
14. Which is the protocol that maps varying IP addresses to the Physical MAC Address of a machine in a LAN network?
  - (A) ARQ (Automatic Repeat Request)
  - (B) ARP (Address Resolution Protocol)
  - (C) SLIP (Serial Line Internet Protocol)
  - (D) PLIP (Parallel Line Internet Protocol)
15. The types of data services offered by an LLC (Logical Link Control) layer are:
  - (A) Connectionless which is fast and unreliable
  - (B) Connection Oriented which is slow and reliable
  - (C) Both (A) and (B)
  - (D) None

16. Choose the protocols working in the Data Link Control Layer of OSI model below:
- (A) ATM (Asynchronous Transfer Mode), Frame Relay
  - (B) HDLC (High Level Data Link Control), SDLC (Synchronous Data Link Control)
  - (C) ARP (Address Resolution Protocol), IEEE802.3
  - (D) All the above
17. The functions of a Logical Link Layer (LLC) are:
- (A) Error control
  - (B) Flow control
  - (C) Creating and managing the communication link between two devices with the help of the Transport layer.
  - (D) All the above
18. CRC stands for \_\_\_\_\_.
- (A) Cyclic redundancy check
  - (B) Code repeat check
  - (C) Code redundancy check
  - (D) Cyclic repeat check
19. When 2 or more bits in a data unit has been changed during the transmission, the error is called\_\_\_\_\_.
- (A) Random error
  - (B) Burst error
  - (C) Inverted error
  - (D) Double error
20. How many layers does OSI Reference Model has?
- (A) 4
  - (B) 5
  - (C) 6
  - (D) 7

21. When does the station B send a positive acknowledgement (ACK) to station A in Stop and Wait protocol?
- (A) Only when no error occurs at the transmission level
  - (B) When retransmission of old packet in a novel frame is necessary
  - (C) Only when station B receives frame with errors
  - (D) All of the above
22. The technique of temporarily delaying outgoing acknowledgements so that they can be hooked onto the next outgoing data frame is called \_\_\_\_\_.
- (A) Piggybacking
  - (B) Cyclic redundancy check
  - (C) Fletcher's checksum
  - (D) Parity check
23. The maximum length (in bytes) of an IPv4 datagram is?
- (A) 32
  - (B) 1024
  - (C) 65535
  - (D) 512
24. Which of the following are transport layer protocols used in networking?
- (A) TCP and FTP
  - (B) UDP and HTTP
  - (C) TCP and UDP
  - (D) HTTP and FTP

25. Which ARQ mechanism deals with the transmission of only damaged or lost frames despite the other multiple frames by increasing the efficiency & its utility in noisy channels?
- (A) Go Back N ARQ
  - (B) Selective Repeat ARQ
  - (C) Stop and Wait ARQ
  - (D) All of the above
26. Which of the following approaches to switching share networks resource?
- (A) Circuit switching
  - (B) Packet switching
  - (C) Both (A) and (B)
  - (D) None of these
27. Which of the following cannot be used as a medium for 802.3 Ethernet?
- (A) A thin coaxial cable
  - (B) A twisted pair cable
  - (C) A microwave link
  - (D) A fiber optical cable
28. The term IANA stands for?
- (A) Internet Assigned Numbers Authority
  - (B) Internal Assigned Numbers Authority
  - (C) Internet Associative Numbers Authoritative
  - (D) Internal Associative Numbers Authority
29. Which services are provided by transport layer?
- (A) Error control
  - (B) Connection service
  - (C) Connection less service
  - (D) Congestion control



30. Which one of the following is not a function of network layer?
- (A) Routing
  - (B) Inter-networking
  - (C) congestion control
  - (D) Error control
31. In virtual circuit network each packet contains \_\_\_\_\_.
- (A) Full source and destination address
  - (B) A short VC number
  - (C) Only source address
  - (D) Only destination address
32. Which of the following routing algorithms can be used for network layer design?
- (A) Shortest path algorithm
  - (B) Distance vector routing
  - (C) Link state routing
  - (D) All of the mentioned
33. Which one the following algorithm is not used for congestion control?
- (A) Traffic aware routing
  - (B) Admission control
  - (C) Load shedding
  - (D) Routing information protocol
34. The network layer contains which hardware device?
- (A) Routers, Bridges
  - (B) Bridges only
  - (C) Bridges and switches
  - (D) Routers, Bridges and Switches

35. What are called routers?
- (A) The devices that operates at session layer
  - (B) The devices that operates at network
  - (C) The devices that operates at data layer
  - (D) The devices that operates at application layer
36. RIP stands for \_\_\_\_\_
- (A) Reduced Information Protocol
  - (B) Routing Internet Protocol
  - (C) RoutingInformation Protocol
  - (D) Reduced Internet Protocol
37. DDP stand for\_\_\_\_\_.
- (A) Datagram Delivery Protocol
  - (B) Device Delivery Protocol
  - (C) Datagram Device Protocol
  - (D) Device Datagram Protocol
38. The loss in signal power as light travels down the fiber is called \_\_\_\_\_.
- (A) Attenuation
  - (B) Propagation
  - (C) Scattering
  - (D) Interruption
39. Which of the communication modes support twoway traffic but in only once direction of a time?
- (A) Simplex
  - (B) Half-duplex
  - (C) Three – quarter's duplex
  - (D) Full duplex

40. Which of the following switch methods creates a point-to-point physical connection between two or more computers?
- (A) Message switching
  - (B) Packet switching
  - (C) Circuit switching
  - (D) None of these
41. SLIP stands for \_\_\_\_\_.
- (A) System line internet protocol
  - (B) Serial line internet protocol
  - (C) Signal line internet protocol
  - (D) Signal internet protocol
42. Which of the following layers does the HTTP protocol work on?
- (A) Physical layer
  - (B) Data-link layer
  - (C) Application layer
  - (D) None of the these
43. MAC address is also called \_\_\_\_\_.
- (A) Physical address
  - (B) Logical address
  - (C) Source address
  - (D) Destination address
44. Which of the following statement correct about the cipher in cryptography?
- (A) It is a method for performing encryption and decryption
  - (B) It is used to establish the network connection
  - (C) It is a message event
  - (D) All of these

45. ARPANET stands for \_\_\_\_\_.  
(A) Advanced Recheck Projects Agency Internet  
(B) Advanced Recheck Projects Agency Network  
(C) Advanced Research Projects Agency Network  
(D) Advanced Research Projects Agency Internet
46. Which of the following protocols is the connection-less protocol?  
(A) UDP  
(B) TCP  
(C) IP  
(D) All of these
47. How many pins does RJ-45 contain?  
(A) Two  
(B) Four  
(C) Eight  
(D) Ten
48. For  $n$  devices in a network \_\_\_\_\_ number of duplex-mode links are required for a mesh topology.  
(A)  $n(n+1)$   
(B)  $n(n-1)$   
(C)  $n(n+1)/2$   
(D)  $n(n-1)/2$
49. \_\_\_\_\_ is a bit-oriented protocol for communication over point-to-point and multipoint links.  
(A) Stop-and-wait  
(B) HDLC  
(C) Sliding window  
(D) Go-back-N
50. IPv6 does not support which of the following addressing modes?  
(A) Unicast addressing  
(B) Multicast addressing  
(C) Broadcast addressing  
(D) Any cast addressing

51. Which of the following is not a congestion policy at network layer?
- (A) Flow Control Policy
  - (B) Packet Discard Policy
  - (C) Packet Lifetime Management Policy
  - (D) Routing Algorithm
52. A network with bandwidth of 10 Mbps can pass only an average of 12,000 frames per minute with each frame carrying an average of 10,000 bits. What is the throughput of this network?
- (A) 1 Mbps
  - (B) 2 Mbps
  - (C) 10 Mbps
  - (D) 12 Mbps
53. Suppose transmission rate of a channel is 32 kbps. If there are '8' routes from source to destination and each packet p contains 8000 bits. Total end to end delay in sending packet p is \_\_\_\_\_.
- (A) 2 Sec
  - (B) 3 Sec
  - (C) 4 Sec
  - (D) 1 Sec
54. \_\_\_\_\_ do not take their decisions on measurements or estimates of the current traffic and topology.
- (A) Static algorithms
  - (B) Adaptive algorithms
  - (C) Non-adaptive algorithms
  - (D) Recursive algorithms

55. The \_\_\_\_\_ layer establishes, maintains, and synchronizes the interaction between communicating systems.
- (A) Network
  - (B) Transport
  - (C) Session
  - (D) presentation
56. The functionalities of the presentation layer include\_\_\_\_\_.
- (A) Data compression
  - (B) Data encryption
  - (C) Data description
  - (D) All of the mentioned
57. Which network component/s is/are involved in the Presentation layer of an OSI model?
- (A) Gateway
  - (B) Multiplexer & Oscilloscope
  - (C) Amplifier & Hub
  - (D) All of the above
58. TELNET, FTP, SMTP. Protocols fall in the following layer of OSI reference model?
- (A) Transport layer
  - (B) Internet layer
  - (C) Network layer
  - (D) Application layer

59. Which one of the following allows a user at one site to establish a connection to another site and then pass keystrokes from local host to remote host?
- (A) HTTP
  - (B) FTP
  - (C) Telnet
  - (D) TCP
60. Which of the following protocol is used for transferring electronic mail messages form one machine to another?
- (A) TELNET
  - (B) FTP
  - (C) SNMP
  - (D) SMTP
61. What is the size of the 'total length' field in IPv4 datagram?
- (A) 4 bit
  - (B) 8 bit
  - (C) 16 bit
  - (D) 32 bit
62. Communication between a computer and a keyboard involves \_\_\_\_\_ transmission.
- (A) Automatic
  - (B) Half-duplex
  - (C) Full-duplex
  - (D) Simplex
63. In the layer hierarchy as the data packet moves form the upper to the lower layers, headers are \_\_\_\_\_.
- (A) Added
  - (B) Removed
  - (C) Rearranged
  - (D) Modified

64. Network congestion occurs \_\_\_\_\_.  
(A) In case of traffic overloading  
(B) When a system terminates  
(C) When connection between two nodes terminates  
(D) In case of transfer failure
65. A single channel is shared by multiple signals by \_\_\_\_\_.  
(A) Analog modulation  
(B) Digital modulation  
(C) Multiplexing  
(D) Phase modulation
66. Which one of the following algorithm is not used for congestion control?  
(A) Traffic aware routing  
(B) Admission control  
(C) Load Shedding  
(D) Routing information protocol
67. Which one of the following is a version of UDP with congestion control?  
(A) Datagram congestion control protocol  
(B) Stream control transmission protocol  
(C) Structured stream transport  
(D) User congestion control protocol
68. \_\_\_\_\_ is the multiplexing technique that shifts each signal to a different carrier frequency.  
(A) FDM  
(B) TDM  
(C) Both FDM & TDM  
(D) PDM



69. If link transmits 2000 frames per second, and each slot has 8 bits, the transmission rate of circuit this TDM is \_\_\_\_\_.  
(A) 16 kbps  
(B) 500 bps  
(C) 500 kbps  
(D) 32 bps
70. The state when dedicated signals are idle are called \_\_\_\_\_.  
(A) Death period  
(B) Poison period  
(C) Silent period  
(D) Stop period
71. Which of the following delay is faced by the packet in travelling from one end system to another?  
(A) Propagation delay  
(B) Queuing delay  
(C) Transmission delay  
(D) All of the mentioned
72. The time required to examine the packet's header and determine where to direct the packet is part of \_\_\_\_\_.  
(A) Processing delay  
(B) Queuing delay  
(C) Transmission delay  
(D) Propagation delay
73. In which of the following switching methods, the message is divided into small packets?  
(A) Message switching  
(B) Packet switching  
(C) Virtual switching  
(D) None of the these

74. A device is sending out data at the rate of 2000 bps. How long does it take to send a file of 1,00,000 characters?
- (A) 50
  - (B) 200
  - (C) 400
  - (D) 800
75. Which algorithm is used to shape the bursty traffic into a fixed rate traffic by averaging the data rate?
- (A) Solid bucket algorithm
  - (B) Spanning tree algorithm
  - (C) Hocken helm algorithm
  - (D) Leaky bucket algorithm
76. Consider the following statements.
- (I) TCP connections are full duplex.
  - (II) TCP has no option for selective acknowledgment
  - (III) TCP connections are message streams.
- (A) Only I is correct
  - (B) Only I and II are correct
  - (C) Only II and III are correct
  - (D) All of I, II and III are correct
77. Which of the following is NOT true about User Datagram Protocol in transport layer?
- (A) Works well in unidirectional communication, suitable for broadcast information.
  - (B) It does three-way handshake before sending datagrams
  - (C) It provides datagrams, suitable for modeling other protocols such as in IP tunneling or Remote Procedure Call and the Network File System
  - (D) The lack of retransmission delays makes it suitable for real-time applications

78. UDP packets are called as \_\_\_\_\_.  
(A) Segments  
(B) Checksum  
(C) Frames  
(D) Datagrams
79. What is the second name of the proxy server?  
(A) Proxy tools  
(B) Application proxy  
(C) Application-level gateway  
(D) All of the these
80. Which of the following servers allows LAN users to share data?  
(A) Data server  
(B) Point server  
(C) File server  
(D) Communication server
81. Which of the following layers does the HTTP protocol work on?  
(A) Physical layer  
(B) Data-link-layer  
(C) Application layer  
(D) None of these
82. What is the size of the sender window in the Go Back n (ARQ) protocol?  
(A) 0  
(B) 1  
(C) 10  
(D) n

83. User datagram protocol is called connectionless because \_\_\_\_\_.  
(A) All UDP packets are treated independently by transport layer  
(B) It sends data as a stream of related packets  
(C) It is received in the same order as sent order  
(D) It sends data very quickly
84. The process of converting analog signals into digital signals so they can be processed by a receiving computer is referred to as:  
(A) Modulation  
(B) Demodulation  
(C) Synchronizing  
(D) Digitizing
85. A set of rules that governs data communication is called:  
(A) Protocols  
(B) Standards  
(C) RFCs  
(D) Servers
86. What is the use of Ping command?  
(A) To test a device on the network is reachable  
(B) to test a hard disk fault  
(C) To test a bug in an Application  
(D) To test a Printer Quality
87. Dynamic routing protocol enable routers to:  
(A) Dynamically discover and maintain routes  
(B) Distribute routing updates to other routers  
(C) Reach agreement with other routers about the network topology  
(D) All of the above

88. How many layers are present in the internet protocol stack (TCP/IP model)?
- (A) 5
  - (B) 7
  - (C) 6
  - (D) 10
89. \_\_\_\_\_ topology requires a multipoint connection.
- (A) Star
  - (B) Mesh
  - (C) Ring
  - (D) Bus
90. Most packet switches use this principle \_\_\_\_\_.
- (A) Stop and wait
  - (B) Store and forward
  - (C) Store and wait
  - (D) Stop and forward
91. The required resources for communication between end systems are reserved for the duration of the session between end system in \_\_\_\_\_ method.
- (A) Packet switching
  - (B) Circuit switching
  - (C) Line switching
  - (D) Frequency switching
92. The technique in which a congested node stops receiving data from the immediate upstream node or nodes is called as \_\_\_\_\_.
- (A) Admission policy
  - (B) Backpressure
  - (C) Forward signaling
  - (D) Backward signaling

93. The packet sent by a node to the source to inform it of congestion is called \_\_\_\_\_.  
(A) Explicit  
(B) Discard  
(C) Choke  
(D) Backpressure
94. Electronic mail uses which Application layer protocol?  
(A) SMTP  
(B) HTTP  
(C) FTP  
(D) SIP
95. PPP consists of \_\_\_\_\_ components:  
(A) Three (encapsulating, the Domain Name system)  
(B) Three (encapsulating, a link control protocol, NCP)  
(C) Two (a link control protocol, Simple Network Control protocol)  
(D) One (Simple Network Control protocol)
96. The total nodal delay is given by \_\_\_\_\_.  
(A)  $D_{\text{nodal}} = d_{\text{proc}} - d_{\text{queue}} + d_{\text{trans}} + d_{\text{prop}}$   
(B)  $D_{\text{nodal}} = d_{\text{proc}} + d_{\text{trans}} - d_{\text{queue}}$   
(C)  $D_{\text{nodal}} = d_{\text{proc}} + d_{\text{queue}} + d_{\text{trans}} + d_{\text{prop}}$   
(D)  $D_{\text{nodal}} = d_{\text{proc}} + d_{\text{queue}} - d_{\text{trans}} - d_{\text{prop}}$
97. The Identifier that is used for data transfer in virtual circuit network is called \_\_\_\_\_.  
(A) Global address  
(B) Virtual circuit identifier  
(C) Network identifier  
(D) IP identifier

98. The main contents of the routing table in datagram networks are \_\_\_\_\_.  
(A) Source and Destination address  
(B) Destination address and Output port  
(C) Source address and Output port  
(D) Input port and Output port
99. Which of the following is true with respect to the delay in datagram networks?  
(A) Delay is greater than in a virtual circuit network  
(B) Each packet may experience a wait at a switch  
(C) Delay is not uniform for the packets of a message  
(D) All of the mentioned
100. A point-to point protocol over Ethernet is a network protocol for \_\_\_\_\_.  
(A) Encapsulating PPP frames inside Ethernet frames  
(B) Encapsulating Ethernet frames inside PPP frames  
(C) For security of Ethernet frames  
(D) For security of PPP frames

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**DO NOT OPEN THE QUESTION BOOKLET UNTIL ASKED TO DO SO**

1. Examinee should enter his / her roll number, subject and Question Booklet Series correctly in the O.M.R. sheet, the examinee will be responsible for the error he / she has made.
2. **This Question Booklet contains 100 questions, out of which only 75 Question are to be Answered by the examinee. Every question has 4 options and only one of them is correct. The answer which seems correct to you, darken that option number in your Answer Booklet (O.M.R ANSWER SHEET) completely with black or blue ball point pen. If any examinee will mark more than one answer of a particular question, then the first most option will be considered valid.**
3. Every question has same marks. Every question you attempt correctly, marks will be given according to that.
4. Every answer should be marked only on Answer Booklet (O.M.R ANSWER SHEET). Answer marked anywhere else other than the determined place will not be considered valid.
5. Please read all the instructions carefully before attempting anything on Answer Booklet (O.M.R ANSWER SHEET).
6. After completion of examination please hand over the Answer Booklet (O.M.R ANSWER SHEET) to the Examiner before leaving the examination room.
7. There is no negative marking.

**Note:** On opening the question booklet, first check that all the pages of the question booklet are printed properly in case there is an issue please ask the examiner to change the booklet of same series and get another one.