

Roll No: _____

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Examination: Even Semester Examination (Backlog)-2023

Paper Name: Data Communication and Computer Networks Basics

Paper Code: BCA-202/BCIA-202/BSIS-202

Time: 3 Hours

Maximum Marks: 75

Note: Follow proper numbering for answering the questions.

Section- A

(Attempt all questions | 35 x 1 = 35)

Q. No.	Question	Ma-rks	CL O	B L
1	The hamming code is used to _____ (a) Detect and correct error (b) Correct errors (c) Detect errors (d) None of the above	1	4	1
2	A collection of hyperlinked documents on the internet forms the : (a) HTTP (b) WWW (c) Hyperlink (d) none	1	5	2
3	Node-to-Node delivery is ensured by which of the following layer (a) Application layer (b) Data link (c) Transport (d) none	1	4	2
4	HTTP uses the services of _____ on well-known port 80? (a) IP (b) UDP (c) TCP (d) None	1	5	2
5	Which of the following layer is responsible for routing (a) Physical layer (b) Application layer (c) Network layer (d) none	1	4	2
6	OFC uses the principle of _____. (a) Attenuation (b) Total Internal Reflection (c) Network layer (d) none	1	1	1
7	Which of the following is the fastest transmission media (a) Coaxial cable (b) OFC (c) Twisted pair (d) all of the above	1	1	1
8	Transmission data rate is decided by which layer? (a) Physical Layer (b) Network Layer (c) Transport Layer (d) None	1	4	2
9	Which address is the loopback address? (a) 126.0.0.0 (b) 1.0.0.1 (c) 127.0.0.1 (d) 255.255.255.255	1	3	2
10	Datagrams networks mainly refer to (a) Internetwork (b) Connectionless networks (c) Telephone networks (d) Connection oriented networks	1	3	2
11	Computer to printer communication can be considered in (a) Simplex mode (b) Half Duplex mode (c) Full Duplex mode (d) none	1	2	2
12	The speed mismatch between the sender and the receiver is called _____. (a) error control (b) speed error (c) flow control (d) transmission control	1	3	3
13	Which of the following primarily uses guided media? (a) Cellular telephone system (b) Local telephone system (c) Satellite communication (d) Radio broadcasting	1	1	2
14	HTTP Status Code 302 (a) Temporary Redirect (b) Permanent Redirect (c) Internal Server Error (d) none	1	5	1
15	VPN stands for (a) Virtual Private Network (b) Visual private network (c) Virtual public network (d) Visual public network	1	3	1
16	Which type of DNS record holds the IPv4 IP address for a hostname? (a) The CName record (b) The A record	1	3	2

	(c) The PTR record (d) The AAAA record			
17	The topology with highest reliability is : (a) Mesh Topology (b) Bus Topology (c) Ring Topology (d) Star Topology	1	1	2
18	Syntax and semantics of the information exchanged between two systems is done by (a) Session layer (b) Application layer (c) Transport layer (d) Presentation layer	1	1	2
19	Bluetooth is an example of: (a) Personal area network (b) Local area network (c) Virtual private network (d) Wide area Network	1	1	2
20	The geostationary satellite used for communications systems: (a) is positioned over equator (b) remains stationery relative to the earth (c) rotates with the earth (d) all of these	1	1	2
21	Which topology has Multipoint connection? (a) Star (b) Mesh (c) Ring (d) BUS	1	1	2
22	Data rate depends on which of the following factor (a) Bandwidth available (b) Level of the signals we use (c) Quality of the channel (d) All of the above	1	2	3
23	Identify the protocol primarily used for browsing data (a) HTML (b) SGML (c) FTP (d) HTTP	1	5	2
24	Which of the following layer isn't present in the TCP/IP model but is included in the OSI model? (a) Application Layer (b) Network Layer (c) Session Layer (d) Transport layer	1	1	2
25	What is the length of the IPv4 address? (a) 16 bits (b) 64 bits (c) 32 bits (d) None	1	4	2
26	The standard against which protocols are measured is the OSI model protocol. (True/False)	1	1	2
27	FTP is used for sending email (True/False)	1	2	2
28	A hub connects two different LANs (True/False)	1	1	3
29	In Datagram approach Packets may arrive at the receiver in sequential order (True/False)	1	3	2
30	In selective repeat the sender window size is equal to receiver windows size (True/False)	1	4	2
31	Quantization noise can be reduced by decreasing the number of levels (True/False)	1	2	3
32	Attenuation refers to the loss of signal strength.(True / False)	1	2	2
33	SAN stands for Site Area Network. (True / False)	1	1	1
34	The Application layer includes the network applications through which the user interacts. (True / False)	1	5	2
35	The simplest method for error correction is retransmission. (True / False)	1	4	2

Section-B

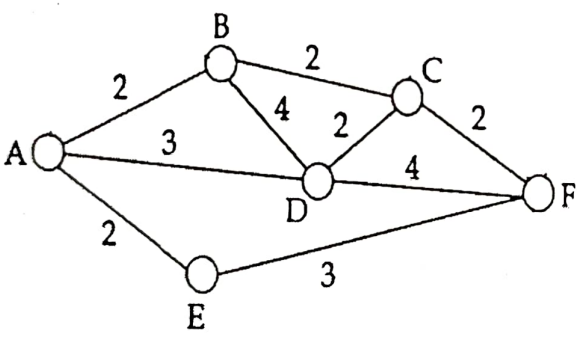
(Attempt any four questions | 4 x 5 = 20)

Q. No	Question	Marks	CL O	B L
1.	What is the use of circuit switching and packet switching?	5	3	3
2.	Briefly explain the purpose of forward DNS lookup?	5	5	2

3.	Differentiate between TCP and UDP Protocol.	5	4	2
4.	Find the CRC of Data Block 100100 with the divisor 1101.	5	4	5
5.	Differentiate between Go-Back-N and Selective Repeat ARQ.	5	4	2
6.	Explain any two: a) Wide Area Network b) Private Vs Public IP Address c) Bandwidth Vs Speed d) Reverse DNS Query	5	1, 2, 3, 5	2

Section-C

(Attempt any two questions | 2 x 10 = 20)

Q. No.	Question	Marks	CL O	BL
1	Describe the OSI network model including the major protocols to be used in each layer.	10	1, 4	4
2	What is network topology and what are its types? Explain with the help of suitable diagrams.	10	1	2, 6
3	(i) Find shortest path from A to F. Show intermediate steps following the Dijkstra Algorithm.  (7 Marks) (ii) We need to send 265 kbps over a noiseless channel with a bandwidth of 20 kHz. How many signal levels do we need? (3 Marks)	10	4, 2	5
4	Write short notes on any TWO: (a) Pulse Code Modulation (b) Types of Transmission Media (c) TCP 3-way handshake (d) HTTP Protocol		1, 2, 5	2, 3

BL – Bloom's Taxonomy Levels (1-Remembering, 2-Understanding, 3-Appealing, 4-Analyzing, 5-Evaluating, 6-Creating)