Workbook Cum Question Bank with Answers

Information Technology

Class-XII (CHSE)

SCHEDULED CASTES & SCHEDULED TRIBES
RESEARCH & TRAINING INSTITUTE (SCSTRTI)
ST & SC DEVELOPMENT DEPARTMENT
BHUBANESWAR

INFORMATION TECHNOLOGY

WORKBOOK-CUM-QUESTION BANK WITH ANSWERS

CLASS - XII (CHSE)

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PAPER - I

UNIT - I

NETWORKING & OPEN STANDARDS

A. COMPUTER NETWORKING

I. Multiple Choice Questions:

1. Computer Network is

(a) Collection of hardware components and computers

(b) Interconnected by communication channels

(c) Sharing of resources and information

(d) All of the Above

2. The best example of computer network is _____ .

(a) Switch (b) Router

(c) Internet (d) None of these

3. What is the meaning of Bandwidth in Network?

(a) Transmission capacity of a communication channels

(b) Connected Computers in the Network

(c) Class of IP used in Network

(d) None of Above

4. Repeater operates in which layer of the OSI model?

(a) Physical layer (b) Data link layer

(c) Network layer (d) Transport layer

5. _____ is to regenerate the signal over the same network before the signal becomes too weak.

(a) Hub (b) Repeater

(c) Switch (d) Router

6. Bridge works in which layer of the OSI model?

(a) Application layer

(b) Transport layer

(c) Network layer

(d) Data link layer

7. What is the use of Bridge in Network?

(a) to connect two LANs

(b) to separate LANs

(c) to control Network Speed

(d) all of the above

8. Router operates in which layer of OSI Reference Model?

(a) Physical Layer

(b) Network Layer

(c) Transport Layer

(d) Application Layer

9. Routing tables of a router keeps track of _____.

(a) MAC Address Assignments

(b) Port Assignments to network devices

(c) Distribute IP address to network devices

(d) Routes to use for forwarding data to its destination

10. Layer-2 Switch is also called

(a) Multiport Hub

(b) Multiport Switch

(c) Multiport Bridge

(d) Multiport NIC

11. A _____ is designed for small physical areas such as an office, group of buildings within 10K.m radius.

(a) LAN (b) WAN

(c) MAN (d) None of these

12. A _____ covers towns and cities within 50K.m radius.

(a) LAN (b) WAN

(c) MAN (d) None of these

13. It is used for the network that covers large distance such as cover states and countries.

(a) LAN (b) WAN

(c) MAN (d) None of these

14. _____ is a standard for short-distance wireless communication.

(a) Wi-Fi (b) WAN

(c) MAN (d) None of these

15. Which of the following is/are the advantages of wireless LANs.

i. Installation speed and simplicity

ii. Installation flexibility

iii. Scalability

(a) i and ii only

(b) ii and iii only

(c) i and iii only

(d) All i, ii and iii

16. What does protocol defines?

(a) Protocol defines what data is communicated.

(b) Protocol defines how data is communicated.

(c) Protocol defines when data is communicated.

(d) All of above

17. What is the benefit of the Networking?

(a) File Sharing

(b) Easier access to Resources

(c) Easier Backups

(d) All of the Above

18. Which of the following is not the Networking Devices?

(a) Gateways (b) Window

(c) Routers (d) Firewalls

19. Which of the following is Software?

(a) Routers (b) Firewalls

(c) Gateway (d) Modems

20. Physical or logical arrangement of network is

(a) Topology

(b) Routing

(c) Networking

(d) None of the mentioned

21. This topology requires multipoint connection

(a) Star (b) Bus

(c) Ring (d) None of these

22. Bus, ring and star topologies mostly used in the

(a) LAN (b) MAN

(c) WAN (d) Internetwork

23. Combination of two or more topologies are called

(a) Star (b) Bus

(c) Ring (d) Hybrid

24. Which of the following is not type of the network topology.

(a) Mesh (b) Bus

(c) Ring (d) Stub

25. In a network with 24 computers, which topology would require the most extensive cabling?

(a) Bus (b) Mesh

(c) Star (d) Tree

26. Mesh topology has _____ physical channels to link 'n' devices.

(a) n (b) n(n-1)/2

(c) (n-1) (d) None of these

27. In the star topology we use a central device

(b) Hub (b) Electrical cable

(c) Bus (d) None of these

28. Internet is

(a) A local computer network

(b) A worldwide network of computers

(c) An interconnected network of computers

(d) A worldwide interconnected network of computers which use a common protocol to Communicate with one another

29. Internet requires

(a) An international agreement to connect computers

(b) A local area network

(c) A commonly agreed set of rules to communicate between computers

(d) A World Wide Web

30. Each computer connected to the internet must

(a) Be an IBM PC

(b) Have a unique IP address

(c) Be internet compatible

(d) Have a modem connection

31. Which of the following is a type of computer network?

(a) Telnet (b) MAN

(c) Bluetooth (d) HTTP

32. Which of the following is a valid network topology?

(a) WAN (b) MAN

(c) Ring (d) PAN

II. Fill in the Blanks :

33. A set of nodes connected by _____ is called a Network.

34. The exchange of data between two devices through transmission medium is called _____.

35. _____ is a set of rules which govern data communication.

36. A _____ is a multiport repeater.

37. A _____ is used to connect two LANs working on same protocol.

38. _____ normally connects LANs and WANs together.

39. A _____ is a multi-port bridge with a buffer.

40. Data communication system spanning states, countries, or the whole world is _____.

41. _____ is a device that routes data packets based on their IP address.

III. Objective Type Questions:

42. How many layers of OSI Reference Model have?
43. What does Router do in a network?
44. In which topology there is a central controller or hub?
45. Which topology is called completely connected network?
46. Expand WAN?
47. Which network device is used to amplify signal in long-distance networking?

ANSWER KEYS

1.	(d)	9.	(d)	17.	(d)	25.	(b)
2.	(c)	10.	(c)	18.	(b)	26.	(b)
3.	(a)	11.	(a)	19.	(b)	27.	(a)
4.	(a)	12.	(c)	20.	(a)	28.	(c)
5.	(b)	13.	(b)	21.	(b)	29.	(c)
6.	(d)	14.	(a)	22.	(a)	30.	(b)
7.	(a)	15.	(d)	23.	(d)	31.	(b)
8.	(b)	16.	(d)	24.	(d)	32.	(c)

33. Link
34. Data Communication
35. Protocols
36. Hub
37. Bridge
38. Routers
39. Switch
40. WAN
41. Router
42. 7
43. Finds the best possible route for packets
44. Star
45. Mesh
46. Wide Area Network
47. Repeater

B. INTERNET & ITS APPLICATION

I. Multiple Choice Questions:

1. DNS maps IP addresses to

(a) A binary Address as string
(b) An alphanumeric string
(c) A hierarchy of domain names
(d) A hexadecimal Address

2. Identify the correct sequence in which packets are transmitted in a network by a host when a browser requests a webpage from a remote server.

(a) HTTP GET request, DNS Query, TCP SYN
(b) DNS Query, HTTP GET request, TCP SYN
(c) DNS Query, TCP SYN, HTTP GET request
(d) TCP SYN, HTTP GET request, DNS Query

3. Which one the following protocol is not used to resolve one form of an address to another

(a) DNS (b) ARP
(c) DHCP (d) RARP

4. 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

5. The location of a resource on the internet is given by its?

(a) Protocol (b) URL
(c) E-mail address (d) ICQ

6. Which one of the following is a valid email address?

(a) javat@point.com
(b) gmail.com
(c) tpoint@.com
(d) javatpoint@books

7. Which one of the following is the most common internet protocol?

(a) HTML (b) NetBEUI
(c) TCP/IP (d) IPX/SPX

8. The IP network 192.168.50.0 is to be divided into 10 equal sized subnets. Which of the following subnet masks can be used for the above requirement?

(a) 255.243.240
(b) 255.255.0.0
(c) 255.255.255.0
(d) 255.255.255

9. When the mail server sends mail to other mail servers it becomes ___?

(a) SMTP client (b) SMTP server
(c) Peer (d) Master

10. In specific, if the systems use separate protocols, which one of the following devices is used to link two systems?

(a) Repeater (b) Gateway
(c) Bridge (d) Hub

11. To join the internet, the computer has to be connected to a _____

(a) internet architecture board
(b) internet society
(c) internet service provider
(d) different computer

12. Some websites proved chat rooms to interact with an individual or a group is called _____

(a) Usenet (b) Newsgroup
(c) Chatting (d) E-mail

13. The _____ sites include text, animated graph, voice and images.

(a) Media (b) Telnet
(c) Intranet (d) Multimedia

14. A modem that has extra functions such as automatic answering and dialing is called _____ modems.

(a) Sophisticated (b) High class
(c) Dedicated (d) Intelligent

15. A computer sharing software package and hard disk is called a _____

(a) Server (b) Network
(c) File server (d) Stand-alone

16. As the definition of social media develops, what is one underlying element?

(a) The intersection between technology, social interaction, and sharing information.
(b) Microsoft is the primary developer.
(c) Use of the various elements is free.
(d) All of the above

17. Classifying content in social media happens through an activity such as

(a) Alphabetizing (b) Tagging
(c) Mapping (d) Line up

18. Unsolicited e-mail advertising is known as _____.

(a) Newsgroup
(b) Junk ads
(c) Spam
(d) None of the above

19. In social media, what type of marketing has become important for advertisers?

(a) E-mailed handbills and online press kits
(b) Word-of-mouth, or buzz marketing
(c) E Electronic ads
(d) Product placement

20. Blogs or weblogs are

(a) Web pages of short, frequently updated postings by an individual that are arranged chronologically.
(b) Messages of 140 characters or less.
(c) A category for discussion groups within Usenet.
(d) A web page that allows anyone to edit it.

21. What are shared on the Internet and are called as Web pages?

(a) Programs
(b) Cables
(c) Hypertext documents
(d) None

II. Fill in the blanks / State True or False:

22. An RPC (remote procedure call) is initiated by the _____
23. A remote procedure call is _____
24. _____ are the primary services offered by the computer networks.
25. _____ media is the pathway for contacting each computer with other.
26. In networks, users can share _____ and _____
27. The _____ button reverts to the home page of the website.
28. Web page editors works on a _____ principle.
29. The language that instructs the browser on how to display the hypertext, and adds pictures to the document is _____
30. Looking for information on the Internet is called _____
31. _____ was one of the first uses of the Internet and is still the most popular use, accounting for most of the traffic on the Internet.
32. Ping summarizes the packet loss and round-trip delay between two IP end points.State True/False
33. Web 2.0 is a term used to describe major technological shifts or improvements in the Web. State True/False
34. Media users today are accurately described as passive consumers because most tend to accept information and media content as presented. State True/False
35. Conversation is a defining characteristic of social media today. State True/False
36. A lurker on discussion boards and Web forums is a person who posts irrelevant or inflammatory messages. State True/ False
37. Blogs play an important curatorial role in social media because some popular blogs are followed by people seeking the best and most interesting ideas. State True/False

III. Objective Type Questions:

38. What is the mechanism that is used to convert domain name into IP address
39. What is DNS spoofing?
40. How many possible labels are allowed in the first level of generic domain?
41. The term HTTP stands for?
42. Which software prevents the external access to a system?
43. The term FTP stands for?
44. The term IANA stands for?
45. How many versions available of IP?
46. What is internet?
47. Which program/application is used by web clients to view the web pages?
48. What is the name of the location address of the hypertext documents?
49. Which tag is used to display text in title bar of a web document?
50. What are used with a tag to modify its function?

ANSWER KEYS

1. (c)
2. (c)
3. (c)
4. (a)
5. (b)
6. (a)
7. (c)
8. (c)
9. (a)
10. (b)
11. (c)
12. (c)
13. (d)
14. (d)
15. (c)
16. (a)
17. (b)
18. (c)
19. (b)
20. (a)
21. (c)
22. Client
23. Inter Process Communications
24. File Services
25. Transmission
26. Data & Programs
27. Home
28. WYSIWYG
29. HTML
30. Browsing & Surfing
31. E-mail
32. True
33. False
34. False
35. True
36. False
37. True
38. DNS
39. Un-authorized request to DNS
40. 7
41. Hyper Text Transfer Protocol
42. Firewall
43. File Transfer Protocol
44. Internet Assigned Numbers Authority
45. 2
46. Inter Connected of Network
47. Browsing
48. URL
49. <Title>
50. Attributes

C. NETWORK SECURITY ON INTERNET

GROUP-A

I. Objective & Very Short Type Questions

1. _____ designed to protect a network, data and devices using both software and hardware.
2. Which of the following security concern refers to prevent unauthorized users from data and devices access?
   (a) Protection
   (b) Prevention
   (c) Exploitation
   (d) Network Weakness
3. _____ refers to an attack on a computer system, especially one that takes advantage of a particular vulnerability the system offers to intruders.
4. The network weakness refers to a flaw in software or hardware in the network that can damage the data or harm the network security. (True/False)
5. Malware stands for Malicious Software. (True/False)
6. A _____ is developed with an intention to damage, steal, or creating trouble for data access.
7. Malwares' are being created and populated with the purpose of
   (a) helping network users from malicious attack
   (b) financial and resource damage
   (c) further improvements
   (d) secure the network
8. A _____ is malicious software developed to perform some malicious activities and damage the resources of computer systems like memory, data, files, programs, and related information.
9. Which of the following replicates itself and spread itself to other computers through the network?
   (a) Worm (b) Ransomware
   (c) Trojan (d) Spam
10. Which of the following is having a set of useful or desirable features but contains damaging code?
    A. Worm B. Ransomware
    C. Trojan D. Spam
11. _____ prevents data access from your computer system and asks to pay money.
12. Which of the following tracks your data and activities then popups some advertisements?
    (a) Malware (b) Spyware
    (c) Adware (d) Google Ads
13. The computer restarting frequently is one of the virus ill effect. (True/False)
14. _____help to enhance the user experience with the website and make your browsing more productive and time-saving.

15. Which of the following checks certain data related to the user login such as name, address, contact, dob, and fills up it automatically?
    (a) Session Cookies
    (b) Authentication Cookies
    (c) Internet browser History
    (d) Popup Ads
16. A _____ is hardware or software that protect a trusted private network from unauthorized access or traffic coming from outside.
17. Which of the following is the most common source of virus?
    (a) A new hardware
    (b) A newly licensed software from the internet
    (c) Email Attachment
    (d) All of these
18. A firewall is one type of software only that monitors the traffic of the network. (True/False)
19. A _____ refers to sending an unsolicited message to a large number of people with the intention of marketing, advertising, promoting or fraudulent activity through email.
20. Spam refers to junk email (True/False).
21. Computer virus is a _____.
    (a) Software (b) Hardware
    (c) Both A and B (d) None of these
22. When any crime is committed over the Internet is called as _____.
    (a) Cyber crime (b) Crime
    (c) Social crime (d) None of these
23. _____is an electronic signature that can be used to authenticate the identity of sender of a message.
    (a) Signature
    (b) Digital Signature
    (c) Authenticate Signature
    (d) None of these

II. Write the Full form

1. VIRUS
2. Malware
3. SPOOL
4. SPAM

GROUP-B

(Subjective type questions)

1. What do you mean by data security?
2. Why network security is important?
3. What is network security and its types?
4. What are the main concerns for computer security?
5. What do you mean by malware? Give example.
6. Define virus with examples.
7. What are the ill effects of a virus?
8. What do you mean by a worm?
9. What is Ransomware?
10. What do you mean by Trojan Horse?
11. What is spam?
12. Explain the use of cookies and their basic types.
13. What is firewall? Illustrate your answer with their types.

14. How is a Trojan Horse harmful to a network?
15. What is the significance of cyber law?
16. What is hacking?
17. What is the Cyber crime meaning?
18. What is cyber stalking?
19. What is snooping?
20. What is spoofing?
21. What is spooling?
22. What is phishing and spoofing?
23. What is software piracy?
24. What is Cyber law?
25. Differentiate between hacker and cracker.
26. What is digital signature?

GROUP-C
(Long Answer type questions)

1. What do you understand by Network Security? Name two common threats to it.
2. What is cyber crime? Explain different cyber crime.
3. Differentiate between cyber crime and cyber stalking.
4. What is software piracy? Explain types of software piracy.
5. What is Cyber law? Explain major areas of Cyber law.
6. What is digital signature? Explain the uses of digital signature.

ANSWER KEYS

GROUP-A

I. Objective & Very Short Type Question Answers

1. Network Security
2. (b) Prevention
3. Exploitation
4. True
5. True
6. Malware
7. (b) financial and resource damage
8. Virus
9. (a) Worm
10. (c) Trojan
11. Ransomware
12. (c) Adware
13. True
14. Cookies
15. (b) Authentication Cookies
16. firewall
17. (c) Email Attachment
18. False
19. spam
20. True
21. (a) Software
22. (a) Cyber crime
23. (b) Digital Signature

II. Write the Full form

1. VIRUS : Vital Information Resources Under Seize
2. Malware : Malicious Software
3. SPOOL : Simultaneous Peripheral Operations On-line
4. SPAM : Specialized Automated Mail

GROUP-B

Subjective type Question Answers

1. Data security is the practice of protecting digital information from unauthorized access, corruption, or theft throughout its entire lifecycle.

2. Network security is important for home networks as well as in the business world. Most homes with high-speed internet connections have one or more wireless routers, which could be exploited if not properly secured. A solid network security system helps reduce the risk of data loss, theft and sabotage.

3. Network security works to keep the network safe from cyber attacks, hacking attempts, and employee negligence. There are three components of network security: **hardware, software, and cloud services**. Hardware appliances are servers or devices that perform certain security functions within the networking environment.

4. The security precautions related to computer information and access address four major threats:
   i) Theft of data, such as that of military secrets from government computers
   ii) Vandalism, including the destruction of data by a computer virus
   iii) Fraud, such as employees at a bank channeling funds into their own

5. Malware (short for "malicious software") is a file or code, typically delivered over a network, that infects, explores, steals or conducts virtually any behavior an attacker wants.

   The most common types of malware include computer viruses, computer worms, Ransomware, Keyloggers, Trojan horses, spyware and other examples of malicious software.

6. Viruses are biological entities that can only thrive and multiply in a host, which is a living organism such as a human, an animal, or a plant. Some viruses cause disease. For example, severe acute respiratory syndrome Corona virus 2, or SARS-CoV-2, causes the disease COVID-19.

7. Viruses are very tiny germs. They are made of genetic material inside of a protein coating. Viruses cause familiar infectious diseases such as the common cold, flu and warts. They also cause severe illnesses such as HIV/AIDS,Ebola, and COVID-19.

8. A computer worm is a malicious, self-replicating software program (popularly termed as 'malware') which affects the functions of software and hardware programs.

9. Ransomware is malware that employs encryption to hold a victim's information at ransom. A user or organization's

critical data is encrypted so that they cannot access files, databases, or applications. A ransom is then demanded to provide access.

10. A Trojan Horse Virus is a type of malware that downloads onto a computer disguised as a legitimate program.

11. Spam is **digital junk mail** — unsolicited communications sent in bulk over the internet or through any electronic messaging system.

12. Cookies can gather information about the use of a website or enable the website to recognise the user as an existing customer when they return to the website at a later date. This file is neither a virus nor spyware. The law protects website users and lets them opt-out from the use of cookies on their website browser.

13. Network Firewalls are the devices that are used to prevent private networks from unauthorized access. A Firewall is a security solution for the computers or devices that are connected to a network, they can be either in form of hardware as well as in form of software.

14. Trojan horse like a virus or worm. At the backend, these perform some malicious activities like upload (send) some security files and information from the computer and at the same time download some unwanted files onto the computer.

15. Cyber law is related to all legal and regulatory aspects of Internet and the world wide web. Anything concerned with or emanating from any legal aspects among the users of Internet and other people in cyberspace comes within the ambit of cyber law. Cyber law works as a regulatory mechanism for the electronic commerce.

16. A commonly used hacking definition is **the act of compromising digital devices and networks through unauthorized access to an account or computer system**. Hacking is not always a malicious act, but it is most commonly associated with illegal activity and data theft by cyber criminals.

17. Cyber crime, also called computer crime, **the use of a computer as an instrument to further illegal ends**, such as committing fraud, trafficking in child pornography and intellectual property, stealing identities, or violating privacy.

18. Cyber stalking is the use of the Internet or other electronic means to stalk or harass an individual, group, or organization. It may include false accusations, defamation, slander and libel. It may also include monitoring, identity theft, threats, vandalism, solicitation for sex, doxing, or blackmail.

19. Snooping is a broad term that can include **casual observance of an email that appears on another person's computer screen or watching what someone else is typing**. More sophisticated snooping uses software to remotely monitor activity on a computer or as communications data traverses a network.

20. Spoofing is when an attacker impersonates an authorized device or user to steal data, spread malware, or bypass access control systems.

21. SPOOL is an acronym for **simultaneous peripheral operations on-line**. It is a kind of buffering mechanism or a process in which data is temporarily held to be used and executed by a device, program or the system.

22. Spear Phishing occurs when criminals obtain information about you from websites or social networking sites, and customize a phishing scheme to you. **Spoofing describes a criminal who impersonates another individual or organization, with the intent to gather personal or business information**

23. Software piracy is the illegal copy and use of software in a way other than that is officially documented by exclusive rights of the developer in the form of an individual or organization as described in the relevant sale agreement (license).

24. Cyber law (also referred to as cyber law) is a term used to describe the legal issues related to use of communications technology, particularly "cyberspace", i.e. the Internet.

25. A hacker is a person who is interested in gaining knowledge about the computer system and gaining unauthorized access to computer systems for playful pranks. Whereas crackers are the programmers with malicious mentality who break into secured system for the purpose of stealing and corrupting data.

26. A ***digital signature*** is a mathematical technique used to validate the authenticity and integrity of a message, software or digital document.

PRACTICE SET

I. Multiple Choice Queestions

1. Which of the following is considered as the unsolicited commercial email?
   a. Virus b. Malware
   c. Spam d. All of the above
2. A _____ is a type of malicious software, or *malware*, that spreads between computers and causes damage to data and software.
   a. worm b. bot
   c. cookie d. virus
3. Web hijacking is a process of
   a. Sniffing b. Hacking
   c. Spool d. None of these
4. Un- authorized access to a third party conversation is called as
   a. Denial of Service
   b. Cyber Stalking
   c. Cyber Squatting
   d. Eavesdropping
5. _____ is a crime in which someone harasses or stalks a *victim* using electronic or digital means, such as social media and email etc.
   a. Denial of Service
   b. Cyber Stalking
   c. Cyber Squatting
   d. Eavesdropping
6. The first computer virus is _____
   a. I love You b. Blaster
   c. Sasser d. Creeper
7. _____ is an attack that attempts to steal your money, or your identity, by getting you to reveal personal information.
   a. Phishing
   b. Vishing
   c. Soft-lifting
   d. Cross site Scripting
8. Non-repudiation is a feature of
   a. Encryption
   b. Firewall
   c. Digital Signature
   d. Public Key
9. Patent Law comes under
   a. Electronic Signature
   b. Intellectual Property Right
   c. Data Protection
   d. None of these
10. The primary source of Cyber Law in India is
    a. Information Technology Act-2000
    b. Internet Control Act-2008
    c. Cyber Crime Cell Act
    d. Indian Penal Code
11. Cyber Law terminology 'DoS' means
    a. Denial of Service
    b. Distributed operating system
    c. Distant operator Service
    d. None of these

12. Which of the following is not a type of cyber crime?
    a. Data theft
    b. Forgery
    c. Damage to data and systems
    d. Installing antivirus for protection

13. Which of the following is not done by cyber criminals?
    a. Unauthorized account access
    b. Mass attack using Trojans as botnets
    c. Email spoofing and spamming
    d. Report vulnerability in any system

II. Expand the following abbreviations

(a)	Wi-Fi	(b)	EPA
(c)	WEP	(d)	SSID
(e)	DoS	(f)	XSS
(g)	SSL	(h)	VPN
(i)	ITAA	(j)	IDRBT

III. SHORT ANSWER TYPE QUESTION?

1. (a) What is hacking?
   (b) What is pornography?
   (c) What is Computer Virus?
   (d) Define snooping.
   (e) What is software piracy?
   (f) What is cyber crime?
   (g) What is cyber stalking.
   (h) What is digital signature?
   (i) Define hash function.
   (j) What is cyber law?
   (k) What is Cyber law India?

IV. LONG ANSWER TYPE QUESTIONS

1. What is a Cyber crime? Discuss different types of cyber crimes, where the computer is used as a target.
2. What is a computer virus? How does a virus affect a computer system? Describe some of the preventive mechanism against this attack.
3. Describe the uses and security related to computer cookies.
4. What do you mean by Spoofing? Discuss different types of spoofing.
5. What do you mean by Internet Protocol? Briefly discuss some of these protocols.
6. Distinguish between Phishing and Vishing.
7. Describe the different types of Network Security Architecture.
8. Write short Notes on
   a. Encryption
   b. Firewall
   c. Digital Signature
   d. Hashing
9. Discuss various need of a Cyber Law.
10. Discuss the objectives and features of Information Technology Act of India.

ANSWER KEYS

I. Objective & Very Short Type Question Answers

1. c. Spam
2. d. virus
3. b. Hacking
4. d. Eavesdropping
5. b. Cyber Stalking
6. d. Creeper
7. a. Phishing
8. c. Digital Signature
9. b. Intellectual Property Right
10. a. Information Technology Act-2000
11. a. Denial of Service
12. d. Installing antivirus for protection
13. d. Report vulnerability in any system

II. Expand the following abbreviations

1. Wi-Fi : Wireless Fidelity
2. EPA: Environmental Protection Agency
3. WEP : Wired Equivalent Privacy
4. SSID: Service Set Identifier
5. DoS : Denial-of-Service
6. XSS : Cross-Site Scripting
7. SSL : Secure Sockets Layer
8. VPN : Virtual Private Network
9. ITAA : Information Technology Amendment Act / Information Technology Association of America
10. IDRBT : Institute for Development and Research in Banking Technology

III. SHORT ANSWER TYPE QUESTION?

1. (a) A commonly used hacking definition is **the act of compromising digital devices and networks through unauthorized access to an account or computer system**.

   (b) Pornographic films, erotic films, or sex films are films that present sexually explicit subject matter in order to arouse and satisfy the viewer

   (c) A computer virus is a type of computer program that, when executed, replicates itself by modifying other computer programs and inserting its own code.

   (d) An eavesdropping attack, also known as a sniffing or snooping attack, is a theft of information as it is transmitted over a network by a computer, smartphone, or another connected device.

(e) Software piracy is the illegal copy and use of software in a way other than that is officially documented by exclusive rights of the developer in the form of an individual or organization as described in the relevant sale agreement (license).

(f) Cybercrime, also called computer crime, **the use of a computer as an instrument to further illegal ends**, such as committing fraud, trafficking in child pornography and intellectual property, stealing identities, or violating privacy.

(g) Cyber stalking is **the act of persistent and unwanted contact from someone online**. It may involve any number of incidents including threats, libel, defamation, sexual harassment, or other actions in which to control, influence, or intimidate their target.

(h) A ***digital signature*** is a mathematical technique used to validate the authenticity and integrity of a message, software or digital document.

(i) A ***hash function*** takes a group of characters (called a key) and maps it to a value of a certain length (called a hash value or hash)

(j) Cyber law (also referred to as cyber law) is a term used to describe the legal issues related to use of communications technology, particularly "cyberspace", i.e. the Internet.

Cyber laws supervise the digital circulation of information, software, information security, e-commerce, and monetary transactions. The Information Technology Act, 2000 addresses the gamut of new-age crimes. Computer technology, mobile devices, software, and the internet are both medium and target of such crimes.

COMPUTER NETWORKS
(Important Questions & Answers)

1. Define Network. Give examples of network in our daily life.

Ans. A group of two or more similar things or people interconnected with each other is called network. Examples of network in daily life is :

i) Social network

ii) Mobile network

iii) Network of computers

iv) Airlines, railway, banks, hospitals networks

2. What do you mean by computer network?

Ans. A computer network is an interconnection of two or more computers or computing devices.

3. Write two advantages of computer network.

Ans. Two advantages of computer network are :

i) Sharing of Files.

ii) Sharing of resources like printer, scanner.

iii) Sharing of single internet connection.

4. Write two disadvantages of computer network.

Ans. Two disadvantages of computer network are :

i) Lack of data security.

ii) Viruses can spread easily in network due to interconnectivity of computers.

iii) Required a skilled person to handle the network.

5. Write any five components of computer network.

Ans. Five components of computer network are:

i) Network Interface Card(NIC) ii) HUB

iii) Switch iv) Repeater

v) Router vi) Modem

6. What do you mean by node in reference to computer network?

Ans. A device which is connected in a network and is capable to send, receive or forward information is called node.

7. Define the following terms

i) Server ii) Client

Ans. **Server :** It is a special computer which provide services to other computer/devices in a called clients.

Clients : A computer/device connected in a network sending request to server is called client.

8. What do you mean by Client-Server architecture?

Ans. In a client - server architecture, the client computer sends a request (regarding data/services) to server and the server accept, process and provide the requested data/services to the client. Example of client - server architecture is Email, WWW etc.

9. How data is transferred from one computer to another in a network?

Ans. Data in a network is divided into smaller chunks called packets. These packets are then carried over a network.

10. Name the different types of network on the basis of geographical area.

Ans. Different types of network on the basis of geographical area are :

i) LAN (Local Area Network)
ii) MAN (Metropolitan Area Network)
iii) WAN (Wide Area Network)

11. Write three differences between LAN, MAN and WAN.

Ans. Differences between LAN, MAN and WAN are:-

LAN	**MAN**	**WAN**
Local Area Network	Metropolitan Area Network	Wide Area Network
Data transfer rate is high	Data transfer rate is average	Data transfer rate is low
Easy to design and maintain	Little bit difficult to design and maintain	Difficult to design and maintain
A network in school, Hotel, Hospital etc.	A network in a city	A network in a county

12. Name the three cables used in networking.

Ans. Three cables used in networking are :

i) Coaxial Cable ii) Twisted Pair Cable iii) Optical Fiber Cable

13. What do you mean by LAN. Explain in brief.

Ans. It is a network that connects computers, mobile phones, tablet, mouse, printer, etc., placed at a limited distance. The geographical area covered by a LAN can range from a single room, a floor, an office having one or more buildings in the same premise.

14. Aman wants to connect 5 computers placed at different locations in a school. Name the network formed in the school.

Ans. LAN

15. What do you mean by MAN? Explain in brief.

Ans. Metropolitan Area Network (MAN) is an extended form of LAN which covers a larger geographical area like a city or a town. Data transfer rate in MAN is considerably less as compared to LAN. Cable TV network or cable based broadband internet services are examples of MAN.

16. Explain WAN in brief.

Ans. Wide Area Network (WAN) connects computers and others LANs and MANs, which are spread across different locations of a country or in different countries or continents. A WAN could be formed by connecting a LAN to other LANs via wired or wireless media.

17. Name the largest WAN that connects billions of computers, smartphones.

Ans. Internet

18. Cable TV network services is an example of _____ (LAN/MAN/WAN)

Ans. MAN

19. What do you mean by Network Devices. Give examples

Ans. Those devices which are used to communicate between different hardware used in computer network through different transmission media are called network devices. for example Router, Switch, Modem etc.

20. What is Modem?

Ans. Modem stands for 'Modulator DEMolulator'. It refers to a device which is used to convert analog signal to digital signal and vice versa.

21. Define Network Interface Card.

Ans. Network Interface Card (NIC) is a network adaptor used to set up a wired network. It acts as an interface between computer and the network. It is a circuit board mounted on the motherboard of a computer. Each NIC has a MAC address, which helps in uniquely identifying the computer on the network.

22. What is the purpose of repeater in networking.

Ans. The purpose of repeater is to regenerate the weakened signal in the network.

23. What is repeater? Explain in brief.

Ans. A repeater is an analog device that works with signals on the cables to which it is connected. The weakened signal is regenerated and put back on the cable by a repeater.

24. What is hub?

Ans. An Ethernet hub is a network device used to connect different devices through wires. Data arriving on any of the lines are sent out on all the others.

25. Write one limitation of hub.

Ans. The limitation of hub is that if data from two devices come at the same time, they will collide.

26. Why switch is called intelligent hub?

Ans. A switch send the data to only desired node instead of sending to all.

27. Explain the working of switch in brief.

Ans. When data arrives, the switch extracts the destination address from the data packet and looks it up in a table to see where to send the packet. Thus it sends signals to only selected devices instead of sending to all.

28. Write two differences between hub and switch.

Ans. Differences are :

HUB	**SWITCH**
It sends the data to all the connected node	It sends the data to only intended node
It do not provide Packet filtering	It provide packet filtering

29. What is router?

Ans. A router is a network device that can receive the data, analyse it and transmit it to other networks. A router connects a local area network to the internet.

30. What do you mean by ISP? Name any two ISP.

Ans. ISP stands for Internet Service Provider. It is an organisation that provides services for accessing the Internet. Two ISP's are : Airtel, Vodafone Idea limited, Jio, BSNL etc.

31. What is gateway in computer network?

Ans. A gateway is a key access point that acts as a "gate" between an organisation's network and the outside world of the Internet.

32. Identify the following

a. I am a networking device used to connect multiple computers. I sends the data to only intended node.

b. I serves as the entry and exit point of a network.

c. If a node from one network wants to communicate with a node of a foreign network, it will pass the data packet through me.

d. I am a wireless device which provide Wi-Fi access to smartphones and other devices

Answer :

a. Switch b. Gateway c. Gateway d. Router

33. What is Topology? Name three topologies.

Ans. The arrangement of computers and other peripherals in a network is called its topology. Common network topologies are mesh, ring, bus, star and tree.

34. What is bus topology?

Ans. A bus topology is an arrangement in which all the computers are connected to a single cable. The cable to which the nodes connect is called a "backbone".

35. Write two advantages and two disadvantages of bus topology.

Ans. Advantages of bus topology are :

i) It is easy to install.

ii) It is cost effective as it does not require much cable.

iii) Easy to connect or remove devices in this topology.

Disadvantages of bus topology are:

i) Difficult to find faulty device.

ii) If the main cable damage, then entire network will be down.

35. What is Star Topology?

Ans. A topology in which each communicating device is connected to a central node, like a hub or a switch is called star topology.

36. Write two advantages and two disadvantages of star topology.

Ans. Two advantages of star topology are:

i) Easy to detect fault. ii) Easy to install.

Two disadvantages of star topology are:

i) If the central hub/switch fails then the entire network fails.

ii) Installation cost is higher than bus/linear topology

37. What is ring topology?

Ans. In ring topology, each node is connected to two other devices, one each on either side. The nodes connected with each other thus form a ring. In a ring topology data can be transmitted in one direction only.

38. Write two advantages and two disadvantages of ring topology.

Ans. Two advantages of ring topology are :

i) Easy to install and expand.

ii) No data collision as data transmission is unidirectional.

Two disadvantages of ring topology are:

i) More cable is required than bus topology.

ii) If one node is down then the entire network fails.

39. Explain tree topology in brief.

Ans. It is a hierarchical topology, in which there are multiple branches and each branch can have one or more basic topologies like star, ring and bus. Such topologies are usually n WANs where multiple LANs are connected.

40. What is internet?

Ans. The Internet is the global network of computing devices including desktop, laptop, servers, tablets, mobile phones as well as peripheral devices such as printers, scanners, etc.

41. Name any four smart devices/appliances(devices which can be controlled by internet) other than mobile.

Ans. Four Smart devices are:

i) AC ii) TV iii) Fan iv) Light

42. Write any four uses of Internet.

Ans. Four uses of internet are :

i) Internet is used to book online tickets.

ii) Internet is used to play games.

iii) Internet is used for online teaching

iv) Internet is used to search any information.

43. Write any four services provided by internet.

Ans. Four services provided by internet are :

i) The World Wide Web (WWW) ii) Electronic mail (Email)

iii) Chat iv) Voice Over Internet Protocol (VoIP)

44. Write a short note on WWW.

Ans. The World Wide Web (WWW) or web in short, is an ocean of information, stored in the form of trillions of interlinked web pages and web resources. The resources on the web can be shared or accessed through the Internet.

45. Differentiate between URI and URL.

Ans. URI - Uniform Resource Identifier or URI is a unique identifier to identify a resource located on the web.

URI identifies a resource (hardware or software) either by its location or by its name or by both.

URL is Uniform Resource Locator and provides the location and mechanism (protocol) to access the resource.

46. Identify the domain name, protocol, sub-domain from the following domain.

https://www.csiplearninghub.com/class-11-ch-1/mcq

Ans. Domain name = www.csiplearninghub.com

Sub Domain Name = www

Protocol = https

47. What is Search Engine? Give two examples

Ans. A search engine is a website which help users to find specific information on internet. for example google, bing, yahoo etc.

48. What is http?

Ans. The Hyper Text Transfer Protocol is a set of rules which is used to retrieve linked web pages across the web. It's more secure and advanced version is HTTPS.

49. Rajlakshmi is a class 12 computer science student. She is confused between 'web' and 'internet'. As a friend of Rajlakshmi, explain her the difference between web and internet.

Ans. The Internet as we know is the huge global network of interconnected computers, which may or may not have any file or webpage to share with the world. The web on the other hand is the interlinking of a collection of WebPages on these computers which are accessible over the Internet.

50. What is Electronic mail? Give two examples of email service provider.

Ans. Email is the short form of electronic mail. It is one of the ways of sending and receiving message(s) using the Internet. An email can be sent anytime to any number of recipients at anywhere. Two email service providers are :

i) Google ii) Yahoo

51. Write any four common facilities available on email.

Ans. Four Common facilities available for an email users are :

i) Sending and receiving mail.

ii) Sending the copy of mail

iii) Forwarding a received email to other user(s)

iv) Filtering spam emails

52. Write a short note on chatting

Ans. Chatting or Instant Messaging (IM) over the Internet means communicating to people at different geographic locations in real time through text message(s). It is a forum where multiple people connect to each other, to discuss their common interests.

53. Give two examples of instant messengers.

Ans. Examples of instant messengers are: Skype, Facebook messenger, WhatsApp, Google Hangout etc.

54. Write short note on VoIP.

Ans. Voice over Internet Protocol or VoIP, allows us to have voice call (telephone service) over the Internet, i.e., the voice transmission over a computer network rather than through the regular telephone network. It is also known as Internet Telephony or Broadband Telephony.

54. Write two advantages of VoIP.

Ans. Advantages of VoIP are :

i) These services are either free or very economical, so people use them to save on cost. That is why these days even international calls are being made using VoIP.

ii) VoIP call(s) can be received and made using IP phones from any place having Internet access.

55. Write any one disadvantages of VoIP.

Ans. The disadvantage of VoIP is that its call quality is dependent on Internet connection speed. Slow Internet connection will lead to poor quality voice calls.

56. Anshuman is running a business. He has studied till class 10. He wants to launch a website for his business. He is confused between static and dynamic web page. As a website developer, help him to understand the difference between static and dynamic web page.

Ans. A static webpage is one whose content always remains static, i.e., does not change for person to person. A dynamic web page is one in which the content of the web page can be different for different users. They are more complex and thus take more time to load than static web pages.

57. Define the following terms :

i) Website ii) Webpage iii) Web server

Ans. **Website :** A website (usually referred to as a site in short) is a collection of web pages related through hyperlinks, and saved on a web server. A visitor navigates from one page to another by clicking on hyperlinks.

Webpage : A web page (also referred to as a page) is a document on the WWW that is viewed in a web browser. Basic structure of a web page is created using HTML (Hyper Text Markup Language) and CSS.

Web Server : A web server is used to store and deliver the contents of a website to clients such as a browser that request it. A web server can be software or hardware.

58. What is Error-404?

Ans. If the server is not able to locate the page, it sends a page containing the error message (Error 404 - page not found) to the client's browser.

59. Write a short note on web hosting.

Ans. Web hosting is a service that allows us to put a website or a web page onto the Internet, and make it a part of the World Wide Web. Once a website is created, we need to connect it to the Internet so that users across the globe can access.

60. What is DNS?

Ans. The domain name system (DNS) is a service that does the mapping between domain name and IP address. When the address of a website is entered in a browser, the DNS finds out the IP address of the server corresponding to the requested domain name and sends the request to that server.

61. Define browser.

Ans. A browser is a software application that helps us to view the web page(s). In other words, it helps us to view the data or information that is retrieved from various web servers on the Internet.

62. Name any two common web browser.

Ans. Some of the commonly used web browsers are Google Chrome, Internet Explorer, Mozilla Firefox, Opera, etc.

63. Write the steps to host a website.

Ans. Steps to host a website are :

i) Select the web hosting service provider that will provide the web server space.

ii) Identify a domain name, which best suits our requirement.

iii) Create logins with appropriate rights and note down IP address to manage web space.

iv) Upload the files in properly organized folders on the allocated space.

v) Get domain name mapped to the IP address of the web server.

64. Name an open source web browser.

Ans. Mozilla Firefox is an open source web browser.

65. Write the steps to open Preference and options page in Mozilla Firefox.

Ans. Steps are :

i) Open Mozilla Firefox, and on the top right corner of the browser window, click the Menu button.

ii) From the drop down button, select Options/settings.

iii) The preferences and Options window will be displayed.

66. Write any four panels which are available in preference and option page of Mozilla Firefox.

Ans. Panels available in preference and option page of Mozilla Firefox are :

i) General Panel ii) Home Panel iii) Search Panel

iv) Security and Privacy Panel v) Sync Panel

67. Define the following term:

i) Add-ons ii) plugins

Ans. Add-on is not a complete program and so is used to add only a particular functionality to the browser. An add-on is also referred to as extension in some browsers. Adding the functionality of a sound and graphics card is an example of an add-on.

A plug-in is a complete program or may be a third-party software. For example, Flash and Java are plug-ins. A Flash player is required to play a video in the browser.

68. What is cookie?

Ans. A cookie is a text file, containing a string of information, which is transferred by the website to the browser when we browse it. This string of information gets stored in the form of a text file in the browser.

69. How cookies are helpful?

Ans. It helps in customising the information that will be displayed, for example the choice of language for browsing, allowing the user to auto login, remembering the shopping preference, displaying advertisements of one's interest, etc.

70. Identify me

a. I am a small text file and help in remembering the shopping preference, displaying advertisements of one's interest, etc.

Ans. Cookie

71. Write the full forms:

SSL	IMAP	FTP	WiFi
HTTPs	WAP	VoIP	SMTP

Ans. SSL- Secure Sockets Layer.

IMAP- Internet Message Access Protocol.

FTP- File transfer protocol

WiFi- Wireless Fidelity.

HTTPs- Hyper Text Transfer Protocol Secure.

WAP- Wireless Application Protocol.

VoIP- Voice Over Internet Protocol.

SMTP- Simple Mail Transfer Protocol.

UNIT - II

PROGRAMMING

A. PROGRAMMING FUNDAMENTALS

I. Multiple Choice Questions:

1. What happens if constructor of class A is made private?

(a) Any class can instantiate objects of class A

(b) Objects of class A can be instantiated only within the class where it is declared

(c) Inherited class can instantiate objects of class A

(d) classes within the same package as class A can instantiate objects of class A

2. All the variables of interface should be ?

(a) default and final

(b) default and static

(c) public, static and final

(d) protect, static and final

3. What is true of final class?

(a) Final class cause compilation failure

(b) Final class cannot be instantiated

(c) Final class cause runtime failure

(d) Final class cannot be inherited

4. Which inheritance in java programming is not supported?

(a) Multiple inheritance using classes

(b) Multiple inheritance using interfaces

(c) Multilevel inheritance

(d) Single inheritance

5. What is subclass in java?

(a) Subclass is a class that extends another class

(b) Subclass is a class declared inside a class

(c) Both above

(d) None of the above

6. If class B is sub classed from class A then which is the correct syntax

(a) Class B: A {}

(b) Class B extends A {}

(c) Class B extends class A {}

(d) Class B implements A {}

7. Order of execution of constructors in Java Inheritance is

(a) Base to derived class

(b) Derived to base class

(c) Random order

(d) None

8. Inheritance relationship in Java language is

(a) Association (b) Is-A

(c) Has-A (d) None

9. Advantage of inheritance in java programming is/are

(a) Code Re-usability

(b) Class Extendibility

(c) Save development time

(d) All

10. Which of the following is/are true statements?

(a) A class can extend only one class but can implement many interfaces

(b) An interface can extend many interfaces

(c) An interface can implement another interface

(d) An interface can implement a class

11. Which class cannot be sub classed?

(a) final class (b) object class

(c) abstract class (d) child class

12. Which is/are false statements

(a) final class cannot be inherited

(b) final method can be inherited

(c) final method can be overridden

(d) Final variable of a class cannot be changed.

13. hich cannot be inherited from a base class in Java programming

(a) Constructor (b) final method

(c) Both (d) None

14. Which cannot be inherited from a base class in Java programming?

(a) Cannot override private method of a class

(b) Protected methods are visible to only immediate child class

(c) Public methods of a class are visible to all

(d) All

15. To prevent a class to be inherited / extended, the class should be

(a) final class

(b) abstract class

(c) final and abstract both

(d) none

16. Which of these class is superclass of every class in Java?

(a) String class (b) Object class

(c) Abstract class (d) ArrayList class

17. Which of these method of Object class can clone an object?

(a) ObjectCopy () (b) Copy ()

(c) Objectclone () (d) Clone ()

18. Which of these keywords can be used to prevent inheritance of a class?

(a) Super (b) Constant

(c) Class (d) Final

19. Which of these class relies upon its subclasses for complete implementation of its methods?

(a) Object class

(b) Abstract class

(c) ArrayList class

(d) None of these

20. If a class inheriting an abstract class does not define all of its function then it will be known as?

(a) Abstract Class

(b) Simple Class

(c) Static class

(d) None of these

II. Fill in the blanks

21. Method to compare two strings ignoring the case is _____

22. _____ method converts an entire string to Upper case.

23. _____ Method Removes spaces from both sides of a String.

24. _____ Returns absolute value of the number.

III. Objective Type Questions:

25. What is a method that compares two strings and supports a 3-way comparison?
26. What is a method that compares two strings and supports 2-way comparison?
27. Which method concatenates two strings /Joins two strings?
28. Which Method Returns a character by index position in a string?
29. Method to return part of a string in java.
30. A Method that returns a Boolean value to check a string with specified suffix.
31. What will be the output of the following code.

```
Public static void main (String [] args){
// Integer class wraps a value of the primitive type int in an object
//An object of type Integer contains a single field whose type is int.
int x = 5;
Integer a =x;
System.out.println(a.compareTo(5));//0
System.out.println(a.compareTo(6));//-1
System.out.println(a.compareTo(4));//1
}
```

32. How can a protected modifier be accessed?
33. How many copies of static and class variables are created when 10 objects are created of a class?
34. A class can be declared with a protected modifier. State True/False
35. Which is the modifier when there is none mentioned explicitly?

ANSWER KEYS

1.	(b)	6.	(b)	11.	(a)	16.	(b)
2.	(c)	7.	(a)	12.	(c)	17.	(c)
3.	(d)	8.	(b)	13.	(a)	18.	(d)
4.	(a)	9.	(d)	14.	(d)	19.	(b)
5.	(a)	10.	(A & B)	15.	(a)	20.	(a)

21.	equalsIgoreCase ()	26.	equals()	31.	0, -1, 1
22.	toUpperCase ()	27.	concat()	32.	within package
23.	trim()	28.	charAt()	33.	1,10
24.	abs()	29.	substring()	34.	False
25.	compareTo()	30.	endsWith()	35.	Default

B. HTML BASED WEB PAGE COVERING BASIC TAG

1. Which of the following tag is used for line breaks in the documents?

(a) <p> (b)
(c) <hr> (d) <break>

2. Which of the following tag is used for new paragraph in the documents?

(a) <p> (b)
(c) <hr> (d) <break>

3. Which of the following tag is not an empty tag?

(a) <p> (b)
(c) <hr> (d)

4. Which of the following is not web browser?

(a) Netscape Navigator
(b) Internet Explorer
(c) Mozilla Firefox
(d) Notepad

5. Which of the following tags is used for bold facing the text?

(a)
 (b)
(c) <tt> (d)

6. Which of the image file extension cannot be inserted in the web page?

(a) .pcd (b) .gif
(c) .jpg (d) .jpeg

7. You can insert _____ images in your web pages.

(a) 1 (b) 2
(c) 5 (d) No Limit

8. Which HTML tag would be used to display power in expressionX^n+Y=10?

(a) <sup> (b) <sub>
(c) <b> (d) <p>

9. Choose the correct HTML code to create an email link?

(a)
(b)
(c) <mail>xx@yy.com</mail>
(d) < a mailhref = xx@yy.com>

10. Choose the correct HTML tag for the largest heading?

(a) <h1> (b) <h2>
(c) <h4> (d) <h6>

11. Which of the following is not an attribute of <font> tag

(a) color (b) bgcolor
(c) size (d) face

12. is used to create items of an _____

(a) Ordered list
(b) Unordered list
(c) Neither of a and b
(d) Both a and b

13. An ordered list _____

(a) can be nested in an unordered list
(b) can be nested in another ordered list
(c) starts with <list> tag
(d) ends with tag

14. Which of the following control allows the user to select multiple values?

(a) Menu Control
(b) Checkbox Control
(c) Frame
(d) Radio Button

15. Which of the following is not a form control in HTML?

(a) Checkbox
(b) Radio Box
(c) Submit Button
(d) Reset Button

16. Which tag is used to display a picture on a web page?

(a) picture (b) image
(c) img (d) src

17. Except <b> which other tag is used to make text bold?

(a) (b) <dar>
(c) <black> (d) <bold>

18. Which of the following is not a pair tag?

(a) <p> (b) <u>
(c) <i> (d) <img>

19. To create HTML document you require a

(a) Web page editing software
(b) High powered computer
(c) Notepad
(d) None of these

20. The properties of an HTML element or tag is called

(a) tags (b) attributes
(c) values (d) None of these

21. HTML documents are saved in

(a) binary format
(b) machine language
(c) ASCII text
(d) None of these

22. The tags which encloses text inside it are

(a) couple tags (b) single tags
(c) double tags (d) paired tags

II. Fill in the blanks

23. In the <hr> tag hr stands for _____.

24. Tags and text that are not directly displayed on the page are written in _____ section.

25. Which tag is used to insert a horizontal line in a web page?

26. _____ is the first tag in an HTML document?

27. _____ is used to create ordered and unordered list or bulleted list.

28. Bulleted list is known by another name which is _____

29. The application software required to view and explore web pages is called _____.

30. A simple word processor is called _____. Text Editor

31. Google Chrome is a _____. Web Browser

32. Notepad is a _____. Text editor

33. Special formatted text or commands in HTML is called _____. Tags/ Elements

III. Objective Type Questions:

34. What does "vlink" attribute mean?
35. What is used to link various web pages?
36. Which tag contains both opening and closing tag? Paired tag
37. Which tag contains only opening tag? Singular tag
38. Which tag contains the information about a web page? <title>
39. What is the maximum no. of characters supported in HTML title? 64
40. Which tag in HTML displays heading? <h1>…<h6>
41. Which tag in HTML is used to create italic font? <i>
42. Which tag in HTML is used to create type letter font? <tt>
43. Which tag in HTML is used to represent text with horizontal stinking text?<strike>
44. Which tag in HTML is used to scroll text on a web page?<marquee>
45. How many types of heading tags are there? 6
46. What represents the smallest heading tag?<h6>
47. What represents the largest heading tag? <h1>
48. Which tag is used to create a line break?

ANSWER KEYS

1.	(b)	13.	(a & b)	25.	<hr>	37.	Singular tag
2.	(a)	14.	(b)	26.	<html>	38.	<title>
3.	(a)	15.	(d)	27.		39.	64
4.	(d)	16.	(c)	28.	Unordered list	40.	<h1>…<h6>
5.	(b)	17.	(a)	29.	Web Browser	41.	<i>
6.	(a)	18.	(d)	30.	Text editor	42.	<tt>
7.	(d)	19.	(c)	31.	Web Browser	43.	<strike>
8.	(a)	20.	(b)	32.	Text Editor	44.	<marquee>
9.	(b)	21.	(c)	33.	Tags/elements	45.	6
10.	(d)	22.	(d)	34.	Visited Link	46.	<h6>
11.	(b)	23.	Horizontal Rule	35.	<href>	47.	<h1>
12.	(d)	24.	Title	36.	Paired tags	48.	

UNIT - III

RELATIONAL DATABASE MANAGEMENT SYSTEM

A. DATABASE FUNDAMENTALS

I. Multiple Choice Questions:

1. Which of the following is generally used for performing tasks like creating the structure of the relations, deleting relation?

(a) DML (Data Manipulation Language)
(b) Query
(c) Relational Schema
(d) DDL (Data Definition Language)

2. Which of the following provides the ability to query information from the database and insert tuples into, delete tuples from, and modify tuples in the database?

(a) DML(Data Manipulation Language)
(b) DDL(Data Definition Language)
(c) Query
(d) Relational Schema

3. What do you mean by one to many relationships?

(a) One class may have many teachers
(b) One teacher can have many classes
(c) Many classes may have many teachers
(d) Many teachers may have many classes

4. A Database Management System is a type of _____ software.

(a) It is a type of system software
(b) It is a kind of application software
(c) It is a kind of general software
(d) Both A and C

5. Which of the following can be used to extract or filter the data & information from the data warehouse?

(a) Data redundancy
(b) Data recovery tool
(c) Data mining
(d) Both B and C

6. Which one of the following refers to the copies of the same data (or information) occupying the memory space at multiple places.

(a) Data Repository
(b) Data Inconsistency
(c) Data Mining
(d) Data Redundancy

7. Which one of the following refers to the "data about data"?

(a) Directory (b) Sub Data
(c) Warehouse (d) Meta Data

8. Which of the following refers to the level of data abstraction that describes exactly how the data actually stored?

(a) Conceptual Level
(b) Physical Level
(c) File Level
(d) Logical Level

9. Which of the following refers to the number of tuples in a relation?

(a) Entity (b) Column
(c) Cardinality (d) None of the above

10. Which one of the following is a type of Data Manipulation Command?

(a) Create (b) Alter

(c) Delete (d) All of the above

11. Which of the following command is a type of Data Definition language command?

(a) Create (b) Update

(c) Delete (d) Merge

12. Which of the following is used to denote the selection operation in relational algebra?

(a) Pi (Greek)

(b) Sigma (Greek)

(c) Lambda (Greek)

(d) Omega (Greek)

13. The _____ operation, denoted by ?, allows us to find tuples that are in one relation but are not in another.

(a) Union (b) Set-difference

(c) Difference (d) Intersection

II. Fill in the blanks

14. A huge collection of the information or data accumulated form several different sources is known as _____.

15. Rows of a relation are known as the _____.

16. What displays the unique values of the column?

SELECT ____ dept_name FROM instructor;

17. The _____ clause allows us to select only those rows in the result relation satisfy a specified predicate.

III. Objective Type Questions:

18. What is a unary operation?

19. Which is a join condition containing an equality operator.

20. What is used to sort the result of query according to an attribute?

ANSWER KEYS

1. (d)
2. (a)
3. (b)
4. (b)
5. (c)
6. (d)
7. (d)
8. (b)
9. (a)
10. (c)
11. (a)
12. (a)
13. (c)
14. Data warehouse
15. Tuples
16. DISTINCT
17. WHERE
18. One operand
19. Equijoin
20. Order by

B. INTRODUCTION TO MYSQL

1. In precedence of set operators, the expression is evaluated from

(a) Left to left

(b) Left to right

(c) Right to left

(d) From user specification

2. Which of the following is not outer join?

(a) Left outer join

(b) Right outer join

(c) Full outer join

(d) None of these

3. The System which schedules the inputs and outputs of the disk in database is classified as

(a) Operating system

(b) Host system

(c) Client system

(d) Structured system

4. The program interface which provides the feature to client side programs to call the DBMS is classified as

(a) Open programming interface

(b) Closed programming interface

(c) Application programming interface

(d) Data programming language

5. In DBMS, the description of database in the form of schema is also called

(a) Extension of schema

(b) Intension of schema

(c) Mathematical operators of schema

(d) Logical operators of schema

6. Which of the following can add a row to a table?

(a) Alter

(b) Add

(c) Insert

(d) Commit

7. Which of these commands will delete a table called XXX if you have appropriate authority?

(a) DROP XXX

(b) DROP TABLE XXX

(c) DELETE XXX

(d) DELETE TABLE XXX

8. Which of the following is not available in MySQL?

(a) REVOKE

(b) FETCH

(c) LIKE

(d) JOIN

9. Which keyword is the synonym for DATABASE?

(a) TABLE (b) OBJECT

(c) DB (d) SCHEMA

10. What is abc in the following SQL statement?

DELETEFROM xyz WHEREabc=5;

(a) column name

(b) table name

(c) row name

(d) database name

11. What is the value of val2 in the following MySQL statement?

UPDATE t SET val1=val1+2, val2 = val1;

(a) previous val1 (b) updated val1

(c) unchanged (d) val1 + 1

12. Which keyword is used to delete all the rows from the table?

(a) TRUNCATE (b) REMOVE

(c) DELETE ALL(d) CLEAR

II. Objective Type Questions:

13. The facility that allows nesting one select statement into another is called _____.

14. The assignment operator is denoted by which symbol?

15. What is called the graphical representation of database description?

16. If you want to undo a GRANT, you should use what?

17. What are the differences between DESCRIBE and SHOW FIEEDS FROM commands?

18. What statement is used to select a default database?

19. To create a database only if it doesn't already exist, which clause is used?

20. Which keyword in the UPDATE statement is used to assign values to columns?

ANSWER KEYS

1.	(c)	6.	(c)	11.	(b)	16.	Revoke
2.	(d)	7.	(b)	12.	(a)	17.	Use
3.	(a)	8.	(b)	13.	SubQuerying	18.	
4.	(c)	9.	(d)	14.	=	19.	If Not Exists
5.	(a)	10.	(a)	15.	Schema Diagram	20.	Set

UNIT - IV

IT APPLICATIONS

E-BUSINESS

I. Multiple Choice Questions:

1. An error in computer data is called

(a) Storage devices (b) CPU

(c) Chip (d) Bug

2. Which hole is used to mark the location of the first sector in a soft sectored disk?

(a) Address (b) Index

(c) Label (d) Location

3. A microprocessor chip used in a PC system

(a) Almost always operates on by-bits of data at a time

(b) Is the only chip found in most pc models?

(c) Performs the arithmetic -logic and control functions

(d) None of the above

4. World Wide Web

(a) a collection of world-wide information

(b) a collection of linked information residing on computers connected by the Internet

(c) world-wide connection for computers

(d) is another name for internet

5. Which of the following describes E-commerce?

(a) Doing Business electronically

(b) Doing business

(c) Sale of Goods

d) All of the Above

6. Which of the following is not one of the major types of E-commerce?

(a) C2B (b) B2C

(c) B2B (d) C2C

7. Which of the following is not considered to be one of the three phases of E-commerce?

(a) Innovation (b) Consolidation

(c) Preservation (d) Reinvention

8. Which Segment do eBay, Amazon.com belongs?

(a) B2Bs (b) B2Cs

(c) C2Bs (d) C2Cs

9. Which type of e-commerce focuses on consumers dealing with each other?

(a) B2Bs (b) B2Cs

(c) C2Bs (d) C2Cs

10. The Best products to sell in B2C e-commerce are:

(a) Small products

(b) Digital products

(c) Speciality products

(d) Fresh products

11. Which of the following is not a key element of a business model?

(a) Value proposition

(b) Competitive advantage

(c) Market strategy

(d) Universal standard

12. Which of the following is not a limitation of the current market?

(a) Insufficient capacity through out the backbone

(b) Network architecture limitations

(c) Insufficient reach

(d) Best efforts QAS

13. Which of the following is a new and disruptive Web feature or service?

(a) XML (b) diffserv

(c) blogs (d) CDMA

14. Which of the following is a useful security mechanism when considering business strategy and IT?

(a) Encryption (b) Decryption

(c) Firewall (d) All of the above

15. Which of the following statement accurately reflect the impact of technology?

(a) Technology has caused buyer power to increase

(b) Technology has lessened the entry barriers for many industries

(c) Technology has increased the threat of substitute products and services

(d) All of the above

16. How the transactions occur in e-commerce

(a) Using e-medias

(b) Using computers only

(c) Using mobile phones only

(d) None of the above

17. Which type of products is lesser purchased using e-commerce?

(a) Automobiles (b) Software

(c) Books (d) none

18. All of the following are factors in optimizing Web Site performance except _____.

(a) Page retrieval

(b) Page generation

(c) Page delivery

(d) Page content

19. A business competing in a commodity like environment must focus on which of the following?

(a) Price

(b) Ease/speed of delivery

(c) Ease of ordering

(d) All of the above

20. A strategy designed to compete in all markets around the globe is called a _____ strategy.

(a) Scope

(b) Differentiation

(c) Cost

(d) Focus

21. Which of the following is not one of the stages of the development of the internet?

(a) Innovation

(b) Institutionalization

(c) Globalization

(d) Commercialization

22. Which protocols permits users to transfer the files from server to their client computer and vice versa?

(a) HTTP (b) SMTP

(c) IMFP (d) FTP

23. _____ is a program that you can run in windows operating system in order to check the connection between your client and server.

(a) Ping (b) Telnet

(c) SSL (d) All of the above

24. Which of the following is not a limitation of the current internet?

(a) Insufficient capacity throughout the backbone

(b) Network architecture limitations

(c) Insufficient reach

(d) Best efforts QOS.

25. Which of the following was the first commercial web browser?

(a) Mosaic

(b) Mozilla

(c) Netscape Navigator

(d) Internet Explorer

26. A _____ describes the flow of information at your e-commerce site and your infrastructure that will be used in the system

(a) System Design

(b) Logical Design

(c) Tactical Design

(d) Physical Design

27. All of the following are factors in optimizing web site performance except

(a) Page retrieval

(b) Page generation

(c) Page delivery

(d) Page Content

28. The largest component in Web Site budget is _____

(a) System maintenance

(b) System development

(c) Content design and development

(d) Telecommunication

29. Which of the following measures the percentage of people exposed to an online advertisement who actually click on the banner?

(a) Impression rate

(b) View through rate

(c) Click through rate

(d) Stickiness ration

II. Fill in the blanks

30. Computers that are portable and convenient for users who travel are known as _____.

31. If a user needs information instantly available to the CPU, It should be stored in _____ .

32. The dimension of e commerce that enables commerce across national boundaries is called _____

33. The primary source of financing during the early years of e-commerce was _____.

34. All of the following are technologies used to gather information about you online except _____.

35. A ___ is a set of plan activities designed to result in a profit in a marketplace.

36. The area of actual or potential commercial; value in which a company intends to operate is a _____.

37. A perfect market is one in which _____.

38. Broadband is generally considered to be any communication technology allowing streaming audio and video at or above _____.

39. The threat of new entrant is high when it is _____.

40. A _____ describes the flow of information at your e-commerce site and the infrastructure that will be used in the system.

41. A situation where there are no differences among products and services, and the only basis of choosing product is price is known as _____.

III. Objective Type Questions:

42. Which term represents a count of the number of people who visit one site, click on an ad, and are taken to the site of the advertiser?

43. What is the percentage of customers who visit a web site and actually buy something called?

44. LISP is suitable for which operations?

45. What is the idealistic market envisioned at the outset of the development of e-commerce?

ANSWER KEYS

1. (d)
2. (b)
3. (c)
4. (b)
5. (a)
6. (a)
7. (c)
8. (b)
9. (d)
10. (b)
11. (d)
12. (c)
13. (c)
14. (d)
15. (d)
16. (a)
17. (a)
18. (a)
19. (d)
20. (a)
21. (c)
22. (d)
23. (a)
24. (c)
25. (c)
26. (b)
27. (a)
28. (a)
29. (c)
30. Laptops
31. In the CPU
32. Global reach
33. Ventura Capital Fund
34. Anonymizers
35. Business model
36. Market space
37. No competitive advantage
38. 100 kbps
39. Easy for competitor to enter the market
40. Logical design
41. Commoditization
42. Click through
43. Conversion rate
44. Arithmetic & Numeric
45. Bertrand market

PRACTICE SET
E-BUSINESS

I. Multiple Choice Questions:

1. **On-line selling and buying of products is categorizes as**
   a) e-Commerce b) e-Business
   c) e-Store d) None of these
2. **Which of the following process comes under Electronic Document Interchange?**
   a) Electronic Fund Transfer
   b) Electronic Publishing
   c) Electronic Messaging
   d) Corporate Digital Library
3. **Open Source electronic Commerce comes under**
   a) Licensing Model
   b) Business Model
   c) Data Exchange Model
   d) None of these
4. **Business to Business electronic Commerce comes under**
   a) Licensing Model
   b) Business Model
   c) Data Exchange Model
   d) None of these
5. **Interfaced electronic Commerce comes under**
   a) Licensing Model
   b) Business Model
   c) Data Exchange Model
   d) None of these
6. **Which of the following is a Government of India website?**
   a) omfed.in b) boyanika.com
   c) chilikafresh.in d) gem.gov.in
7. **Which of the following is the largest e-Commerce player of India?**
   a) Amazon.in b) Snapdeal.com
   c) e-bay.in d) Flipkart.com
8. **Which of the following e-Commerce site does not sell electronics products?**
   a. Shopclues.com
   b. Shopping.indiatimes.com
   c. Myntra.com
   d. None of these
9. **Which of the of the following Public Sector Unit has the largest online commercial transactions in India?**
   a. Bharat Sanchar Nigam Limited
   b. National Thermal Power Corporation
   c. Indian Railways Catering & Tourism Corporation
   d. Bharat Heavy Electronics Limited
10. **Which of the following site deals with Customer to Customer e- Commerce?**
    a. Amazon. In
    b. Homeshop18.com
    c. e-bay.in
    d. Flipkart.com

LONG ANSWER TYPE QUESTIONS:

1. What is an electronic business; how does it differ from electronic commerce?
2. Define electronic commerce. Describe different types of e-Commerce.
3. Discuss some features of e-Business.
4. Discuss the social impacts of e-Business..
5. What are the challenges of electronic business in Indian context?
6. Discuss at least four public organization of Odisha doing their transactions on-line.

UNIT - IV

IT APPLICATIONS

[FRONT-END INTERFACE, FRONT-END & DATABASE CONNECTIVITY & BACK - END DATABASE]

1. Very Short answer type questions:

a) What controls would you suggest for following types of inputs?

(i) Typed text (single line)

(ii) Typed text (multiple lines)

(iii) A Mouse click

(iv) One out of many choices

(v) Multiple choices from a set

(vi) Typed text which should remain hidden (encrypted form).

Ans. (i) Text Field control

(ii) Text Area control

(iii) Button control

(iv) Combo Box control (If the number of options is small, then Radio Buttons can be used. In case of large number of options, use Combo Box)

(v) Check Box control

(vi) Password control

(b) How is a back-end linked to a database and server?

Ans. The back end interacts with the user through a response request cycle between the browser and the server. These servers have databases that store data vital to user experience and systems security.

(c) What is JDBC?

Ans. JDBC stands for Java Database Connectivity. JDBC is a Java API to connect and execute the query with the database.

2. Short answer type question

(a) Write one point of difference between front-end and back-end with one example of each.

Ans. The visual aspects of the website that can be seen and experienced by users are frontend. On the other hand, everything that happens in the background can be attributed to the backend. Languages used for the front end are HTML, CSS, JavaScript while those used for the backend include Java, Ruby, Python, .Net

(b) Which component should be used by a user, if he wants to insert the username in an application form?

Ans. Text field component

(c) Which component should be used to submit an application form, which is a user fill?

Ans. Button component should be used to submit an application form, which is a user fill?

(d) A user is developing an application form, which component should he/she use for the address part to enter?

Ans. Text Area Component

(e) Is it possible to connect more than one database at the same time in same application? Name some databases which are supported by Java.

Ans. Yes, it is possible to connect more than one database at the same time in same application.

You can use any relational database that has a JDBC driver. These would include PostgreSQL, Hypersonic SQL, MySQL, SQLLite on the free side and Oracle, MS SQL Server, and others on the paid side.

(f) Database of an application has been damaged. How does it affect your application?

Ans. If one part of the database is corrupted or damaged because of the hardware or software failure, since we don't have many versions of the file, all the application programs which are dependent on this database are implicitly affected.

(g) Subrat Chand is working on DBMS and same time database has been crashed. Which subsystem of DBMS is used for recovery database?

Ans. The Database Recovery subsystem supports recovery and the Durability (the "D" in ACID) property to ensure data can never be lost.

(h) Which type of relation is existed among patients and doctor?

Ans. The Doctor and Patient entity have a one-to-many relationship as a Doctor may treat more than one patient.

(i) Which steps of DDLC is responsible for producing model of client world view not real world.

Ans. Database Design steps of DDLC used for conceptual design is Entity Relationship Model (ER Model). Model produced at this stage is of client world view not real world.

3. Write the full form:

(a) CLI

(b) ODBC

(c) JDBC

(d) GUI

(e) AWT

(f) E-R model

(g) DDLC

Ans. (a) CLI: Command line Interface

(b) ODBC : Open Database Connectivity

(c) JDBC: Java Database Connectivity

(d) GUI : Graphical User Interface

(e) AWT: Abstract Window Toolkit

(f) E-R model : Entity-Relationship model

(g) DDLC : Database Development Life Cycle

4. Long answer type question

(a) Briefly explain Database Development Life Cycle.

(b) Explain ENTITY RELATIONSHIP MODEL.

(c) What is E-R diagram? Explain the symbols used in E-R diagram.

(d) Define what is meant by an entity, attributes entity set and relationship.

PAPER - II

UNIT - I

NETWORKING & OPEN STANDARDS

OBJECTIVE QUESTIONS:

1. Write the name of three network topologies.
2. What is the need for internet protocols?
3. Explain the uses of TCP/IP, HTTP and FTP.
4. Expand the following: (a) LAN (b) IAN (c) DSC (d) FTP
5. What is firewall?
6. What is gateway?
7. Write two advantages of networks.
8. What is TELNET?
9. What are the various types of networks?
10. What is CDMA?
11. What is a link?
12. Define a network.
13. What is communication channel?
14. What is IP address?
15. What is domain name?
16. What is the difference between MAN and WAN?
17. What is meant by Topology?
18. What are the similarities and differences between bus and tree topologies?
19. What are the layers of the OSI reference model?
20. What is a node?
21. What are routers?
22. What is point to point link?
23. What is subnet mask?
24. What is the job of the Network Layer under the OSI reference model?
25. What is a way of Securing a Computer Network?
26. What is NIC?
27. What is the importance of the OSI Physical Layer?
28. How many layers are there under TCP/IP?
29. What are proxy servers and how do they protect computer networks?
30. What is the function of the OSI Session Layer?
31. What is a private IP address?
32. What is NOS?
33. What is OSI and what role does it play in computer networks?
34. Define Simplex transmission mode.
35. Define Half Duplex transmission mode.
36. Define Full Duplex transmission mode.
37. What is DNS?
38. What is ISP?
39. What is ISDN?
40. What is Telnet?
41. What is Virus?
42. What is Cookies?

43. What is malicious software?
44. What is Hacking?
45. What is Digital Signature?
46. What is Snooping?
47. What is Cyber Crime?
48. What is Cyber law?

SUBJECTIVE QUESTIONS:

1. What is meant by Topology? Describe some popular topologies.
2. Describe the layers of the OSI reference model?
3. What is Web Server? Give Examples.
4. What are importance of Cyber law

ANSWER KEYS

OBJECTIVE QUESTIONS:

1. Star, Bus, Mesh
2. The Internet Protocol (IP) is the protocol by which data is sent from one computer to another on the Internet.
3. Transmission Control Protocol/Internet Protocol (TCP/IP) is a suite of communication protocols used to interconnect network devices on the internet. The Hypertext Transfer Protocol (HTTP) is an application protocol for distributed, collaborative, hypermedia information systems. The Hypertext Transfer Protocol (HTTP) is an application protocol for distributed, collaborative, hypermedia information systems.
4. (a) LAN : Local Area Network
   (b) IAN : Internet Area Network
   (c) DSC: Digital Signature Certificate
   (d) FTP: File Transfer Protocol
5. 5. A firewall is a network security device that monitors incoming and outgoing network traffic and permits or blocks data packets based on a set of security rules.
6. A gateway is a network node that connects two networks using different protocols together. While a bridge is used to join two similar types of networks, a gateway is used to join two dissimilar networks.
7. Advantages: i. Data or information can be shared among the users. ii. Fast communication can be achieved.
8. Telnet is a protocol used on the Internet or local area network to provide a bidirectional interactive text-oriented communication facility using a virtual terminal connection.
9. Network can be classified on the basis of their size, complexity and geographical spread. On the basis of geographical spread it can be classified as Local Area Network, Metropolitan Area Network and Wide Area Network.
10. Code Division Multiple Access (CDMA) is a channel access method used by various radio communication technologies. CDMA is an example of multiple access, where several transmitters can send information

simultaneously over a single communication channel. CDMA is used as the access method in many mobile phone standards.

11. A link refers to the connectivity between two devices. It includes the type of cables and protocols used in order for one device to be able to communicate with the other.

12. A computer network is a system in which computers are connected to share information and resources.

13. Communication channels mean the connecting cables that link various workstations.

14. A unique number consisting of 4 parts separated by dots, e.g. 165.113.245.2. Every machine that is on the Internet has a unique IP number - if a machine does not have an IP number, it is not really on the Internet.

15. The unique name that identifies an Internet site. Domain Names always have 2 or more parts, separated by dots. The part on the left is the most specific, and the part on the right is the most general. E.g.: matisse.net

16. A metropolitan area network (MAN) is a large computer network that usually spans a city or a large campus. WAN is a network that covers an area larger than a single building or campus such as across the cities or countries.

17. Network topology is defined as the interconnection of the various elements (links, nodes, etc.) of a computer network. In computer networking, topology refers to the layout of connected devices. A) Bus topology b) Star topology c) Ring topology d) Tree topology e) Mesh topology

18. In bus topology each machine is connected to a single cable. Each computer or server is connected to the single bus cable through some kind of connector. Tree topology is a network with the shape of an inverted tree in which a single link between two nodes.

19. There are 7 OSI layers: Physical Layer, Data Link Layer, Network Layer, Transport Layer, Session Layer, Presentation Layer and Application Layer.

20. A node refers to a point or joint where a connection takes place. It can be computer or device that is part of a network. Two or more nodes are needed in order to form a network connection.

21. Routers can connect two or more network segments. These are intelligent network devices that store information in its routing table such as paths, hops and bottlenecks. With this info, they are able to determine the best path for data transfer. Routers operate at the OSI Network Layer.

22. It refers to a direct connection between two computers on a network. A point to point connection does not need any other network devices other than connecting a cable to the NIC cards of both computers.

23. A subnet mask is combined with an IP address in order to identify two parts: the extended network address and the host address. Like an IP address, a subnet mask is made up of 32 bits.

24. The Network layer is responsible for data routing, packet switching and control of network congestion. Routers operate under this layer.

25. Good passwords are made up of not just letters, but by combining letters and numbers. A password that combines uppercase and lowercase letters is favorable than one that uses all upper case or all lower case letters. Passwords must be not words that can easily be guessed by hackers, such as dates, names, favorites, etc. Longer passwords are also better than short ones.

26. NIC is short for Network Interface Card. This is a peripheral card that is attached to a PC in order to connect to a network. Every NIC has its own MAC address that identifies the PC on the network.

27. The physical layer does the conversion from data bits to electrical signal, and vice versa. This is where network devices and cable types are considered and setup.

28. There are four layers: the Network Layer, Internet Layer, Transport Layer and Application Layer.

29. Proxy servers primarily prevent external users who identifying the IP addresses of an internal network. Without knowledge of the correct IP address, even the physical location of the network cannot be identified. Proxy servers can make a network virtually invisible to external users.

30. This layer provides the protocols and means for two devices on the network to communicate with each other by holding a session. This includes setting up the session, managing information exchange during the session, and tear-down process upon termination of the session.

31. Private IP addresses are assigned for use on intranets. These addresses are used for internal networks and are not routable on external public networks. These ensures that no conflicts are present among internal networks while at the same time the same range of private IP addresses are reusable for multiple intranets since they do not "see" each other.

32. Network Operating System (NOS), is specialized software whose main task is to provide network connectivity to a computer in order for it to be able to communicate with other computers and connected devices.

33. OSI (Open Systems Interconnect) serves as a reference model for data communication. It is made up of 7 layers, with each layer defining a particular aspect on how network devices connect and communicate with one another. One layer may deal with the physical media used, while another layer dictates how data is actually transmitted across the network.

34. In Simplex mode, the communication is unidirectional, as on a one-way street.

35. Half-duplex transmission mode of data in just one direction at a time. For example, a walkie talkie.

36. Full-duplex data transmission means that data can be transmitted in both directions on a signal carrier at the same time. For example, on a local area network with a

technology that has full-duplex transmission, one workstation can be sending data on the line while another workstation is receiving data.

37. DNS is Domain Name System. The main function of this network service is to provide host names to TCP/IP address resolution.

38. An Internet Service Provider (ISP) is an organization that provides services for accessing, using, or participating in the Internet.

39. Integrated Services Digital Network (ISDN) is a set of communication standards for simultaneous digital transmission of voice, video, data, and other network services over the traditional circuits of the public switched telephone network.

40. Telnet is a protocol used on the Internet or local area network to provide a bidirectional interactive text-oriented communication facility using a virtual terminal connection.

41. A computer virus is a type of malicious software that, when executed, replicates itself by modifying other computer programs and inserting its own code.

42. Cookies are small files which are stored on a user's computer. They are designed to hold a modest amount of data specific to a particular client and website, and can be accessed either by the web server or the client computer.

43. Malicious Software refers to any malicious program that causes harm to a computer system or network. Malicious Software attacks a computer or network in the form of viruses, worms, trojans, spyware.

44. Hacking generally refers to unauthorized intrusion into a computer or a network. The person engaged in hacking activities is known as a hacker.

45. A digital signature is a mathematical scheme for verifying the authenticity of digital messages or documents.

46. Snooping, in a security context, is unauthorized access to another person's or company's data.

47. Cyber-crime is any criminal activity that involves a computer, networked device or a network.

48. Cyber law is the part of the overall legal system that deals with the Internet and cyberspace.

SUBJECTIVE QUESTIONS:

1. Representation of Computer Networks in different structures.
2. OSI reference model description
3. A designated high performance system to host web pages.
4. Cyber law is important because it touches almost all aspects of transactions and activities on and concerning the Internet, the World Wide Web and Cyberspace.

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UNIT - II

PROGRAMMING

OBJECTIVE QUESTIONS :

1. What is an access specifier?
2. Mention different types of access specifiers.
3. Write the use of substring ( ) function with an example.
4. Distinguish between static and dynamic pages in a website.
5. Distinguish between LCASE ( ) and UCASE ( ).
6. Distinguish between RIGHT ( ) and RTRIM ( ) functions with example.
7. What is HTML?
8. What are Tags?
9. Do all HTML tags have an end tag?
10. How many types of heading does an HTML contain?
11. How to create a hyperlink in HTML?
12. Which HTML tag is used to display the data in the tabular form?
13. What are some common lists that are used when designing a page?
14. What is the difference between HTML elements and tags?
15. Does a hyperlink only apply to text?
16. What is a marquee?
17. How to make a picture of a background image of a web page?

SUBJECTIVE QUESTIONS:

1. Explain the use of five commonly used tags in an HTML document.
2. What is meant by Access Modifier? Describe the uses of different Access Modifiers of Java with examples
3. What are the difference types of inheritance in java?

ANSWER KEYS

OBJECTIVE QUESTIONS:

1. Access specifiers are keywords in objectoriented languages that set the accessibility of classes, methods, and other members.
2. Access specifiers are keywords in object-oriented languages that set the accessibility of classes, methods, and other members. Types of access specifiers: In java we have 4 Access specifiers and they are as follows: 1. Public, 2. Private, 3. Protected 4. Default (no specifier).

Public access specifier: The public access specifier is accessible everywhere. It has the widest scope among all other modifiers.

Private access specifier: The private access specifier is accessible only within class.

Protected access specifier: The protected access specifier is accessible within package and outside the package but through inheritance only.

Default access specifier: If you don't use any specifier, it is treated as default. The default modifier is accessible only within package.

3. The substring () function extracts a substring from a string (starting at any position).

   Syntax: substring (string, start, length)

   Ex- Select substring ('hello', 2, 3);

   Output: llo

4. **Static Pages**

   (i) Static web pages have fixed content

   (ii) Static web pages have to be manually changed

   (iii) Static web pages use only a web server

   Dynamic Pages

   (i) Dynamic web pages may have changing content

   (ii0 Changes to a dynamic page can be loaded through an application where resources are stored in a database.

   (iii) Dynamic web pages use a web server, application server, and a database.

5. LCASE ( )

   LCASE () converts the characters of a string to lower case characters.

   Syntax: LCASE (string)

   Ex- LCASE ('HELLO')

   Output: hello

   UCASE ( )

   UCASE () coverts all the characters of a string to uppercase.

   Syntax: UCASE (string)

   Ex- UCASE ('hello')

   Output: HELLO

6. The RIGHT () function extracts a number of characters from a string (starting from right).

   Syntax:- RIGHT (string, number_of_chars)

   Example: RIGHT ('hello',3);

   Output: llo

   The RTRIM () function removes trailing spaces from a string.

   Syntax: - RTRIM (string)

   Example: RTRIM ('hello ');

   Output: hello

7. HTML stands for Hyper Text Markup Language. It is a language of World Wide Web. It is a standard text formatting language which is used to create and display pages on the Web. It makes the text more interactive and dynamic. It can turn text into images, tables, and links.

8. Tags are the hidden keywords within a web page that define how your web browser must format and display the content.

9. No. There are some HTML tags that don't need a closing tag. For example: <img> tag, <br> tag

10. The HTML contains six types of headings which are defined with the <h1> to<h6>tags. Each type of heading tag displays different text size from another. So,<h1>is the largest heading tag and <h6>is the smallest one. For example:

    <h1>Heading no. 1

    <h2>Heading no. 2

    <h3>Heading no. 3

    <h4>Heading no. 4

    <h5>Heading no. 5

    <h6>Heading no. 6

11. The HTML provides an anchor tag to create a hyperlink that links one page to another page. These tags can appear in any of the following ways: 1. Unvisited link - It is displayed, underlined and blue. 2. Visited link - It is displayed, underlined and purple. 3. Active link - It is displayed, underlined and red.

12. The HTML table tag is used to display data in tabular form (row * column).

13. There are many common lists which are used to design a page. You can choose any or a combination of the following list types:

    (i) Ordered list - The ordered list displays elements in numbered format. It is represented by tag.

    (ii) Unordered list - The unordered list displays elements in bulleted format. It is represented by tag.

14. HTML elements communicate to the browser to render text. When the elements are enclosed by brackets <>, they form HTML tags. Most of the time, tags come in a pair and surround content.

15. No, you can use hyperlinks on text and images both. The HTML anchor tag defines a hyperlink that links one page to another page. The "href" attribute is the most important attribute of the HTML anchor tag.

16. Marquee is used to put the scrolling text on a web page. It scrolls the image or text up, down, left or right automatically. You should put the text which you want to scroll within the <marquee>…</ marquee> tag.

17. To make a picture a background image on a web page, you should put the following tag code after the </head>tag. <body background= "image.gif">

    Here, replace the "image.gif" with the name of your image file which you want to display on your web page.

SUBJECTIVE QUESTIONS:

1. Use of five commonly used tags in an HTML document:

   (i) HTML tag: It is the root of the html document which is used to specify that the document is html. Syntax: <html>Statements...</html>

   (ii) Head tag: Head tag is used to contain all the head element in the html file. It contains the title, style, meta … etc tag Syntax: <head>Statements……..</head>

   (iii) Body tag: It is used to define the body of html document. It contains image, tables, lists, … etc. Syntax: <body>Statements…….</body>

   (iv) Title tag: It is used to define the title of html document. Syntax:<title>Statements... </title>

   (v) Paragraph tag: It is used to define paragraph content in html document.

   Syntax: Statements….

2. Access modifiers are the keywords which are used with classes, variables, methods and constructors to control their level of access. Java has four access modifiers:

   a. Default: When no access modifier is specified, it is treated as default modifier. Its scope is limited within the package.

   b. Public: The word itself indicates that it has scope everywhere, i.e.; it is visible everywhere even outside the package.

   c. Private: It has scope only within the class

   d. Protected: Its scope limits within the package and all sub classes.

3. Single Inheritance, Multilevel Inheritance, Hierarchical Inheritance, Hybrid Inheritance

UNIT - III

RELATIONAL DATABASE MANAGEMENT SYSTEM

OBJECTIVE QUESTIONS

1. Does SQL support programming?
2. What are the languages used in SQL?
3. What is a Data Definition Language (DDL)?
4. What is a Data Manipulation Language (DML)?
5. What is Data Control Language (DCL)?
6. What do you mean by a Database Management System?
7. What is RDBMS?
8. What is primary key?
9. What is a foreign key?
10. What is null value in MySql?
11. Which keyword eliminates redundant data in from a query result?
12. How would you display system date as the result of a query?
13. What is NOT NULL constraint?
14. What is error in following statement? UPDATE EMPL;
15. Identify the error? DELETE ALL FROM TABLE EMP;
16. Differentiate WHERE and HAVING clause?
17. How SQL commands are classified?
18. What are the two ways in which multiple transactions can be executed?
19. What is a save point?
20. Why do understand by transaction COMMIT and ROLLBACK?
21. What are the properties of database transaction?
22. What TCL commands are supported by SQL?
23. Write the use of ORDER BY CLAUSE.

SUBJECTIVE QUESTIONS:

1. What is a database transaction? What is meant by committing and revoking a transaction? How are they achieved using COMMIT and ROLLBACK statements?
2. What are the four significant subsets of SQL?

ANSWER KEYS

OBJECTIVE QUESTIONS:

1. SQL refers to the Standard Query Language, which is not actually the programming language. SQL doesn't have a loop, Conditional statement, logical operations, it cannot be used for anything other than data manipulation. It is used like commanding (Query) language to access databases. The primary purpose of SQL is to retrieve, manipulate, update and perform complex operations like joins on the data present in the database.
2. DDL, DML, DCL, TCL
3. Data definition language (DDL) is the subset of the database which defines the data structure of the database in the

initial stage when the database is about to be created. It consists of the following commands: CREATE, ALTER and DELETE database objects such as schema, tables, view, sequence, etc.

4. Data manipulation language makes the user able to retrieve and manipulate data. It is used to perform the following operations.
   (a) Insert data into database through INSERT command.
   (b) Retrieve data from the database through SELECT command.
   (c) Update data in the database through UPDATE command.
   (d) Delete data from the database through DELETE command.
5. Data control language allows you to control access to the database. DCL is the only subset of the database which decides that what part of the database should be accessed by which user at what point of time. It includes two commands GRANT and REVOKE.

   GRANT: to grant the specific user to perform a particular task.

   REVOKE: to cancel previously denied or granted permissions.
6. Database Management is a collection of programs and files that allow a user to define structure of a database, store data into it, modify the structure and manipulate the data.
7. RDBMS stands for Relational Database Management System. It is a database management system based on a relational model. RDBMS stores the data into the collection of tables and links those tables using the relational operators easily whenever required. It facilitates you to manipulate the data stored in the tables by using relational operators. Examples of the relational database management system are Microsoft Access, MySQL, SQLServer, Oracle database, etc.
8. Primary key is a unique key in a relation which can uniquely identifies a tuple (row) in a given Relation.
9. If a key is available in a table as a primary key then this key is called foreign key in another table.
10. If a column in a row has no value, then column is said to be null.
11. DISTINCT
12. GETDATE()
13. NOT NULL constraints impose a condition that value of a row cannot be left blank.
14. UPDATE EMPL; WHERE clause is missing in given query.
15. There is no need to write ALL and TABLE word in above query. Correct form is- DELETE FROM EMP;
16. Where clause is used to select particular rows that satisfy condition whereas having clause is used in connection with aggregate function, group by clause.
17. SQL Commands are classified into four categories:
18. Multiple transactions can be executed in one of the following two ways: (i) Serial (ii) Concurrent.

19. Savepoints are special operations that allow you to divide the work of a transaction into different segments. In case of a failure, you can execute rollbacks to the savepoint only, leaving prior changes intact.

20. COMMITTING a transaction means all the steps of a transaction are carried out successfully and all data changes are made permanent in the database. Transaction ROLLBACK means transaction has not been finished completely and hence all data changes made by the transaction in the database if any, are undone and the database returns to the state as it was before this transaction execution started.

21. The properties of transaction are:
    (i) Atomicity (ii) Consistency
    (iii) Isolation (iv) Durability

22. SQL supports following TCL commands BEGIN START TRANSACTION-Marks the beginning of a transaction COMMIT-Ends the current transaction by saving database changes and starts a new transaction. ROLLBACK- Ends the current transaction by discarding changes and starts a new transaction. SAVEPOINT- Defines breakpoints for the transactions to allow partial rollbacks. SET AUTOCOMMIT-Enables or disable the default autocommit mode.

23. The SQL ORDER BY clause is used to sort the data in ascending or descending order, based on one or more columns. Syntax: Select Column-list from table-name [Where Condition] [Order BY Column1, Column2, ColumnN] [ASC|DESC];

SUBJECTIVE QUESTIONS:

1. A transaction is program module whose execution may change the content of database. Committing a transaction means the permanently save any transaction into the database. Revoking a transaction means the operation of restoring a database to a previous state by canceling a specific transaction.

2. There is four significant subset of the SQL:

    a) Data definition language (DDL): DDL is used to define the data structure it consists of the commands like CREATE, ALTER, DROP, etc.

    b) Data manipulation language (DML): DML is used to manipulate already existing data in the database. The commands in this category are SELECT, UPDATE, INSERT, etc.

    c) Data control language (DCL): DCL is used to control access to data in the database and includes commands such as GRANT, REVOKE.

    d) Transaction Control Language (TCL): transaction control commands are COMMIT, ROLLBACK.

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UNIT - IV

IT APPLICATIONS

OBJECTIVE QUESTIONS

1. What is E-business
2. Mention some applications of e-governance.
3. How many major categories are there for E-Commerce?
4. Write the Benefits of E-commerce
5. How many major categories are there for E-Commerce? Write their benefits.
6. Write different features of E-Commerce.
7. What is access control attack? Give examples.
8. Distinguish between spam and cookies.
9. Write the objective of cyber law.

SUBJECTIVE QUESTIONS:

1. What is E-commerce? Elaborate on its benefits. What are the major challenges in implementing E-business?

ANSWER KEYS

Objective Questions:

1. E-business is any kind of business or commercial transaction that includes sharing information across the internet.
2. Mention some applications of e-governance. Some applications of e-governance:
   (a) Government to Citizen (G2C)
   (b) Consumer to Government (C2G)
   (c) Government to Government (G2G)
   (d) Government to Business (G2B)
   (e) Government to NGO (G2N)
3. Electronic commerce can be classified into four main categories.
   (i) B2B (ii) B2C
   (iii) C2C (iv) C2B
4. Benefits of E-commerce are:
   a. E-commerce provides the sellers with a global reach.
   b. E- Commerce will substantially lower the transaction cost.
   c. It provides quick delivery of goods with very little effort on part of the customer.
   d. 24x7 services.
   e. Electronic commerce also allows the customer and the business to be in touch directly, without any intermediaries.
5. Electronic commerce can be classified into four main categories.

Benefits of E-commerce

a. E-commerce provides the sellers with a global reach.

b. E- Commerce will substantially lower the transaction cost.

c. It provides quick delivery of goods with very little effort on part of the customer.

d. 24x7 services.

e. Electronic commerce also allows the customer and the business to be in touch directly, without any intermediaries.

6. Seven Unique Features of E-commerce are:

(i) Ubiquity - E-commerce technology is available everywhere. A unique feature of e-commerce technology. Example is if the user is at outstation, he also can through www.acer.com get the information of the product.

(ii) Global Reach - The total number of users or customers an e-commerce business can obtain. Example is www.acer.com is whole world also can browse it. Because the website have supplied many language to let different language users understand it.

(iii) Universal Standards - Standards that are shared by all nations around the world. Example is when you see the price of product in the website, that price is very fairly and standards.

(iv) Richness - Video, audio and text messages are possible. Example is the richness is can make the websites become attract people to browse.

(v) Interactivity - Technology that allows for two way communication between merchant and consumer. Example is in the website we can contract the merchants, that have many way can contract like: phone, e-mail, video call, and etc.

(vi) Information Density - The total amount and quality of information available to all market participants. Example is we can get the clearly information in the websites.

(vii) Personalization/Customization - It allows personalized messages to be delivered to individuals. Example of personalization is if have a new product, the website will send the email flyer to the customer. Example of customization is customer can customize something in the product like name, pattern, colors, and etc.

7. What is access control attack? Give examples. Access control attacks typically bypass access control methods to steal data or user credentials. Ex:-Common Attacks Due To Broken Access Control

a. Access control prevents the unauthorized access to the objects which include access to the information systems like communication links, networks, computers, services and sensitive data.

b. On the other hand, broken access control continues to be the most common web application Vulnerability.

8. Distinguish between spam and cookies.

Cookies are files that your web browser uses to remember things like have you visited a page before and so on.

Spam means unwanted emails.

9. Write the objective of cyber law.
Objective of cyber law:

i) Safeguard national critical information infrastructure (CII)

ii) Respond to, resolve, and recover from cyber incidents and attacks through timely information sharing, collaboration, and action.

iii) Establish a legal and regulatory framework to enable a safe and vibrant cyberspace.

SUBJECTIVE QUESTIONS:

1. E-commerce, also known as electronic commerce or internet commerce, refers to the buying and selling of goods or services using the internet.

Benefits of E-Commerce:

a. Immediacy - no going to the shops or waiting in queues

b. price - goods bought online tend to be cheaper

c. Choice - the range of goods available is vast and with sites like http:// www.amazon.com that let you compare goods from many retailers it is easy to find what you want.

d. 24-hour availability - the shop never closes

e. Speed - you'll locate what you want much quicker

f. Global markets - neither you nor the vendor are restricted to your/their locality

g. Interactivity - get immediate feedback on prices, features etc

h. Less paperwork - always a good thing!

Some of the major challenges faced by e-commerce in India are:

(i) Infrastructural Problems

(ii) Absence of Cyber Laws

(iii) Privacy and Security Concern

(iv) Payment and Tax Related Issues

(v) Digital Illiteracy and Consumer awareness

(vi) Virus Problem

(vii) English Specific


HTML
xml
ajax
php
css
mysql
java
asp
script
sql
xhtml