

Example

Suppose a student is applying for a scholarship online in Pakistan. He should provide personal information only on verified and secure websites to prevent misuse of their data.

Ethical Issues

Ethical issues include the following:

- **Respecting Copyright:** Copyright is the legal right of creators to control the use of their original work, such as text, images, music, or videos. Respecting copyright means not using someone else's work without permission.
 - **Example:** A research student should not copy from online articles without giving credit to the source when writing a research paper.
- **Avoiding Plagiarism:** Plagiarism means using someone else's ideas, words or work without giving them credit. It is considered a dishonest and unethical act. Always give credit to the original authors of ideas, quotes or content used in assignments or research work.
 - **Example:** A research student should include the author's name and source when using an idea or quotation in a research paper.

Q. What is cybersecurity awareness?**Cybersecurity Awareness**

Cybersecurity awareness means understanding how to protect yourself from online threats such as hacking, viruses, phishing and identity theft. This includes using strong passwords, updating software, avoiding suspicious links and understanding how to keep personal data secure.

- **Reporting Cybercrime in Pakistan:** Cybercrimes can be reported to NR3C-FIA at <https://www.nr3c.gov.pk>.

Q. Discuss the role of collaborative problem solving in addressing challenges using both human-machine collaboration and teamwork.**Collaborative Problem Solving**

Collaborative problem solving refers to working with others and using digital tools to address challenges and achieve common goals.

1. Human-Machine Collaboration

Human-machine collaboration involves using technology and digital tools with human skills to solve problems more efficiently. It includes the following:

- **Using Tools:** The digital tools such as spreadsheets can be used to complete the tasks.
 - **Example:** Students can use digital tools like spreadsheet software to analyze and organize data during group projects. It can make the work easier and more efficient.
- **Combining Skills:** Human thinking can be combined with machine capabilities for better results.
 - **Example:** A student may use data analysis tool to process survey results. He then can use his own understanding to draw meaningful conclusions for a class report.

2. Teamwork and Knowledge Sharing

Teamwork and knowledge sharing involve working with others and exchanging information to improve problem-solving and learning:

- **Group Projects:** Collaborate on assignments or projects with each member contributing their skills.
 - **Example:** In a science project, the students can share their research findings and ideas to complete the assignment successfully.
- **Sharing Insights:** The ideas, questions and experiences can be exchanged with others to improve understanding.
 - **Example:** In study groups, the students can discuss topics, ask questions and help each other to understand difficult concepts. This leads to better understanding and teamwork.

Q. Explain how accessible design and user feedback help to create inclusive digital content for everyone.**Creating Accessible Digital Content**

Accessibility means making digital content usable for everyone including people with disabilities. It ensures that all users can access and benefit from digital resources such as websites, documents and presentations.

Design for Accessibility

- **Readable Fonts:** The simple and large fonts can be used that are easy to read.
 - **Example:** The fonts such as Arial or Times New Roman can be used and decorative or fancy styles should be avoided. The fancy fonts can be hard to read especially for users with vision difficulties.
- **Alternative Text for Images:** A descriptive text can be provided for images so visually impaired users can understand the content through screen readers.
 - **Example:** The alternative text can be added to charts or graphs in a digital report to explain the visual information.

User Feedback

User feedback is the information gathered from users about their experience. It helps creators to improve the content according to user needs.

- **Surveys and Forms:** The online surveys can be used to collect feedback. For example, ask classmates to review it and suggest improvements after designing a website.
- **Direct Communication:** It involves speaking with users personally to learn about their preferences, needs and suggestions. For example, students can ask classmates for opinions on a presentation or project and then use those suggestions to improve their work.

Exercise Solution**Multiple-Choice Questions (MCQs)**

1. Option typically not included in common Terms of Use clauses:

a) User obligations	b) Privacy and data use
c) Product advertising	d) Termination of service

2. The purpose of the "Limitations of Liability" clause in Terms of Use:

- a) Ensures full company responsibility
- b) Limits company's liability
- c) Provides user rights for damages
- d) Guarantees constant service availability

3. The type of harmful software that secretly monitors user activity:

- a) Spam
- b) Cookies
- c) Spyware

4. The threat involving user redirection to fake websites:

- a) Phishing
- b) Spam
- c) Spyware

5. The impact of the digital divide on education:

- a) Improves learning for all
- b) No educational impact
- c) Creates inequality in digital resource access
- d) Replaces traditional teaching methods

6. The reason for understanding bias during information evaluation:

- a) Ignoring other viewpoints
- b) Recognizing the source's agenda
- c) Validating all sources equally
- d) Avoiding evaluation altogether

7. The positive societal impact of computing systems:

- a) Spread of misinformation
- b) Improved information accessibility
- c) Heightened privacy concerns
- d) Widened technology gap

8. The practice considered ethical when using information:

- a) Copying content without permission
- b) Respecting copyright and avoiding plagiarism
- c) Ignoring source attribution
- d) Using unverified information

9. The behavior considered irresponsible digital conduct:

- a) Using secure websites
- b) Spreading false info online
- c) Respecting online privacy
- d) Reporting suspicious activity

Answers

1. a	2. b	3. c	4. d	5. c	6. b
7. b	8. b	9. b			

Short Questions**Q.1. Why is it important for users to understand Terms of Use?**

Understanding Terms of Use helps users know their rights, responsibilities and limitations when using digital services. It ensures informed decision-making and protects users from misuse or legal issues. The users also learn how their data will be used and what actions are prohibited. This promotes safe and responsible use of online platforms.

Q.2. Differentiate between phishing and pharming.

Phishing involves fake emails or messages that trick users into giving personal information. Pharming redirects users to fake websites even if they enter the correct URL. Phishing relies on user action such as clicking links while pharming changes the website's path. Both aim to steal personal information such as passwords or bank account details.

Q.3. Identify two impacts of the digital divide on social and civic participation.

People without internet access cannot participate in digital government services or social programs. They may be excluded from online discussions, news or voting platforms. This reduces their representation in civic matters and access to information. It widens the gap between connected and disconnected communities.

Q.4. What are the key steps involved in evaluating information sources?

Different key steps are involved in evaluating information sources.

Check the credibility: It involves assessing the qualifications and reputation of the author providing the information.

Verify accuracy: It involves cross-checking the facts with other reliable sources to ensure correctness.

Identify purpose: It involves determining whether the content is informative or biased.

Consider timeliness: It involves making sure the information is current and relevant.

Q.5. How does responsible data sharing contribute to ethical use of information?

Responsible data sharing ensures that information is used with consent and for legitimate purposes. It protects individuals' privacy and prevents misuse. It builds trust and transparency in digital environments. Ethical data sharing respects laws and promotes fairness in technology use.

Long Questions**Q.1. Explain the common clauses found in Terms of Use and describe how they protect both the service provider and the user. (See chapter)****Q.2. Explain the concept of bridging the digital divide and discuss the roles of government initiatives in addressing this issue. Provide relevant examples from Pakistan.****Understanding the Digital Divide**

Bridging the digital divide means ensuring that everyone has equal access to digital technology and the internet. This is important for giving everyone the same opportunities to learn, grow and participate in the digital world. It can reduce inequality and promote development for all parts of society.

Government Initiatives Bridging the Divide

Governments can invest in building infrastructure to provide internet access in areas where it is not available. This includes expanding broadband services and providing funding to improve digital access in educational institutes, libraries and public spaces.

Some important government initiatives are as follows:

1. Infrastructure Expansion & Connectivity Programs

The Universal Service Fund (USF) is deploying broadband and telephony to backward areas. It includes public-private partnership projects like free Wi-Fi in Tharparkar villages.

The government has initiated negotiations with Starlink and other satellite internet services to bring high-quality internet to remote regions.

2. Digital Literacy and Skills Training

DigiSkills.pk is an initiative by the Ministry of IT & Telecomm and Virtual University. It has trained over 1.2 million Pakistanis in freelancing, marketing, web design and digital literacy.

The e-Rozgaar Program by PITB (Punjab) empowers youth with digital and freelancing skills across Punjab province.

3. Digital Gender Inclusion

The digital gender inclusion strategy was used to connect 8 million women with mobile internet. It reduced the gender gap from 38% to 25% in 2024.

Q.3. Explain how critical thinking skills contribute to responsible information utilization. Provide examples of how these skills can be applied in real-life scenarios. (See chapter)**Q.4. Discuss the importance of collaborative problem solving in a digital environment and provide examples of how human-machine collaboration can enhance this process. (See chapter)****SHORT QUESTIONS****Q.1. What are Terms of Use?**

The Terms of Use are the legal agreements that define how a product or service can be used. These terms are set by the service provider such as a website, app or software company. The users must agree to these terms before using the service.

Q.2. What is the purpose of Terms of Use?

The main purpose of Terms of Use is to ensure a fair and transparent relationship between the service provider and the user. They clearly define what users can expect from the service and what is expected from the users.

Q.3. Why is it important to understand Terms of Use?

It is important to understand the Terms of Use for both users and service providers. It ensures that everyone knows their rights, responsibilities and the limits of using a digital product or service.

Q.4. How do the Terms of Use provide clarity and transparency?

The Terms of Use provide clarity and transparency about what users can expect from a service. They clearly explain what the service provider will offer, the conditions of use and which actions are not allowed.

Q.5. How are Terms of Use legal safeguards for businesses?

Businesses include Terms of Use to legally protect themselves from misuse, abuse, or unauthorized actions by users. These terms set clear boundaries and help reduce legal risks.

Q.6. List some important clauses of Terms of Use?

Some important clauses in Terms of Use include user obligations, limitation of liability, privacy and data use, intellectual property rights and termination of service.

Q.7. What is meant by user obligations in Terms of Use?

The user obligations describe what is expected from the user while using the service. For example, the popular ride-sharing apps in Pakistan such as inDrive require users to provide a valid phone number.

Q.8. What is the purpose of limitation of liability clause in Terms of Use?

This clause describes that the service provider is not responsible for every problem or delay that may occur. For example, the bank's Terms of Use state that the bank is not responsible for any inconvenience caused by any interruptions.

Q.9. Why privacy and data use clauses are important in Terms of Use?

These clauses explain how user data is collected, stored and protected. This is important due to increasing concerns about data privacy. For example, messaging apps like WhatsApp include terms that explain how your messages are stored and protected to ensure user privacy.

Q.10. What is the purpose of intellectual property rights clause in Terms of Use?

These clauses protect the provider's content such as logos, articles or software. The users are not allowed to copy or distribute these materials without permission. It ensures that their content is not misused.

Q.11. What is the meant by termination of service clause in Terms of Use?

This clause explains the conditions under which the service provider can suspend or terminate a user's access to the service. For example, the social media platforms like Facebook may suspend or remove accounts that violate community standards.

Q.12. What are the legal consequences of violating Terms of Use?

Violating the Terms of Use can lead to legal consequences such as fines, lawsuits or being banned from using a service. These measures are used to protect the service providers and ensure the users follow fair and lawful practices.

Q.13. What are ethical considerations in Terms of Use?

Ethical considerations in Terms of Use involve fairness, transparency, and respect for user rights. The service providers must ensure that terms are clear and easy to understand.

Q.14. Describe personal rights in Terms of Use?

Personal rights in Terms of Use include the right to privacy, the right to be informed and the right to withdraw consent. It is important for users to be aware of these rights and understand how to exercise them when using digital services.

Q.15. What are privacy and security threats?

Privacy and security threats refer to risks that can expose personal, financial or sensitive information on the internet. These threats can affect both individuals and organizations by compromising the integrity of their data or systems.

Q.16. Why is it important to understand privacy and security risks?

Understanding privacy and security threats is important because it helps users take preventive actions to protect personal information.

Q.17. List five major types of security threats.

Five major types of online privacy and security threats include spam, malware, cookies, phishing and pharming.

Q.18. What is spam?

Spam refers to unwanted and irrelevant messages sent to the email, phone or social media accounts. These messages are usually promotional and sent in bulk.

Q.19. Give an example of spam.

The user may receive several text messages from unknown numbers offering products or services.

Q.20. What is malware?

Malware (malicious software) is a type of software designed to harm computer systems, steal data or gain unauthorized access.

Q.21. What is spyware?

Spyware is a type of malware that secretly monitors a user's activity on a computer or mobile device without their knowledge.

Q.22. What are cookies?

Cookies are small files stored on the user's device by websites to save login details, preferences and browsing behavior. Cookies can track online activities and show targeted ads. Some websites may use this data without user permission that raises privacy concerns.

Q.23. Give an example of the use of cookies.

The cookies may save login details when the user visits an online shopping site. The user does not need to enter these details again. The cookies can also track the products viewed by the user to show relevant targeted advertisements.

Q.24. What is phishing?

Phishing is a scam in which the attackers pretend to be a trusted organization to trick people to give personal information such as passwords, credit card numbers or bank account details.

Q.25. Give an example of phishing.

The user may receive an email that looks like from the bank. It asks the user to click a link and enter bank account details. The scammer can use these details to steal money or identity if the user enters details using such fake links.

Q.26. What is pharming?

Pharming is a technique where the users are redirected to fake websites without knowing it. These websites look similar to the real websites. The goal is to steal personal information such as usernames, passwords or bank account details.

Q.27. What are security threat prevention techniques.

Security threat prevention techniques are used to protect personal data and ensure safe online usage. They help to reduce risks from threats like spams, viruses, phishing and data theft.

Q.28. What is the use of spam filters?

Spam filters are the tools that automatically detect and remove unwanted or junk emails. They prevent the inbox from being flooded with unnecessary or harmful messages.

Q.29. What is antivirus software?

Antivirus software is a program that detects and removes harmful software such as viruses and spyware from computer or device.

Q.30. How cookies can be managed and why is it important?

Cookie can be managed by controlling which website cookies are stored on the device and which should be deleted. It plays an important role in maintaining online privacy. The user can manage cookies to protect personal data and prevent it from being misused by unknown or untrusted websites.

Q.31. What is meant by recognizing phishing?

Recognizing phishing means identifying fake emails, messages, or websites that try to steal personal or financial information.

Q.32. What is meant by digital divide?

Digital divide refers to gap between people who have access to modern digital technologies and those who do not. This divide can be based on various factors such as income, location, age, education and social status.

Q.33. What is the impact of digital divide?

The digital divide has a significant impact on individuals, communities and societies. It can lead to unequal opportunities in education, employment, healthcare and participation in digital services. People who lack access to technology are often left behind in an increasingly digital world.

Q.34. List some causes of digital divide.

The main causes of digital divide are economic barriers, geographical barriers, educational barriers and social barriers.

Q.35. How do economic barriers cause digital divide?

Economic inequality is one of the main causes of the digital divide. Many people cannot afford devices like smartphones, computers or internet services. This is more common in developing countries, rural areas or low-income families.

Q.36. How do geographical barriers cause digital divide?

People living in remote or rural areas often lack access to high-speed internet or reliable network coverage due to poor infrastructure. It becomes difficult for them to connect to digital world. For example, the internet may not be available in mountains, villages and remote areas.

Q.37. How do educational barriers cause digital divide?

Lack of digital literacy is another significant cause of digital divide. Some people may not know how to use technology effectively due to lack of proper education and training. For example, a student who has never used a computer may find it hard to attend online classes or complete assignments digitally.

Q.38. How do social barriers cause digital divide?

Social factors such as age, gender and disability also contribute to the digital divide. For example, very old person may struggle to learn new digital skills. Some cultures also limit women's access to digital devices.

Q.39. How does digital divide create educational inequality?

Educational inequality refers to the differences in learning opportunities between students who have access to technology and those who do not. The students without internet or digital devices cannot attend online classes or access educational content.

Q.40. Give an example of educational inequality due to digital divide.

Many schools shifted to online learning during COVID-19 pandemic. The students in rural or low-income areas of Pakistan could not attend classes due to lack of internet or devices. It made educational inequality even worse.

Q.41. How does digital divide create economic disparities?

Economic disparities are the gaps in income and job opportunities between people who have access to technology and those who do not. Many jobs today require basic computer and internet skills. People without internet access may struggle to find or apply for jobs.

Q.42. How does digital divide create social and civic inequality?

Social and civic participation involves engaging with society and government through online platforms such as social media, digital news, online voting and public services. The people without internet cannot access news, social connections or digital government services.

Q.43. Give an example of social and civic inequality due to digital divide.

The e-government services in Pakistan are more common in urban areas. The rural communities often lack access to these services. It reduces their participation in social programs and government activities.

Q.44. How does digital divide create health disparities?

The digital divide can lead to unequal access to health information and services. Digital platforms are increasingly used for accessing health information, telemedicine and online appointment scheduling. People without internet access cannot use essential health services.

Q.45. Give an example of health disparities due to digital divide.

Many communities in rural areas of Pakistan have with limited internet access. They struggle to find reliable health information online or use telemedicine to consult with doctors.

Q.46. What digital literacy gap?

The digital divide also leads to a gap in digital literacy. People without access to technology do not get the chance to develop important digital skills. This limits their ability to succeed in education or compete in the modern job market.

Q.47. Why is it important to bridge the digital divide?

Bridging the digital divide is important for giving everyone the same opportunities to learn, grow and participate in the digital world. It can reduce inequality and promote development for all parts of society.

Q.48. What can the government do to bridge the digital divide?

Governments can invest in building infrastructure to provide internet access in areas where it is not available. Schools and community centers can teach people how to use technology. Governments can work with companies and nonprofits organizations to provide affordable devices and internet services.

Q.49. List some positive impacts of computing systems.

Some positive impacts of computing systems include increased access to information, communication and economic growth.

Q.50. List some negative impacts of computing systems.

Some negative impacts of computing systems include digital divide, misinformation, fake news, privacy and data protection.

Q.51. How has computing improved communication?

Computing has made communication faster and more convenient. People can connect globally in real-time through social media, email and messaging apps.

Q.52. What is the impact of computing system on economic growth?

Computing has contributed to economic growth by creating jobs and new industries such as IT services, digital marketing and e-commerce. It has changed the way traditional businesses operate. It has become easier to reach customers and manage work more efficiently.

Q.53. Why misinformation and fake news is a challenge?

Misinformation and fake news is a challenge that occurs through digital platforms. The rapid sharing of unverified or false content on social media can cause public panic, fear or mistrust. It may also lead to protests or violence if people believe harmful or false content.

Q.54. Give an example of misinformation.

The false information about virus and vaccines spread quickly on social media during COVID-19 pandemic. It created confusion and fear among public.

Q.55. Why digital literacy is important to avoid the impact of fake news?

Digital literacy is important for people to understand and check accuracy of information. It enables users to recognize fake news and make informed decisions.

Q.56. What is meant by digital citizenship?

Digital citizenship refers to the responsible, respectful and ethical use of digital technologies and internet. It involves behaviors and practices that promote safety, privacy, fairness and collaboration online. Practicing good digital citizenship helps individuals to protect themselves and others while contributing to a safe digital environment.

Q.57. Why is it important to create strong passwords?

It is important to create strong passwords for the accounts. A strong password is hard to guess. It helps to protect user accounts and sensitive data from unauthorized access. A strong password typically includes a combination of letters, numbers and special characters.

Q.58. What do you mean by responsible data sharing?

Responsible data sharing means that personal or sensitive information should be shared when necessary. It should only be shared with trusted websites or people.

Q.59. What is meant by cybersecurity awareness?

Cybersecurity awareness means understanding how to protect yourself from online threats such as hacking, viruses, phishing and identity theft. This includes using strong passwords, updating software, avoiding suspicious links and understanding how to keep personal data secure.

Q.60. What is collaborative problem solving?

Collaborative problem solving refers to working with others and using digital tools to address challenges and achieve common goals.

Q.61. What is involved in human-machine collaboration?

Human-machine collaboration involves using technology and digital tools with human skills to solve problems more efficiently. It includes using tools and combining skills.

Q.62. Define accessibility.

Accessibility means making digital content usable for everyone including people with disabilities. It ensures that all users can access and benefit from digital resources such as websites, documents and presentations.

Q.63. Which habits can make a big difference in digital safety?

Some simple habits can make a big difference in digital safety. These habits include using updated antivirus software, avoiding clicking on suspicious links and reviewing privacy settings in browser to protect against online threats.

Q.64. What is the purpose of Personal Data Protection Bill?

In 2020, Pakistan introduced the Personal Data Protection Bill that requires organizations to obtain clear consent before collecting personal data. They must ensure secure storage of that data and respect user privacy rights.

Q.65. Where can cybercrimes be reported in Pakistan and what is the official website for this service?

The cybercrimes in Pakistan can be reported to the National Response Centre for Cyber Crime (NR3C) of Federal Investigation Agency (FIA). The official website is www.nr3c.gov.pk.

Q.66. How have "Internet in a Box" projects in Pakistan used computing technology to bridge educational gaps in remote areas without internet access?

The "Internet in a Box" projects in Pakistan use computing technology to provide offline educational resources to remote areas. These initiatives have provided digital learning and helped to bridge educational gaps in remote areas without internet access.

Multiple Choice Questions

- Which of the following is another common name for Terms of Use?
 - Privacy Policies
 - User Guides
 - Terms and Conditions
 - Delivery Notices
- The primary purpose of _____ in a digital service is to establish the legal rights and obligations of both users and providers.
 - Technical Support
 - User Guides
 - Terms and Conditions
 - Community Guidelines
- Who usually sets the Terms of Use for service?
 - Service provider
 - User
 - Court of law
 - Government
- What type of document are Terms of Use considered to be?
 - Technical document
 - Legal agreement
 - Marketing material
 - Instruction manual

- Which of the following is NOT typically included in Terms of Use agreements?
 - Delivery procedures
 - Return policies
 - Payment methods
 - User passwords
- Which of the following is a popular Pakistani online shopping platform?
 - Amazon
 - Flipkart
 - Daraz
 - eBay
- Which of the following is an example of a user right typically protected by Terms of Use?
 - Right to free service
 - Right to privacy
 - Right to free delivery
 - Right to unlimited data
- Which clause in Terms of Service legally restricts a provider's responsibility for damages or service failures?
 - User Obligations
 - Limitations of Liability
 - Intellectual Property Rights
 - Termination of Service
- Which of the following is NOT protected by Intellectual Property Rights clauses in Terms of Use?
 - Company logo
 - Public domain images
 - Website content
 - Software code
- Which clause in Terms of Use specifically prohibits unauthorized sharing of a company's proprietary course materials?
 - Limitation of Liability
 - Termination of Service
 - Intellectual Property Rights
 - User Agreement
- Which clause governs the conditions for suspending or terminating user accounts?
 - Intellectual Property Rights
 - Privacy and Data Use
 - User Obligations
 - Termination of Service
- Which Terms of Use clause specifically outlines how user data is collected, processed, and protected?
 - User Obligations
 - Limitations of Liability
 - Privacy and Data Use
 - Termination of Service
- What is the term for using software without proper authorization or license?
 - System glitch
 - Software piracy
 - Version update
 - Fair use
- Software piracy is a violation of:
 - Marketing regulations
 - Copyright laws
 - Environmental policies
 - Open-source licenses
- Which of the following is NOT a type of security threat?
 - Spam
 - Spyware
 - Phishing
 - Firewall
- Which term describes unwanted bulk messages sent to email or phones without consent?
 - Spyware
 - Spam
 - Phishing
 - Cookies
- Which type of malicious software secretly monitors user activity on computer or phone?
 - Cookies
 - Spam
 - Spyware
 - Phishing
- Which type of scam involves pretending to be a trustworthy organization to trick users into giving away personal information?
 - Cookies
 - Spam
 - Spyware
 - Phishing
- Which of the following is commonly used to carry out phishing attacks?
 - Emails
 - Radio ads
 - Podcasts
 - Social media
- _____ are small text files that websites save on devices to track login status, preferences and browsing activity.
 - Cookies
 - Spam
 - Firewall
 - Phishing
- Where are cookies typically stored?
 - Website servers
 - User's device
 - Cloud storage
 - Router

22. Which type of threat involves redirecting users to a fake website?
a. Pharming b. Spyware c. Cookies d. Phishing
23. Which of the following protects your computer from harmful programs such as viruses, spyware, and other malware?
a. Spam filter b. Antivirus software
c. Web browser d. Phishing recognition
24. What does "https://" in a web address indicate?
a. Gaming website b. Unsecured connection
c. Secure website d. Entertainment blog
25. Websites with HTTPS often have a _____ symbol in the browser's address bar.
a. Star b. Padlock
c. Warning triangle d. Reload
26. ICT stands for:
a. International Computer Technology
b. Internet and Communication Techniques
c. Information and Communication Technology
d. Integrated Computing Tools
27. What is the term used to describe the gap between those who have access to technology and those who do not?
a. Digital Divide b. Tech Gap
c. Digital literacy d. Cyber espionage
28. Which of the following is a major cause of the digital divide?
a. Language barriers b. Social media trends
c. Economic barriers d. High computer skills
29. Which online platform allows students to take courses from global universities?
a. YouTube b. Netflix
c. Coursera d. Zoom
30. What is an example of a social movement that gained global traction through social media?
a. #MeToo b. Arab Spring
c. Clean Air Campaign d. Save Water Campaign
31. Which term involves understanding how to act safely, responsibly and respectfully when using digital technologies and the internet?
a. Cybersecurity b. Digital citizenship
c. Hacking d. Meme culture
32. Using the internet to harm or harass someone is called:
a. Cyber Safety b. Cyberbullying
c. Cyber Ethics d. Cyber Security
33. Which of the following is a secret combination of characters used to protect against unauthorized access?
a. Password b. Username
c. Firewall d. IP address
34. Which of the following is an example of a strong password?
a. password123 b. myname123
c. P@ssw0rd\$Secur3! d. abc123
35. What is the term for presenting someone else's work or ideas as your own without proper attribution?
a. Paraphrasing b. Plagiarism
c. Teamwork d. Netiquette
36. What protects original creative work from being used without permission?
a. Privacy settings b. Copyright
c. Plagiarism d. Terms of Use
37. Which organization in Pakistan handles cybercrime complaints?
a. HEC b. PTA
c. NR3C-FIA d. NADRA

38. What is the official website to report cybercrime in Pakistan?
a. www.cybercrime.pk b. www.nr3c.gov.pk
c. www.paksecure.com d. www.fia.pk
39. What is a common tool for collecting user feedback?
a. Spreadsheet b. Email
c. Online survey d. Video call
40. What was introduced in Pakistan in 2020 to protect personal data?
a. The Online Safety Bill
b. The Cyber Law Act
c. Personal Data Protection Bill
d. Student Privacy Act
41. What is the purpose of Pakistan's Personal Data Protection Bill?
a. Promote social media
b. Increase internet use
c. Protect citizens' personal data
d. Reduce digital access

Answers

1. c	2. c	3. a	4. b	5. d	6. c
7. b	8. b	9. b	10. c	11. d	12. c
13. b	14. b	15. d	16. b	17. c	18. d
19. a	20. a	21. b	22. a	23. b	24. c
25. b	26. c	27. a	28. c	29. c	30. a
31. b	32. b	33. a	34. c	35. b	36. b
37. c	38. b	39. c	40. c	41. c	

Online Research and Digital Literacy

Q. What is online research and why is it important in today's information-driven world?

Online Research

Online research is the process of finding information about a specific topic using the internet. It involves using various online sources such as articles, reports, videos and websites to gather information. The purpose is to find accurate, reliable and up-to-date information to understand a topic or solve a problem efficiently.

Importance of Online Research

Online research is important because it allows people to access a wide range of information quickly and easily. Many tasks in today's digital world depend on the information from internet. It is a valuable skill to learn how to search, evaluate and use online information. It helps students to complete assignments and prepare for exams. It allows professionals to stay updated in their fields. It also supports people in making informed decisions in everyday life.

Q. Discuss the different types of online research and their purposes, providing examples for each type.

Types of Online Research

Different types of online research can be used for specific purposes. The five main types of online research are as follows:

1. General Information Research

General information research refers to finding basic information about a topic. It includes using search engines such as Google to access articles, blog posts, videos and websites. This type of research helps users to understand everyday topics or get quick facts.

Example

The user can search "how solar panels work" on Google to learn the basics of renewable energy.

2. Academic Research

Academic research focuses on finding scholarly information for educational purposes. It is used by students, educators and scholars to find reliable content such as books, research papers, and academic articles.

Example

The student can use Google Scholar to find journal articles on climate change for a college project.

3. Market Research

Market research is used to understand customer behavior, market trends and competition. Businesses and entrepreneurs use market research to make informed decisions about launching new products or services.

Example

A clothing brand analyzes social media trends and customer surveys to decide which styles and colors should be included in the next seasonal collection.

4. Fact-Checking Research

Fact-checking research is used to verify whether the information found online is true or false. It involves checking multiple reliable sources to confirm the correctness of facts.

Example

A student can visit www.moib.gov.pk to confirm if a viral social media post about a government policy is true.

5. Health Research

Health research is related to health topics such as symptoms, treatments, diseases or healthcare services. It can be used to make better decisions about health.

Example

A person uses WebMD or Mayo Clinic to check symptoms of seasonal flu and learn about treatment options.

Q. Explain the concept of digital literacy and its key components. How does it contribute to effective use of digital tools and resources?

Digital Literacy

Digital literacy is the ability to find, understand, create and share digital contents. It involves the use of smart devices, software applications, social media platforms, search engines and the Internet. It requires an ability to find, assess and use information from digital sources accurately and responsibly.

Key Components of Digital Literacy

Digital literacy includes several essential skills that help individuals to use digital tools and online resources effectively and responsibly. The key components of digital literacy are as follows:

1. Using Technology

This skill involves the ability to operate digital devices such as computers, tablets and smartphones. It includes using programs, apps and navigating websites.

Example

Suppose a student is writing a report on a computer. He must know how to use word processing software to type, format and save the work.

2. Searching for Information

This skill involves using search engines to find information on the internet. It includes entering relevant keywords and refining search results to find the most useful and accurate content.

Example

Suppose a farmer in Punjab is looking for better crop irrigation methods. He can search on Google using the terms like "modern irrigation techniques for wheat."

3. Evaluating Sources

This skill involves checking whether the information found online is reliable. It includes reviewing the author, the website's credibility and whether the content is up-to-date and factual.

Example

Suppose a student needs to use an article for a college project. He must check if it was written by an expert and published on an educational or official website.

Contribution to Effective Use

Digital literacy ensures that individuals can make informed decisions when using digital tools. It enables students to conduct proper research. It helps workers to use technology efficiently. It also allows everyone to stay safe and productive online. People with strong digital literacy skills are better prepared for academic success, career opportunities and responsible digital citizenship.

Q. How can digital resources be utilized to find, manage and organize reliable information for academic or professional purposes?**Utilizing Digital Resources**

A wide range of tools and information is available on the internet to support learning, research and personal development. Utilizing digital resources means making effective use of online materials such as articles, videos and websites. It can help everyone to help achieve academic or professional goals.

1. Online Libraries and Research Databases

Online libraries and research databases provide access to academic information. These platforms include digital books, scholarly articles, journals and research papers. The users can access this material from anywhere through internet. They are especially useful for students and researchers who need reliable and scholarly content for their projects or studies.

2. Accessing Academic Journals

Academic journals are collections of articles written by experts in specific fields. These articles are often peer-reviewed that means they are checked and approved by other professionals before publication. This makes academic journals trustworthy and credible sources of information. Students can access these journals through their college or university libraries or academic platforms such as **Google Scholar** or **JSTOR**.

Q. Explain how to search information online effectively and manage digital resources efficiently.**Effective Navigation and Managing Digital Information**

Searching for information online effectively requires specific skills. A successful search begins with the use of clear and relevant keywords. Most search engines and academic databases also offer advanced search options to narrow down results by date, author, subject or publication type.

It is also important to manage the digital information properly after finding useful resources. The user should:

- Save and organize digital copies of articles and papers.
- Take notes on key ideas or quotes.
- Keep track of the sources for citations and references.

Many tools such as digital folders, note-taking apps and reference managers like **Zotero** or **Mendeley** are available. These tools can be used to stay organized and efficient throughout the research process. An effective information management ensures that students can easily access the resources when needed.

Q. What is research ethics? Discuss the importance and key principles of research ethics.**Research Ethics**

Research ethics refer to a set of principles and guidelines followed by researchers to ensure their work is conducted in a responsible, honest and respectful manner. These ethics protect the rights of the participants. They also maintain the credibility of the research process and its results.

Example

Suppose a student is conducting a survey on effects of social media on classmates' study habits. Research ethics require to get permission before collecting personal information and ensure that the answers remain confidential.

Importance of Research Ethics

Research ethics are important because they ensure the research process and its outcomes are trustworthy and fair. The research ethics are important for the following reasons:

- They protect the rights and safety of participants.
- They prevent the spread of false or misleading information.
- They promote fairness, honesty and transparency in research.
- They strengthen the credibility and value of the research results.
- They support a positive reputation for researchers.
- They increase public trust in scientific and academic findings.

Key Principles of Research Ethics

The main principles that guide ethical research are as follows:

1. Informed Consent

Informed consent means informing participants about the purpose and process of the research. It is essential to gain the consent before collecting any data.

Example

Suppose the user needs to distribute a questionnaire. He must explain its purpose and ask the participants if they agree to participate.

2. Confidentiality

Confidentiality means keeping participants' personal information and responses private. Researchers must not disclose any details without consent and must protect data from unauthorized access.

Example

The survey results must be stored in a secure folder. The real name should not be used when presenting findings.

3. Integrity

Integrity in research means being honest, accurate and transparent throughout the research process. The researcher should not use false data, plagiarize content or misrepresent the findings.

Example

Suppose some survey responses are missing. They must be reported accurately rather than guessing the missing data. The contents from another research should not be used without giving credit.

4. Respect for Participants

All participants must be treated with fairness and care. Research activities must not cause harm, stress, or discomfort to any individual or group.

Example

The questions that may offend or give stress to participants should be avoided.

Q. Explain how unethical practices could affect the research community and society.

The negative impacts of unethical practices include the following:

- The misleading results can cause wrong decisions in critical fields like medicine or public safety.
- It can lead to loss of public trust and people may not participate in the future research.
- The reputation of the researcher, his institution and the wider research community may be damaged.
- There can be legal and professional consequences if ethical standards are violated.

Q. Discuss the various types of intellectual property and provide examples of each. Explain how each type helps in protecting different kinds of creations and innovations.**Intellectual Property**

Intellectual Property refers to the legal rights given to individuals or businesses for their creations, inventions and brands. It includes both artistic and commercial creative works such as new ideas, writings, designs, music and machines.

Intellectual property ensures that the creative and intellectual efforts of individuals or organizations are legally protected and no one can copy or distribute them without permission.

Types of Intellectual Property

Different types of intellectual property are as follows:

1. Patent

A **patent** is a legal right to stop others from making or selling an invention for a certain period of time. It is an effective way to protect an invention or idea. It gives exclusive rights to the inventor to make, use or sell the invention for a certain period.

Example

A Pakistani engineer invents a new solar panel that increases energy efficiency. He gets a patent for this invention. It will allow him to manufacture or sell this solar panel in Pakistan for a certain number of years.

2. Trademark

A **trademark** is a legally registered symbol, name, slogan or logo that represents a company or product. It is used by companies to distinguish their products or services from others. It ensures that no other person or company can use that name or logo.

Example

The logo of National Foods is a trademark that helps the customers to recognize the brand when they see it on products like spices and sauces.

3. Copyright

Copyright is a type of intellectual property that protects a person's creative work. Copyright law covers various types of works such as paintings, photographs, images, music, computer programs, books, poems, blogs, films and plays etc.

Copyright laws are important. They ensure that no body uses the copyrighted material without getting permission from the owner. The copyright symbol is usually used with copyrighted material. A violation of copyright is called piracy.

Example

A Pakistani author writes a novel. Copyright laws ensure only the author can publish or sell the novel or allow others to adapt it into a movie or drama.

4. Industrial Designs

Industrial design rights protect the appearance and aesthetic features of a product. This includes the shape, configuration, patterns and colors that make the product visually appealing and unique.

Example

Suppose a designer in Karachi creates a unique bottle design for a new mineral water brand. The design can be protected so no other company can legally use the same shape for their bottles.

5. Trade Secrets

A **trade secret** is a confidential business information that provides a company with a competitive advantage. They can include formulas, recipes or manufacturing processes that are not disclosed to the public.



Protecting trade secrets is important because unauthorized use or theft can damage a company's success and reputation. The companies often use legal agreements and strict security measures to keep trade secrets safe.

Example

The secret recipe of a famous Pakistani soft drink Pakola is a trade secret. Only a few people in the company know the exact ingredients and preparation method.

Q. Why is Intellectual Property Important?

Intellectual property is important because it protects original ideas and creations of individuals or companies. It gives creators the exclusive right to earn money from their inventions, artwork, designs or written work. This protection stops others from copying or stealing their ideas.

Intellectual property provides the creators with legal rights that encourages people to develop new ideas and solutions. This leads to innovation in areas such as technology, medicine and arts. The society continues to grow and improve as more people become inventors and creators.

Q. Explain how can you protect your intellectual property?

Protecting Intellectual Property

Protecting intellectual property is important to ensure that creations, inventions and ideas are not copied or misused by others. The **Intellectual Property Organization of Pakistan (IPO Pakistan)** manages the registration of patents, trademarks and copyrights in Pakistan. It ensures that creators and businesses are rewarded for their innovations by safeguarding their legal rights.

Different ways to protect different types of intellectual property are as follows:

- Patents:** Anyone who invents a new product or process can apply for a patent. It gives legal right to stop others from making, using or selling an invention without permission.
- Trademarks:** The brand name, logo or slogan can be registered as a trademark. This protects brand identity and prevents others from using similar marks that may confuse customers.
- Copyrights:** The creative works such as books, music, films or software can be protected by registering them with appropriate copyright authority. Copyright law gives an exclusive right to the owner to use, publish and share his work.
- Trade Secrets:** The business information can be kept confidential such as formulas or recipes. The companies often use legal agreements and strict security measures to keep trade secrets safe.

Exercise Solution

Multiple-Choice Questions (MCQs)

- The key component of digital literacy:**
 - Writing poetry
 - Understanding agricultural methods
 - Using digital tools effectively
 - Practicing public speaking

- Boolean operator used to exclude a term from search results:**
 - OR
 - AND
 - NOT
 - NEITHER
- The essential skill for evaluating online sources:**
 - Guessing the source's credibility
 - Knowing the content creator's name
 - Checking if content is from a trusted entity
 - Reading the content multiple times
- Importance of being specific when formulating a research question:**
 - To ensure it covers a wide range of topics
 - To clearly define what you want to find and avoid vagueness
 - To include as much information as possible
 - To make the research more generalizable
- The meaning of "peer-reviewed" article:**
 - Edited by a single expert
 - Published in a magazine
 - Reviewed by other experts in the field
 - Freely available online
- The key purpose of online libraries:**
 - Providing access to entertainment
 - Offering a variety of academic resources
 - Promoting social media interaction
 - Selling digital books and materials
- An essential component of ethical research:**
 - Collecting data regardless of participant privacy
 - Avoiding plagiarism and giving proper credit
 - Publishing only positive results
 - Ignoring consent if research is important
- The research ethics principle focused on honesty in reporting findings:**
 - Confidentiality
 - Integrity
 - Informed Consent
 - Avoiding Bias
- The option falls outside the category of intellectual property is:**
 - Patents
 - Trademarks
 - Copyrights
 - Physical Properties
- Way for a company to protect a trade secret:**
 - Register it with the IPO
 - Apply for a trademark
 - Keep it confidential and use legal agreements
 - Publish it in a journal

Answers

1. c	2. c	3. c	4. b	5. c	6. b
7. b	8. b	9. d	10. c		

Short Questions

Q.1. How can one ensure the reliability of information found through online research?

The reliability of information found through online research can be ensured by checking if the source is reputable and authored by qualified experts. Verify the information by cross-checking with multiple trustworthy sources. Look for recent and updated content, especially on fast-changing topics. Avoid sources with clear bias or lacking credible references.

Q.2. Why is it important to evaluate the reliability of online sources?

It is important to evaluate the reliability of online sources to avoid using false or misleading information. Reliable sources ensure accuracy in research, support informed decision-making and maintain credibility in academic or professional work.

Q.3. Why is it important to use specific keywords when searching for information online?

It is important to use specific keywords when searching online to narrow down results to the most relevant information. It saves time, improves search accuracy and increases the chances of finding relevant sources. Specific keywords also help to filter out unrelated or unnecessary content.

Q.4. Describe the purpose of a trademark.

The purpose of a trademark is to protect a brand's identity such as its name, logo or slogan from being used by others without permission. A trademark is used by companies to distinguish their products or services from others.

Q.5. How does copyright differ from patent protection?

Copyright is a type of intellectual property rights that protects a person's creative work. A patent is a legal right to stop others from making or selling an invention for a certain period of time. Copyright protects artistic and literary works while patents protect inventions and innovations.

Long Questions

Q.1. Discuss the different types of online research and their purposes, providing examples for each type. (See chapter)

Q.2. Explain the concept of digital literacy and its key components. How does it contribute to effective use of digital tools and resources? (See chapter)

Q.3. Explain the process of developing a clear and focused research question. Illustrate your answer with examples of well-formulated and poorly-formulated research questions.

A research question is the foundation of any research project. It helps the researcher to stay focused and understand exactly what they are trying to explore. A well-developed research question is clear, specific and researchable. It guides the research process by setting a goal and helping in choosing the right methods for collecting and analyzing data.

Features of a Good Research Question

- It focuses on a single issue or problem.
- It is clear and easy to understand.
- It can be answered through research and evidence.
- It avoids personal opinions or unclear language.

Steps to Develop a Clear Research Question

Different steps to develop a clear research question are as follows:

1. **Choose a Broad Topic:** Start with a general area of interest such as education, health, technology, and environment.
2. **Do Preliminary Research:** Read background information to understand current issues, debates and gaps in knowledge.
3. **Narrow Down the Topic:** Focus on a specific aspect, group or issue related to the broad topic.
4. **Identify a Research Problem:** Think about what is unknown, unclear or controversial in focused area. This helps to refine the problem to be addressed by the research.
5. **Define Your Purpose:** Decide whether the research aims to describe, compare, explain or evaluate something.
6. **Formulate the Research Question:** Turn the research problem into a clear, focused, and answerable question. The good research questions are specific, researchable, relevant to the field, clear and concise.
7. **Evaluate and Refine:** Make sure the question is not too broad or too narrow. Revise it for clarity, feasibility and focus.

Example

- **Broad Topic:** Social Media
- **Narrowed Topic:** Impact of social media on student learning
- **Research Problem:** Students spend more time on social media than on studies
- **Research Question:** How does daily use of social media affect the academic performance of high school students?

Examples of Research Questions**Well-Formulated Questions:**

- How does daily use of social media affect the academic performance of college students?
- What are the effects of online learning on student motivation during the COVID-19 pandemic?
- How does exercise frequency influence stress levels in university students?

Poorly-Formulated Questions:

- Is social media bad?
- Tell me about online learning.
- How is the world changing?

Q.4. Discuss the importance of research ethics in maintaining the credibility and reliability of research findings. Explain how unethical practices could affect the research community and society. (See chapter)

Q.5. Discuss the various types of intellectual property and provide examples of each. Explain how each type helps in protecting different kinds of creations and innovations. (See chapter)

SHORT QUESTIONS

Q.1. What is online research?

Online research is the process of finding information about a specific topic using the internet. It involves using various online sources such as articles, reports, videos and websites to gather information.

Q.2. What is the purpose of online research?

The purpose of online research is to find accurate, reliable and up-to-date information to understand a topic or solve a problem efficiently.

Q.3. Why is online research important?

Online research is important because it allows people to access a wide range of information quickly and easily. It helps students to complete assignments and prepare for exams. It allows professionals to stay updated in their fields. It also supports people in making informed decisions in everyday life.

Q.4. List the types of online research.

Different types of online research include general information research, academic research, market research, fact-checking research and health research.

Q.5. What is the purpose of general information research?

The purpose of general information research is to find basic information about a topic. It includes using search engines such as Google to access articles, blog posts, videos and websites. This type of research helps users to understand everyday topics or get quick facts.

Q.6. What is the purpose of academic research?

The purpose of academic research is to find scholarly information for educational purposes. It is used by students, educators and scholars to find reliable content such as books, research papers and academic articles.

Q.7. What is the use of market research?

Market research is used to understand customer behavior, market trends and competition. Businesses and entrepreneurs use market research to make informed decisions about launching new products or services.

Q.8. What is the use of fact-checking research?

Fact-checking research is used to verify whether the information found online is true or false. It involves checking multiple reliable sources to confirm the correctness of facts.

Q.9. What is health research?

Health research is related to health topics such as symptoms, treatments, diseases or healthcare services. It can be used to make better decisions about health.

Q.10. What is meant by digital literacy?

Digital literacy is the ability to find, understand, create and share digital contents. It involves the use of smart devices, software applications, social media platforms, search engines and the Internet. It requires an ability to find, assess and use information from digital sources accurately and responsibly.

Q.11. What is the purpose of evaluating sources in research?

This skill involves checking whether the information found online is reliable. It includes reviewing the author, the website's credibility and whether the content is up-to-date and factual.

Q.12. What are online libraries and research databases?

Online libraries and research databases provide access to academic information. These platforms include digital books, scholarly articles, journals and research papers. The users can access this material from anywhere through internet. They are especially useful for students and researchers who need reliable and scholarly content for their projects or studies.

Q.13. What are academic journals and how can students access them?

Academic journals are collections of articles written by experts in specific fields. Students can access these journals through their college or university libraries or academic platforms such as Google Scholar or JSTOR.

Q.14. What do you mean by research ethics?

Research ethics refer to a set of principles and guidelines followed by researchers to ensure their work is conducted in a responsible, honest and respectful manner. These ethics protect the rights of the participants.

Q.15. Why are research ethics important?

Research ethics are important because they ensure the research process and its outcomes are trustworthy and fair. They protect the rights and safety of participants. They prevent the spread of false or misleading information.

Q.16. What is meant by confidentiality in research?

Confidentiality means keeping participants' personal information and responses private. Researchers must not disclose any details without consent and must protect data from unauthorized access.

Q.17. What is the principle of integrity in research ethics?

The principle of integrity in research means being honest, accurate and transparent throughout the research process. The researcher should not use false data, plagiarize content or misrepresent the findings.

Q.18. What are intellectual property?

Intellectual Property are legal protections given to individuals or businesses for their creations, inventions and brands. It includes both artistic and commercial creative works such as new ideas, writings, designs, music and machines.

Q.19. Why is intellectual property important?

Intellectual property is important because it protects original ideas and creations of individuals or companies. It gives creators the exclusive right to earn money from their inventions, artwork, designs or written work. This protection stops others from copying or stealing their ideas.

Q.20. Give an example of patent.

Suppose a Pakistani engineer invents a new solar panel that increases energy efficiency. He gets a patent for this invention. It will allow him to manufacture or sell this solar panel in Pakistan for a certain number of years.

Q.21. What is the difference between patents and trade secrets in terms of protection?

Patents grant exclusive rights for a certain period of time. Trade secrets can be protected indefinitely if secrecy is maintained. Both methods safeguard valuable intellectual property in different ways.

Q.22. What is copyright?

Copyright is a type of intellectual property that protects a person's creative work. Copyright law covers various types of works such as paintings, photographs, images, music, computer programs, books, poems, blogs, films and plays etc.

Q.23. Why are copyright important?

Copyright laws are important. They ensure that no body uses the copyrighted material without getting permission from the owner. The copyright symbol is usually used with copyrighted material. A violation of copyright is called piracy.

Q.24. What are trade secrets?

A trade secret is a confidential business information that provides a company with a competitive advantage. They can include formulas, recipes or manufacturing processes that are not disclosed to the public.

Q.25. Which government body handles intellectual property in Pakistan?

The Intellectual Property Organization of Pakistan (IPO Pakistan) manages the registration of patents, trademarks and copyrights in Pakistan. It ensures that creators and businesses are rewarded for their innovations by safeguarding their legal rights.

Q.26. How can you protect your intellectual property?

You can protect intellectual property by registering patents, trademarks and copyrights. A patent is used to protect the inventions. A trademark protects brand identity. A copyright gives exclusive right to the owner to use, publish and share his work such as books or music. Trade secrets should be kept confidential and protected through legal agreements.

Multiple Choice Questions

- _____ is the activity of finding information on the internet about a particular topic.
 - Online browsing
 - Online research
 - Digital exploration
 - Digital marketing
- Which of the following is NOT considered a reliable source for online research?
 - Articles
 - Social media posts
 - Research papers
 - Government reports
- Which of the following is NOT a type of online research?
 - Health research
 - Academic research
 - Historical fiction writing
 - Market research
- Which type of research involves finding basic knowledge on a topic?
 - Market research
 - Academic research
 - General information research
 - Health research
- Which search engine is commonly used for General Information Research?
 - Google Scholar
 - Google
 - PubMed
 - Wikipedia

6. What type of online research involves finding scholarly information for educational purposes?
 a. General Information Research b. Academic Research
 c. Market Research d. Fact-Checking Research
7. Which type of research helps businesses to make informed decisions about launching new products or services?
 a. Academic Research b. Market Research
 c. Fact-Checking Research d. Health Research
8. Which type of online research is used to verify the correctness of information?
 a. Fiction writing b. General knowledge
 c. Health research d. Fact-checking research
9. The ability to use digital tools to find, understand, create and share information is called:
 a. Digital communication b. Digital literacy
 c. Digital citizenship d. Computer programming
10. Which device is NOT typically associated with digital literacy?
 a. Smartphone b. Typewriter
 c. Tablet d. Computer
11. Which of the following is NOT part of digital literacy?
 a. Reading e-books b. Evaluating websites
 c. Operating digital devices d. Painting physical canvas
12. _____ are collections of articles written by experts in various fields.
 a. Social media posts b. Academic journals
 c. Personal blogs d. News websites
13. Which of the following sources is usually peer-reviewed?
 a. YouTube videos b. Blogs
 c. Academic journals d. Social media posts
14. Which of the following is NOT a digital resource?
 a. Online article b. Printed textbook
 c. Educational video d. Research database
15. Which of the following refers to the principles for conducting honest and fair research?
 a. Research marketing b. Research ethics
 c. Research design d. Research dissemination
16. Which of the following is NOT a part of ethical research?
 a. Respecting participants b. Plagiarizing content
 c. Keeping data private d. Getting consent
17. Which ethical principle expects researchers to present accurate data and avoid plagiarism?
 a. Consent b. Integrity
 c. Anonymity d. Confidentiality
18. Which ethical principle requires researchers to protect the identity of the participants?
 a. Integrity b. Informed consent
 c. Confidentiality d. Transparency
19. Treating all research participants equally and honoring their rights demonstrates which ethical principle?
 a. Efficient scheduling b. Respect for Participants
 c. Statistical accuracy d. Question phrasing
20. Which term describes the legal protections for original creations like inventions, artistic works and brand identities?
 a. Civil rights b. Intellectual property (IP)
 c. Contract law d. Product safety
21. Which of the following is NOT a type of intellectual property?
 a. Patent b. Trademark
 c. Copyright d. Employment contract

22. Which type of intellectual property right protects new inventions and technical solutions?
 a. Trademark b. Patent
 c. Copyright d. Trade secret
23. Which of the following is an example of patent?
 a. New type of solar panel b. Company logo
 c. Novel literary work d. Original painting
24. Which of the following is NOT protected under trademarks?
 a. Brand name b. Logo c. Slogan d. Films
25. Which type of intellectual property right gives the owner the right to stop others from copying or distributing their work?
 a. Trademark b. Patent
 c. Copyright d. Industrial design
26. Which of the following is NOT protected under copyright?
 a. Secret recipe b. Books c. Music d. Software
27. Which of the following protects a company's secret formula or recipe?
 a. Trademark b. Copyright
 c. Patent d. Trade secret
28. Legal agreements used to protect trade secrets are called:
 a. Public disclosure b. Confidentiality agreements
 c. Patent registration d. Trademark registration
29. A unique bottle shape for a water brand can be protected under:
 a. Trademark b. Industrial design
 c. Copyright d. Patent
30. Which Pakistani organization registers intellectual property rights?
 a. Pakistan Engineering Council
 b. Higher Education Commission
 c. IPO Pakistan
 d. National ICT Board
31. IPO stands for:
 a. International Patent Office
 b. Intellectual Property Organization
 c. Innovation Protection Office
 d. Invention Patent Organization

Answers

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

Entrepreneurship in Digital Age

Q. What is meant by design thinking? Describe key steps of the Design Thinking process with examples.

Design Thinking

Design thinking is a problem-solving method that focuses on understanding users' needs and experiences. It encourages to view a problem from different angles before creating the solution. This method helps businesses to create better products and services. It allows innovative solutions and improved customer satisfaction.

Key Steps in Design Thinking

The key steps in design thinking are as follows:

1. Empathize

The first step of design thinking is to understand the feelings, thoughts and needs of the people who face the problem. This involves listening, observing and asking questions. It helps the designers to see the problem from the user's point of view and create solutions that truly address their needs.

Example

Suppose a new school bag needs to be designed. The best way is to talk to students about their experiences, likes and dislikes. It will help to design the bag that suits the students.

2. Define

The second step in design thinking is to clearly state the main problem based on information gathered during the Empathize stage. A well-defined problem leads to better solutions.

Example

Based on findings, the problem can be defined as: "Students need a lightweight, durable and comfortable school bag that helps them carry their books easily."

3. Ideate

This step is used to generate as many ideas as possible to solve defined problem. The user should think creatively and freely without worrying if the ideas are perfect.

Example

The features of the bag may include soft shoulder straps, waterproof material or extra pockets for organization.

4. Prototype

This step is used to create a prototype that is a simple and early model of the solution. It helps to visualize the idea and allows others to see and interact with it. It is useful for gathering feedback before developing the final product.

Example

A basic model of the school bag can be made using cardboard, fabric or paper to show its size, shape and features.

5. Test

The final step is to test the prototype with real users to gather feedback. It helps to test the performance of the solution and identify areas for improvement. It ensures that the final product meets user needs.

Example

A few students can be asked to use the school bag and share their opinions. The design can be improved based on the feedback.

Q. What are business solutions? How can design thinking be applied to business solutions?

Business Solutions

Business solutions are strategies or methods used by companies to solve problems and improve operations. These solutions help businesses to run more efficiently, meet customer needs and achieve their goals.

Example

Suppose the user owns a small grocery store and often runs out of popular items. A business solution is to restock more frequently or use software to track inventory. This ensures that the popular items are available and customers remain satisfied.

Apply Design Thinking to Business Solutions

Design Thinking is a powerful approach that helps businesses to develop better products and services. It focuses on understanding the user's needs before creating a solution.

Example

A food delivery company wants to develop a new app. The design thinking can be used to first understand how customers place food order food, identify common issues, think about solutions, build a sample app and test it with users. This process helps them to create an app that is user-friendly, efficient and solves customer problems.

Q. Explain the process of creating a business plan and why each step is critical to the success of a new business.

Business Plan

A **business plan** is a written document that describes a business idea, its goals, and the strategies for achieving them. It helps to get prepared for challenges and focus on strategy. This document is essential before starting any business.