

Unit 06

Impacts of Computing

Multiple Choice Questions (MCQs)

MCQ	1	2	3	4	5	6	7	8	9	10
Answer	B	B	B	C	B	B	C	B	A	C

Short Response Questions (SRQs)

Q1. What is the primary objective of safe and responsible use of information sources?

- The primary objective of safe and responsible use of information sources is to ensure that the information is accurate, reliable and fair.
- In today's digital age, the information is easily accessible but not always reliable.
- Therefore understanding and putting into practice safe and ethical use of information sources is crucial.

Q2. How would you distinguish between a reliable and unreliable information source in a real-world scenario?

- The *reliable sources* contain correct and verified information whereas *unreliable sources* contain wrong and unverified information.
- The *reliable sources* provide true, unbiased and useful information while *unreliable sources* provide misleading and biased information.
- The *reliable sources* give information with reliable sources and references whereas *unreliable sources* do not provide verified information.

Q3. Why is it important to identify the sources of both reliable and unreliable information?

- It is important to identify the sources of reliable or unreliable information because it will help to decide whether the information is accurate or not.
- The information from reliable sources can be used in decision making while unreliable sources are avoided for making decisions.
- In areas like healthcare, science and policy making, relying on unreliable information can have serious consequences.

Q4. Could you describe a situation where you would need to apply the principles of safe and responsible use of information sources?

- The principles of safe and responsible use of information sources can be applied when sharing content on social media.

- The sharing of unverified content can cause serious consequences like public panic or hurting someone.
- In such a situation, the responsible use of information ensures that it does not cause any negative impact on others.

Q5. What are some potential consequences of using unreliable information without verifying its credibility?

Some of potential consequences of using unreliable information without verifying its credibility are as follows.

- It can cause confusion and panic.
- It can result in poor decision making.
- Associating with unreliable information can damage your reputation.
- Acting on unreliable information causes financial losses and legal issues.

Q6. How has computing technology facilitated increase connectivity between individuals and communities, both locally and globally?

- Computing has played a significant role in increasing connectivity in various ways.
- It transformed the way people, devices and systems communicate and interact.
- This improvement is driven by several factors including process and analyze large volumes of data in real-time, enabling more efficient communication and decision making.

Q7. What are some specific examples of environmental benefits and challenges that have arisen as a result of increased connectivity through computing?

Benefits

- *Reduced Travel:* Increased connectivity allows remote work and online meetings that reduces the need for business travelling.
- *Green Technologies:* Green technologies have positive impact on the environment.
- *Monitoring the Environment:* Connectivity enables real time monitoring of environment to control pollution and natural disasters.

Challenges

- *E-waste:* The increase in connectivity is increasing electronic waste.
- *Energy consumption:* Data centers and infrastructure required for connectivity consume large amount of energy.
- *Digital divide:* Increased connectivity is increasing digital divide, where some communities can access technology but others do not.

Q8. In what ways has increased connectivity through computing affected cultural exchange and diversity in the digital age?

- The increased connectivity through computing has made the world a global village and people from different cultures can communicate easily.
- This led to the rich exchange of cultural practices, customs and traditions among people and understand various cultures of the world easily.
- The cultural mixing results in a great challenge to maintain their own cultural identities.

Q9. Can you provide specific examples of sources that are considered reliable and sources that are unreliable?

Some examples of **reliable sources** are the following.

- Academic institutions and peer-reviewed publications
- Government websites
- Educational institutions (.edu)

Some examples of **unreliable sources** are the following.

- Social media
- Biased or sensational news
- Outdated or incomplete information

Q10. Can you provide examples of initiatives or technologies that have harnessed increased connectivity for positive social or humanitarian impact, and what lessons can we learn from them?

- *Google Maps*: Helps people navigate and access real-time traffic updates during emergencies.
- *WhatsApp in Disasters*: Used for quick communication and coordination in crises like floods or earthquakes.
- *PayPal or M-Pesa*: Enables easy money transfers, helping families and small businesses.
- *Telemedicine Platforms*: Connect patients in remote areas with doctors for online consultations.

Long Response Questions (LRQs)

Q1. Determine the fundamental concept regarding the safe and responsible use of information sources. Distinguish reliable information from unreliable sources, as well.

Safe Use of Information Sources

Today in this digital age, the information is easily accessible for anyone but it is not always reliable. Therefore, it is important to understand the safe and responsible use of information sources. Some key principles are as follows.

Evaluate The Credibility of Source

Evaluate the credibility of the source by analyzing its reputation and authority in the field. The source should be known for accurate and unbiased reporting.

Beware of Bias and Misinformation

All information sources may contain some degree of bias. The misleading information and fake news are common so it is important to distinguish whether information is based on facts or opinions.

Respect Intellectual Property and Copyright

Intellectual property rights are given to the owner of a creative work. Nobody should use the copyrighted material without the permission of owner.

Avoid Plagiarism

Plagiarism is presenting another person's work as your own without permission. Plagiarism must be avoided and give credit to the original creator and source from where the content is taken.

Report False Information

Any false or harmful information must be reported to the relevant platform or authorities. It helps to stop the spreading of false information.

Reliable vs. Unreliable Information Sources

Reliable Information Sources	Unreliable Information Sources
These sources are trustworthy and respectable.	These sources are not trustworthy and it is difficult to trust them.
They contain correct and verified information.	They contain unverified and wrong information.
They provide proper references and reliable sources with the information.	They provide information without references and reliable sources.

Q2. Imagine you are researching a controversial topic online. In what ways, would you undertake the encountered information sources, identifying and verifying the reliability. Determine the steps you take to ensure safe and responsible use of these sources in your research.

Data Source Verification

To ensure reliable and responsible use of sources while researching a controversial topic, you will take the following steps.

1. Identify and Evaluate Sources

Investigate the background and expertise of the author or organization. Assess the credibility of publisher.

2. Verify Information

Cross check facts with multiple trusted sources to confirm accuracy of data or information. Look for sources that provide evidence to support their claims.

3. Evaluate Bias

Determine if the source has a particular agenda or bias. Verify it whether the source presents multiple viewpoints or only one side argument.

4. Assess the Quality of Information

In academic research, check if the information has been peer-reviewed or not. Peer-reviewed information is more authentic. For non-academic sources, evaluate if the information meets professional standards or not.

5. Use Tools and Resources

Utilize reputable fact checking websites such as FactCheck.org to verify controversial claims. You can also use tools and techniques for digital literacy to assess the reliability of online information such as checking domain credibility.

Q3. Argue about the increased connectivity provided by computing technology, facilitating communication between individuals, and what are the key technological advancements driving this phenomenon?

Increased Connectivity by Computing

Computing has played a significant role in increasing connectivity in various ways. It transformed the way people, devices and systems communicate and interact.

Following are **key technological advancements** responsible for this improvement in connectivity.

Internet and Networking

The internet has made it easier for people to connect and share information all over the world. The connectivity allows us to communicate in real-time by using email and instant messaging.

Mobile Technology

Smartphones and tablets allow us to communicate with each other anywhere in the world at any time economically. It is like a mini computer in your pocket. The connectivity makes it easy to use email, social media apps anywhere in the world.

Social Media

Social networking sites like Facebook, Twitter, YouTube, etc. were made possible by computing technology. The increased connectivity revolutionized the way people communicate and share information across the world.

Cloud Computing

Cloud computing has made it possible for individuals and organizations to remotely access and store data, apps and services. The increase in connectivity enables real-time document sharing and data access from many platforms and places.

4G and 5G Networks

Fourth-generation (**4G**) and fifth-generation (**5G**) cellular networks have drastically increased mobile communication. These networks provide faster data speed and increased capacity for high-quality video calls and internet browsing.

Q4. Distinguish the environmental consequences of increased connectivity through computing, including the impact on energy consumption and electronic waste, and how can these challenges be addressed?

Environmental Consequences of Increased Connectivity

The increased connectivity through computing has numerous benefits on one side but it has also significant harmful environmental consequences. Two major issues are the following.

Energy Consumption

- Data centers which store a large amount of data online, consume massive amount of energy.
- Manufacturing electronic devices such as smartphones and laptops requires energy and generates waste.

Electronic Waste (E-Waste)

- Rapid advancements in technology lead to the replacement of devices which results in a growing amount of e-waste.
- Electronic devices contain toxic materials like lead, mercury and cadmium which can pollute soil and water if not disposed properly.

Addressing The Challenges

The above challenges can be resolved in the following way.

Energy Efficiency

- The data centers and network infrastructure should be shifted to the renewable energy sources like solar and wind power.
- Develop and use energy-efficient devices with low power processors and LED displays.

E-Waste Management

- Encourage manufacturers to design devices which can be recycled easily.
- Implement take-back programs which allows consumers to return devices for proper recycling or renewal.

Q5. Analyze the ways via which increased connectivity impacts the computing, affecting various cultures and societies. Critically evaluate the potential positive and negative human impacts, such as changes in social behavior, privacy concerns and the digital divide.

Impacts of Connectivity

Increased connectivity has a big and wide impact on culture. This is due to advancements in technology and Internet. Following are some positive impacts of connectivity on humans.

Positive Impacts

- **Global Village:** It has made the world a global village where people from various cultures can easily connect and share their ideas.
- **Awareness of Cultures:** The connectivity made it possible for people from different cultures to communicate and understand variety of cultures in the world.
- **Economic Opportunities:** It enables remote work, e-commerce and digital business that helps in economic growth.

Negative Impacts

- **Privacy Concerns:** The individuals are exposed to data breaches and misuse of personal information over the Internet.
- **Digital Divide:** Some communities have access to technology and getting benefits from it whereas others do not. This can result uneven resource distribution and environmental impacts.
- **Social Behavior:** Replacing face-to-face interactions with digital communication is leading to social isolation.

Critical Evaluation

While connectivity has transformed the way societies interact but it is essential to address its negative aspects.

- **Data Privacy:** Promoting data privacy laws and encouraging ethical technology practices can help reduce privacy concerns.
- **Digital Divide:** Providing affordable access to technology and the internet helps close the digital gap and include everyone.
- **Social Behavior:** Maintaining a balance between online and offline interactions can help maintain healthy social behaviors.