Chapter – 5
Contemporary Technology Questions with its Solutions

Question Pattern:
Full Forms: 1 Mark Type
Technical Terms: 1 MarkType
Short Q/A : 2 Marks Type

1. Write the full forms of: *[1 Mark Type]*

1. AI :	Artificial Intelligence
2. E-governance:	Electronic Governance
3. G2B	Government to Business
4. G2C :	Government to Citizen
5. G2E:	Government to Employee
6. G2G	Government to Government
7. GPS:	Global Positioning System
8. IaaS :	Infrastructure as a Service
9. IBM:	International Business Machine
10. IoT :	Internet of Things
11. ML:	Machine Learning
12. NLP:	Natural Language Processing
13. PaaS:	Platform as a Service
14. PDA:	Personal Digital Assistant
15. SaaS:	Software as a Service
16. STT:	Speech to Text
17. VM :	Virtual Machine
18. VR :	Virtual Reality

2. Give technical terms of the following: *[1 Mark Type]*

a. **Networked computing facilities providing remote data storage via the internet.** ⇨ Cloud Computing

b. **Any relationship between the public administration and the enterprises.** ⇨ G2B (Government to Business)

c. **A technology that allows transmission of data via a computer or any other wireless enabled device without physical link.**
⇨ Mobile Computing

d. **Relationship between the subject of public administration and the citizen.** ⇨ G2C (Government to Customer)

e. **A branch of computer science that aims to create intelligent machines.**
⇨ Artificial Intelligence

f. **A computer technology that enables a device to recognize and understand spoken words, by digitizing the sound and matching its pattern against the stored programs.**
⇨ Speech recognition

g. **The field of computer science and engineering concerned with creating robots, devices that can move and react to sensory input.**
⇨ Artificial Intelligence in Robotics.

h. **A technology that allows people to enter and interact with the three-dimensional computer graphics world.**
⇨ Virtual Reality

i. **Learning through the electronic media.**
⇨ E-learning (Electronic Learning)

j. **The combination of public and private cloud.**
⇨ Hybrid cloud computing

k. **The use of computer technology to create simulated environment.**
⇨ Virtual Reality (VR)

l. **A set of services provided by the government to public via electronic media specially using internet.**
⇨ E-Governance (Electronic Governance)

3. Answer the following questions in one sentence: *[1 Mark Type]*

a. What is contemporary technology?

Ans: Contemporary technology refers to the **modern or emerging technology** that the present world is embracing which includes computer technology, internet and smartphones.

b. What is cloud computing? Define with its examples.

Ans: Cloud computing is the use of **remote servers** and **hosted services** over the internet.
Examples: Amazon AWS, Google Drive, Dropbox, Microsoft Azure.

c. Write any two benefits of cloud computing.

Ans: Any two benefits of cloud computing are:

1. Cloud computing provides service to the companies at the lowest rates.
2. The data stored in one location can be easily accessed from different remote places.

d. What is artificial intelligence?

Ans: Artificial intelligence is a branch of computer science that **aims to create intelligent machine** which has **ability to think**, **make decision** on its own, **analyze and learn from the past** experiences.

e. What is VR?

Ans: Virtual Reality (VR) is the use of **computer technology to create a simulated environment** which is created with computer hardware and software that makes user feel like a real object when presented to them.

f. Define E-governance.

Ans: Electronic Governance (E-governance) is the **implementation of information and communication technology (ICT)** to carry out **different government services using internet** that transfer services and information between government agencies, citizens, business organization and its employees.

g. What is IoT?

Ans: Internet of Things (IoT) refers to the **network of physical objects** that are **embedded with sensors, software and other technologies** for purpose of exchanging data with other devices over the internet.

h. Define mobile computing.

Ans: Mobile computing is a technology that allows transmission of data, voice, and video any time and anywhere over the wireless network infrastructure.

4. Answer the following questions: [2 Marks Type]

a. Define cloud computing with its example. List any three services of cloud computing with its example.

Ans: Cloud computing is the use of **remote servers** and **hosted services** over the internet.
Examples: Amazon AWS, Google Drive, Dropbox, Microsoft Azure.

Three services of cloud computing with its example are:

⇒ **Cloud Services and its examples:**

1. IaaS (Infrastructure as a Service) : Rackspace.com, GoGrid
2. PaaS (Platform as a Service) : AWS Elastic Beanstalk, Google App Engine.
3. SaaS (Software as a Service): Microsoft Office 365, Google Drive, Email Services.

b. What are the types of clouds that explain it with its example?

Ans: There are basically three types of cloud they are:

1.Public Cloud:
Public clouds are managed by third parties which provide cloud services over the internet to the public, these services are available as pay-as-you-go billing models.
Example: Google Workspace, Amazon Web Services (AWS), Dropbox, and Microsoft offerings like Microsoft 365 and Azure.

2.Private Cloud:
Private clouds are distributed systems that work on private infrastructure and provide the users with dynamic provisioning of computing resources. Instead of a pay-as-you-go model in private clouds, there could be other schemes that manage the usage of the cloud. **Example:** Amazon VPC, HPE, VMware, and IBM

3.Hybrid Cloud:
A hybrid cloud is a heterogeneous distributed system formed by combining facilities of the public cloud and private cloud. For this reason, they are also called heterogeneous clouds.
Example: AWS Outposts, Azure Stack, Azure Arc, Azure VMware Solution.

c. What are the advantages of cloud computing?

Ans: The advantages of cloud computing are:

1. Cloud computing provides service to the companies at the lowest rates.
2. The data stored in one location can be easily accessed from different remote places. 3. The cloud computing platform is very reliable as the data stored is secured. 4. Cloud computing helps to access the latest application any time without spending time and money on installations.

d. What is AI ? Mention the application areas of AI.

Ans: Artificial intelligence is a branch of computer science that **aims to create intelligent machine** which has **ability to think**, **make decision** on its own, **analyze and learn from the past** experiences.

The application areas of AI are:

1. Artificial Intelligence in Health Care
2. Artificial Intelligence in Robotics
3. Artificial Intelligence in Education
4. Artificial Intelligence in Gaming.

e. What is VR? Mention its application areas.

Ans: Virtual Reality (VR) is the use of **computer technology to create a simulated environment** which is created with computer hardware and software that makes user feel like a real object when presented to them.

The **application areas of VR** are:

1. It can be used in medical studies to enable students to know the human body structure.
2. It can be used in entertainment like in games and movies to make the gaming experience more real.
3. It can be used in driving schools as it gives a real look of roads and traffic.
4. It can be used in military training for the soldiers to get familiar with different areas in the battlefield.

f. Why is mobile computing necessary in the modern era? Write any two importance of it.

Ans: Mobile computing is convenient, where users have access to information and computational resources anytime and anywhere.

Some importance of mobile computing are:

1. Location Flexibility:

There is no need to stay in a specific location to perform computing activities due to the invention of mobile computing.

2. Time saver:

Mobile computing is a great invention that allows us to connect with friends and family anytime.

g. Briefly mention the principles of mobile computing.

Ans: The principles of mobile computing are:

1. Portability
2. Connectivity
3. Interactivity
4. Individuality

h. What is IoT? Clarify with example.

Ans: Internet of Things (IoT) refers to the **network of physical objects** that are **embedded with sensors, software and other technologies** for purpose of exchanging data with other devices over the internet.

Example: smartwatches, IP-based cameras (or IP cameras).

i. What is IoT? Write any two importance of it.

Ans: Internet of Things (IoT) refers to the **network of physical objects** that are **embedded with sensors, software and other technologies** for purpose of exchanging data with other devices over the internet.

The importance of IoT are:

1. IoT makes things smart and enhances life through the use of data.
2. The sensor devices in IoT technologies detect and measure any change in the environment and report on their status.

j. What is E-Government? What are the four types of E-government service?

Ans: Electronic Governance (E-governance) is the implementation of information and communication technology (ICT) to carry out different government services using internet that transfer services and information between government agencies, citizens, business organization and its employees.

Types of E-government service are:

1. Government to Citizen
2. Government to Business
3. Government to Employee
4. Government to Government

k. How can public get benefited from the e-governance services?

Ans: Some of the benefits that public gets from e-governance services are:

1. E-Governance greatly simplifies the process of information accumulation for citizen and business.
2. It leads to automation of services, ensuring that the information is easily available to all citizens.
3. E-governance can harness modern technology to improve the processing of large volume of data and other administrative operations.
4. E-governance increases government staff productivity, less paper management and reduces overheads.

l. Explain the different types of e-Government services.

Ans: The various types of e-government services are:

1. Government to Citizen (G2C)

Government to Citizen (G2C) is the **online non-commercial interaction** between local and central government and private individual. It includes basic citizen services such as license renewals, ordering of birth/death/marriage certificates and filing of income taxes.

2. Government to Business (G2B)

Government to Business (G2B) is the **online non-commercial interaction** between local and central government and commercial business sector. It includes policies, memos, rules, and regulations, registering business, obtaining permits, payments of taxes.

3. Government to Employee (G2E)

Government to Employee (G2E) is the online non-commercial interaction between government organization and the government employees. It includes provision of human resources training and development that improve the day-to-day function.

4. Government to Government (G2G)

Government to Government (G2G) is the online non-commercial interaction between government organizations, departments and authorities and other government organizations department and authorities.