Convergence of Technologies

Very Short Answer Type Questions

Question 1.
What do you mean by convergence of technology?

Answer:
Convergence of technology is the interaction of two or more different technologies in a single device or system.

Question 2.
How to make the convergence technology possible?

Answer:
To make the convergence technology possible, high-bandwidth networks, high-speed Internet access, compression of software and hardware that combines one or more technologies and takes advantages of the new methods of connectivity are required.

Question 3.
Name the technology that allows to send and receive the signals of various devices.

Answer:
Communication technology is used to send and receive the signals of various devices such as radio, television, telephone or satellite from one location to another.

Question 4.
How is computer technology differ from communication technology?

Answer:
Computer technology is the activity of designing, constructing and programming of the computer system while communication technology is the activity of designing, constructing and maintaining communication system.

Question 5.
Name the term used for digital distribution of television content over Internet.

Answer:
Internet television or online television is the term used for digital distribution of television content over Internet.

Question 6.
What do you understand by E-Banking?

Answer:
E-Banking is defined as the automated delivery of new and traditional banking products and services directly to customers through electronic and interactive communication channels.

Question 7.
Name the method used for exchanging digital messages.

Answer:
E-mail is the method used for exchanging digital messages.

Question 8.
What is the use of Voice over Internet Protocol?

Answer:
Voice over Internet Protocol (VoIP) technology allows a user to use the Internet to make and receive telephone calls.

Short Answer Type Questions

Question 1.
Describe 3C's of technologies.

Answer:
3Cs of technologies that are described as follows:
Computer Technology Computer technology is the activity of designing, constructing and programming of the computer system. Innovation of computer technology in today's world has made the communication devices (like television, mobile etc.,) attached with it for communication across the latest devices and services. Communication Technology It is the activity of designing, constructing and maintaining communication systems. It is popularly known as ICT. It includes communication device or application such as radio, television, etc that allows to send and receive signals of various devices. ICT is often used as an extended synonym for Information Technology (IT). Content Technology Using the content technology, content is displayed over the Internet through Websites and stored through different types of media such as CDs, DVDs, Pen drives etc. When anything passes from computer, it becomes digital content and can be universally shared and communicated virtually.

Question 2.
Define television and radio broadcasting system

Answer:
Broadcast on Television and Radio are primary means by which news and entertainment are delivered to the public virtually around the world. The term broadcasting refers to the airborne transmission of electromagnetic audio signals (radio) or audio visual signals (television) that are readily accessible to a wide population via standard receivers. Broadcasting has been used for private recreation, non-commercial exchange of messages, experimentation, self-training and emergency communication such as ATV (Associated Television).

Question 3.
Explain the uses of Internet radio.

Answer:
It is an audio service transmitted via Internet. It is broadcasted using the Internet as the connection to the radio, rather than radio waves. The basic requirement to use Internet radio is that you must have a broadband Is net connection at your home (or wherever you use the radic; and a PC in order to listen to radio stations via Internet.

Question 4.
What is the use of World Wide Web as a application of convergence?

Answer:
It is a system of Internet servers that supports hypertext and multimedia to access several Internet protocols on a single interface. It is a way of exchanging information between computers on Internet, try to tie all the information together into a vast collection of interactive multimedia resources.

Question 5.
Now-a-days, a mobile phone is used as an entertainment device, explain.

Answer:
Mobile phones can do much more than making calls and sending text messages. The fifth generation mobile phones include the advance power of technology as high-resolution video camera to obtain HD images/ videos, latest versions of audio and video players and also an operating system fdr better gaming experience. These types of mobiles are known as smartphones. So, it can say that a mobile phone is a fully loaded entertainment device.

Long Answer Type Questions

Question 1.
Give an example of impact of technological convergence in daily life.

Answer:
The impact of technological convergence in our daily life can be best exemplified with mobile phones.
Apart from the basic purpose of mobile telephone, the latest cellphones support multiple features like:

(i) Internet and E-mail access.
(ii) Multimedia applications like music/video playback and playing games.
(iii) Sending messages.
(iv) Audio and video conferencing.
(v) Camera for images and videos.
(vi) Providing maps for finding locations.
(vii) Basic computer applications like creating documents, presentations, calendar, calculator, dictionary etc.
(viii) The incorporation of all these technologies into a single device has led to the emergence of smart phones, which eliminates the need to carry multiple devices.

Question 2.
Explain the usage of Set-Top Box (STB) and Multi-purpose entertainment devices.

Answer:
Set-Top Box (STB) It is an electronic device that generally contains a tuner card and connects to a television set as an external source of signal, turning the source signal into a content form that can be displayed on the television screen or other display device. It is also known as Set-Top Unit (STU). It is a device that enables a television set to become a user interface to the Internet.
Multi-Purpose Entertainment Devices These devices are used to play videos, listening to music and radio, play video games and much more through a single device, e.g. iPad, iPod, Tablets, PCs, X-Box gaming console etc.

Question 3.
What are the types of convergence. Explain them.

Answer:
Digital Convergence

It is the collection of underlying digital technology components and features such as voice, texts, videos, pictures, broadcasts, presentations, streaming media, global connectivity and personalised services.

It refers to the convergence of four industries into one Conglomerate (Combination of two or more enterprises)— ITTCE (Information Technology, Telecommunication, Consumer Electronics and Entertainment).

Messaging Convergence

It means integrating SMS with voice, e.g. Voice SMS (voice instead of text) and Spin Vox (voice to text). Due to change in communication, the main problem that arises for operators is to adjust all aspects of their business, including their mobile, television and Internet networks that are converging and progressing day-by-day. In addition, today's wide variety of messaging options, including SMS, MMS, E-mail, Instant messaging and Video sharing are creating challenges for users and operators to manage it.

Media Convergence

It involves the interlocking of computing and IT companies, telecommunication networks and content providers from the publishing world of newspapers, magazines, music, radio, television, films and entertainment software's. It brings together the "3Cs" and is the direct convergence of the digitisation of media content and the popularisation of the Internet.

Device Convergence

It means the trend in network device architecture to support different networking paradigms in single system.
e.g. communication and imaging technologies on a mobile device designed to make calls and take pictures. Both are unrelated technologies that converge on a single device.

Question 4.
Define Voice over Internet Protocol (VoIP). Also explain its advantages of using VoIP

Answer:
VoIP is an IP telephony term for a set of facilities used to manage the delivery of voice information over Internet. It enables a user to make cheap telephone calls over a broadband Internet connection, instead of using a regular telephone service. A major advantage ot VoIP is that it avoids the tolls charged by ordinary telephone service.
A user can make a call locally or in other parts of (JS or Canada, or anywhere else in the world, eliminating long distance fees by using a VoIP service. The concept of VoIP is used in wireless LAN networks and sometimes referred to as wVoIP, VoFi, VoWi-Fi and Wi-Fi VoIP.

Question 5.
Explain Fax over Internet Protocol (FoIP).

Answer:
This application enables the interworking of standard fax machines with packet networks. It accomplishes this by extracting the fax image from an analog signal and carrying it as a digital data over the packet network. The E-mail fax system allows user to send and receive faxes using a regular fax number(s) over the Internet by using any

E-mail account. Fax machines, fax servers and fax services continue to evolve towards a FoIP strategy (sometimes referred to as VoIP Fax)

Question 6.
Why do we use Internet Protocol Television (IPTV)?

Answer:
It is a process of transmitting and broadcasting television programs through the Internet using IP. Any person who watches a clip online, is experiencing a form of IPTV.
For user's comfort, telecommunication companies started offering television programming through their high speed networks.

This makes it possible for telcos to offer the quadruple play, which is a combination of wireless phone, Internet, land-line phone and TV programming. It provides an integrated environment to deliver broadcast quality video over the IP-based communication using high speed Internet broadband network such as DSL high speed Internet cable and T1, T2 and T3 lines.

Question 7.
Explain video conferencing.

Answer:
It is a communication technology that integrates video and audio to connect users anywhere in the world as if they are in the same room.

Video conferencing term usually refers to communication between two or more users who are in at least two different locations and it often includes multiple people at each location. Each user or group of users who are participating in a video conference typically must have a computer, a camera, a microphone, a video screen, a sound system and communication technology' (Internet satellite based system or other communication technology).

Through video conferencing, participants can see and hear each other in real-time allowing natural face-to-face conversations and visual elements that are not possible with voice only communication technology, e.g. mobile phone.

Question 8.
What makes Internet telephony so popular?

Answer:
Internet telephony refers to the science and technology for integrating telephone services into a computer networks.
It converts analog voice signals into digital voice signals and then, converts them back again. It also transmits the signals using data packets.

By using this system, a person can make long distance calls free of cost, only Internet charges will be change and also, both parties must have the suitable software's.

Application Oriented Questions

Question 1.
The following paragraph describes the term "Convergence of Technologies".
(i) ……..of technology is defined as the interlinking of (ii)……..and other information technologies such as media, (iii) ………and (iv)……..networks that has arisen as a result of (v)……..and popularisation of Internet as well as activities, products and (vi)…………in digital media space. Convergence also refers to the phenomena of group of (vii)………which are developed for one use but it is being (viii)……….in many different, contexts.
Fill in the blanks with words listed below:
utilised, evaluation, services, computing, convergence, communication, technologies, content

Answer:
(i) Convergence
(ii) computing
(iii) content
(iv) communication
(v) evaluation
(vi) services
(vii) technologies
(viii) utilised

Question 2.
Ram is the CEO of On Air Lid. This company has offices in Mumbai, Kolkata, Delhi and Sri Nagar. In order to communicate with all offices at the same time, Ram has decided to use video conferencing.
Discuss:
(i) What is video conferencing? What all equipments are needed to use video conferencing?
(ii) What advantage does it offer?
(iii) What is the disadvantage of using video conferencing?

Answer:
(i) Video conferencing is a communication technology that integrates video and audio to connect users anywhere in the world as ii they are in the same room. It uses a computer, video camera, microphone, video screen and a sound system.
(ii) It is an extremely useful method for communication at long distances. It saves time and expense of travel.
(iii) It is costly to implement and requires special hardware.

Question 3.
Sakshi uses a computer to send E-mail to her brother in England.
(i) What is a computer?
(ii) What is an E-mail?
(iii) How can she send an E-mail?

Answer:
(i) Computer is an electronic device used to process and transfer data between the devices attached with it.
(ii) E-mail, i.e. electronic mail is a system for receiving, sending and storing electronic messages using Internet.
(iii) She can send E-mail through Internet.

Question 4.
Now-a-days, we have the opportunity to subscribe the services like Tata sky that uses a set-top box to bring all sort of multimedia technologies via satellite directly to our homes.
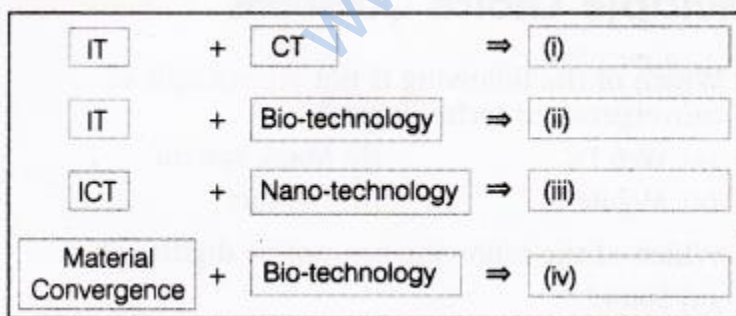(i) Name few examples of digital television connection.
(ii) What is a set-top box?

Answer:
(i) Dish TV, Reliance BIG TV and Airtel digital TV.
(ii) A Set-Top Box (STB) is an information appliance device.

Question 5.
The convergence of two or more technologies results in the emergence of a new technology. In the below figure, you have to identify the name of the emerging technology to which these existing technologies will converge to.

Answer:
(i) ICT
(ii) Bio-Informatics
(iii) Material Convergence
(iv) Intelligent Bio-Science

Multiple Choice Questions

Question 1.
Which of the following statement is not true for technological convergence?
(a) It has changed the way we communicate with others.
(b) It has removed the entry barriers across the IT.
(c) It combines two or more functions that have separate features into a single function.
(d) Bringing change in the Internet technology.

Answer:
(d) Bringing change in the Internet technology does not belong to technological convergence as technological convergence is just the combination of three types named communication technology, computer technology and content technology.

Question 2.
content technology.
Which of the following statement is true regarding media convergence?
(a) It brings together the "3Cs"-Computing, Communication and Content.
(b) It includes SMS, MMS, E-mail, instant messaging and video sharing.
(c) Its features are voice, texts, video, pictures, broadcasts, presentation etc.
(d) It includes streaming media, global connectivity and personalised services.

Answer:
(a) Media convergence is basically interlocking of computing and information technology companies as it is known to bring together the "3Cs".

Question 3.
Which of the following is not a part of the convergent devices?
(a) Set-Top Box
(b) Internet TV
(c) Multi-Play Mobiles
(d) E-Business

Answer:
(d) E-Business is a service provided by convergent technologies

Question 4.
Which service provides delivery of banking products and services directly to the customers through electronic and interactive communication channels?
(a) E-Banking
(b) E-Business
(c) E-Learning
(d) E-Storing

Answer:
(a) E-Banking is the automated delivery of new and traditional banking products and services directly through electronic and interactive communication channels.

Question 5.
This technology meets the challenges of combining the voice and packet networks.
(a) IPTV
(b) FoIP
(c) VoIP
(d) IATV

Answer:
(c) VoIP meets the challenges of combining voice and packet networks by allowing both voice and signaling information to be transported over packet network.

Question 6.
This application enables the interworking of standard fax machines with packet networks.
(a) IPTV
(b) FoIP
(c) FOTP
(d) IATV

Answer:
(b) FoIP accomplishes this by extracting the fax image from an analog signal and carrying it as digital data over the packet network.

Question 7.
IPTV provides an integrated environment to deliver broadcast quality video using broadband networks.
(a) high speed Internet
(b) Internet telephony
(c) computer technology
(d) FoIP

Answer:
(a) Broadcast quality video is delivered using high speed Internet broadband network.

Question 8.
To make video conferencing possible, users must have
(a) Computer
(b) Sound system
(c) Microphone
(d) All of these

Answer:
(d) To make video conference, a user typically must have a computer, camera, microphone, video screen, sound system, communication technology, Internet satellite based system or other communication technology.

Question 9.
It is an application that allows users to view and record live television.
(a) Internet
(b) Windows media center
(c) Internet radio
(d) Internet telephony

Answer:
(b) Windows media center allows users to view and record live television and that is why included in various versions of Windows.

Question 10.
By using this application, a person can make – long distance calls free of any call charges.
(a) Internet radio
(b) Internet voice
(c) Internet telephony
(d) Internet chatting

Answer:
(c) Internet telephony is having the VoIP feature which enables it to make a long distance call free of cost.

Fill in the Blanks

Question 1.
Merging of two or more entities to make a new entity, is termed as…………..

Answer:
convergence

Question 2.
3Cs technologies refer as and …………. content technology.

Answer:
communication, computer

Question 3.
……… is a way of transferring information between the various devices.

Answer:
Communication

Question 4.
………….. is helpful in mixing the text, sound, graphics, video, animation etc.

Answer:
Content technology

Question 5.
………. are used in cable television and satellite television systems.

Answer:
Set-Top boxes

Question 6.
The ……….. gaming console is a multi-purpose entertainment device.

Answer:
X-Box

Question 7.
E-Banking services depends on ………. system.
Answer:
automated

Question 8.
………….. is broadcast using transmitters at fixed locations.

Answer:
Conventional radio

Question 9.
……… technology lets you use the Internet to make and receive telephone calls.

Answer:
VoIP

Question 10.
…………. is a digital video recorder and media player developed by Microsoft.

Answer:
Windows media center

True or False Questions

Question 1.
Technological convergence is the tendency for different technological systems to evolve toward performing similar tasks.

Answer:
True
It has such type of tendency because it makes possible for media organisations to deliver text, audio and video material over the same wired and wireless connections.

Question 2.
The convergence of Internet technologies has led to a new technology term-ICT.

Answer:
False
The convergence of Internet technology that has not led to a new technology term-ICT.

Question 3.
E-mail has become the preferred method for both personal and business communication.

Answer:
True
An E-mail is having many features such as receiving, sending and storing electronic messages and it has gained universal popularity also, which makes it possible to be preferred for both personal and business communication.

Question 4.
Internet Radio is broadcast using the Internet as the connection to the radio rather than radio waves.

Answer:
True
It uses the Internet as the connection to the radio rather than radio waves that broadcast using transmitters at fixed locations.

Question 5.
WWW is a way of exchanging information on Internet.

Answer:
True
The World Wide Web (WWW) is a way of exchanging information between computers on Internet. It tries to tie a vast collection of information together so that users can access it according to their need.

Question 6.
Internet telephony refers to the science and technology for Integrating telephone services into computer networks.

Answer:
True
Internet telephony uses the technology Voice over Internet Protocol (VoIP), which makes it possible for integrating telephone services into computer networks.

Question 7.
Mobile phones are used for just making calls and sending messages.

Answer:
False
Mobile phones are not just used for making calls but it can also be used for many other works such as using Internet, making video conferencing, paying the bills etc.

Question 8.
An Internet enabled smartphone is developed by Microsoft.

Answer:
False
It is not necessary that every Internet enabled smartphone is developed by Microsoft, there are many Internet enabled smartphones developed by other companies also.