

**THE STATE COMMITTEE FOR COMMUNICATION,  
INFORMATIZATION AND TELECOMMUNICATION  
TECHNOLOGIES OF THE REPUBLIC OF UZBEKISTAN TASHKENT**

**UNIVERSITY OF INFORMATION TECHNOLOGIES**

“FOREIGN LANGUAGES”

DEPARTMENT

## **“Television Technologies”**

The methodical manual for the second year students in the direction  
of “Television Technologies”

Tashkent -2014

Тузувчи: “Чет тиллар” кафедраси ассистенти  
Ходжакулова Наргиза Хосияткуловна

## KIRISH

Ўзбекистонда ахборот технологияларининг жадал равишда ривожланиши хорижий тилларни ўрганиш ва уларни ўргатиш масаласида муҳим аҳамият касб этади. 2012 йил, 10 декабрда “Чет тилларни ўрганиш тизимини янада такомиллаштириш чора-тадбирлари тўғрисида”ги ПҚ-1875-сон қарорининг қабул қилиниши бўлса ушбу йўналишда амалга оширилаётган ишларга мамлакат миқёсида жадаллашишига ва чет тилларидан дарс берувчи ҳар бир ўқитувчига аниқ вазифаларни юклади.

Мазкур “Television Technologies” the methodical manual for the second year students in the direction of “Television Technologies” методик қўлланма ўқувчиларимизга ушбу йўналишда замонавий ахборот технологиялар соҳасида учраб турувчи инглиз тили термин ва сўзларини ўрганишда ёрдам беради деган умиддамиз. Ушбу услубий қўлланма “АКТ соҳасида “Телевизион технологиялари” йўналиши 2-босқич талабалари учун мўлжалланган, 8 та дарсдан иборат. Ҳар бир дарс ўз ичига мутахассисликка оид матн, матнда ишлатилган грамматикага ва лексикага доир машқларни ўз ичига олган.

Мазкур услубий қўлланма талабалар билан мустақил ишлаш, талабанинг ўз йўналиши бўйича билим ва куникмаларини ошириш, берилган мавзулар асосида фикрларини оғзаки нутқ орқали ифода этиш, берилган машқлар ёрдамида мавзуни чуқурроқ ўрганиб мустахкамлаш, сўз бойлигини кенгайтириш ва ўқиш техникасини ошириш учун мўлжалланган.

Мавзуни мустахкамлаш учун келтирилган машқлар турли кўринишларда булиб талабаларнинг мантикий, граматик ва лексик билим кўникмаларини оширишга, соҳага оид терминларни тушиниши ва матн маъносини чуқур таҳлил қилишга қаратилганлиги талабаларнинг соҳага оид мавзуларда фикрини оғзаки баён этиш қобилиятини ўстиради.

“АКТ соҳасида иқтисодиёт ва менежмент” факультети илмий услубий кенгашида кўриб чиқилган ва нашр этишга тавсия этилган. (Баённома № 16. 2014)

**Такризчилар:**

**В.Х. Газиева.** ТАТУ, АКТ с ИМ факультети  
Чет тиллари кафедраси мудири

**Л.Т.Ахмедова.** ЎзДЖТУ, “Тил ўргатиш методикаси”  
Кафедраси профессор ўқитувчиси

Тошкент Ахборот Технологиялари Университети, 2014.

# **Content**

- 1. Lesson 1. The evolution of TV**
- 2. Lesson 2. Smart TV(1) Reading**
- 3. Lesson 3. Smart tv (2) listening**
- 4. Lesson 4. . The role of Computers in Television Technologies**
- 5. Lesson 5. LCD, LED vs PLASMA screens**
- 6. Lesson 6. Part's of TV set (inside devices)**
- 7. Lesson 7. Tashkent TV Tower**
- 8. Lesson 8. The early development of cinema in Britain**
- 9. Glossary**

## Lesson 1. The evolution of TV

### *New words*

1. Fellow- a person in the same position, involved in the same activity, or otherwise associated with another

2. Transmit - cause (something) to pass on from one person or place to another

3. Dominate- have power and influence over

4. Expand - become or make larger or more extensive

5. Generate- cause (something, esp. an emotion or situation) to arise or come about

6. Simultaneously- at (one and) the same time , at the same instant/moment , at once , concurrently , concomitantly ;

(all) together , in unison , in concert , in chorus

7. Receiver- 1) the part of a telephone apparatus contained in the earpiece, in which electrical signals are converted into sounds; 2 a person who gets or accepts something that has been sent or given to them

8. Degrade- 1) reduce (someone) to a lower rank, especially as a punishment; 2) reduce (energy) to a less readily convertible form.

9. Concern- - be relevant or important to; affect or involve

### **Read the text.**

The beginnings of mechanical television can be traced back to the discovery of the photoconductivity of the element selenium by Willoughby Smith in 1873, the invention of a scanning disk by Paul Gottlieb Nipkow in 1884 and John Logie Baird's demonstration of televised moving images in 1926.

### **Electronic television**

In 1908 Alan Archibald Campbell-Swinton, fellow of the Royal Society (UK), published a letter in the scientific journal *Nature* in which he described how "distant electric vision" could be achieved by using a cathode ray tube (or "Braun" tube, after its inventor, Karl Braun) as both a transmitting and receiving device, apparently the first iteration of the electronic television method that would dominate the field until recently. He expanded on his vision in a speech given in London in 1911 and reported in *The Time* and the Journal of the Röntgen Society. In a letter to *Nature* published in October 1926, Campbell-Swinton also announced the results of some "not very successful experiments" he had conducted with G. M. Minchin and J. C. M. Stanton. They had attempted to generate an electrical signal by

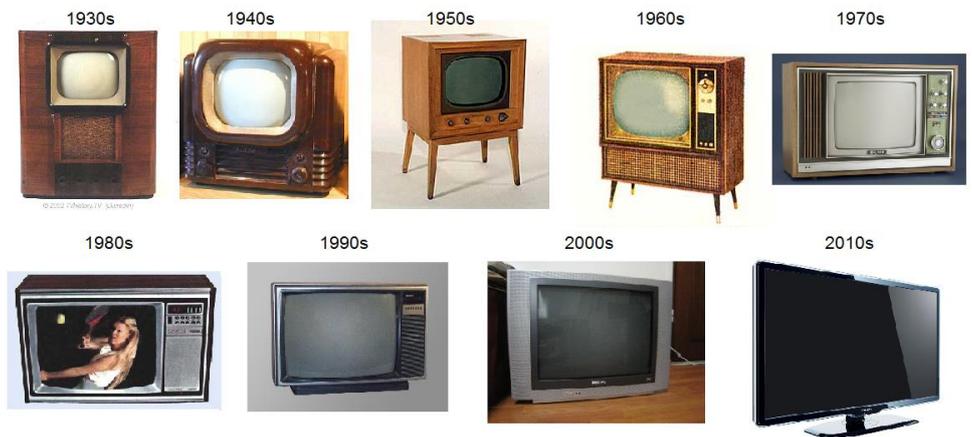


projecting an image onto a selenium-coated metal plate that was simultaneously scanned by a cathode ray beam. These experiments were conducted before March 1914, when Minchin died, but they were later repeated by two different teams in 1937, by H. Miller and J. W. Strange from EMI, and by H. Iams and A. Rose from RCA. Both teams succeeded in transmitting “very faint” images with the original Campbell-Swinton’s selenium-coated plate. Although others had experimented with using a cathode ray tube as a receiver, the concept of using one as a transmitter was novel. By the late 1920s, when electromechanical television was still being introduced, several inventors were already working separately on versions of all-electronic transmitting tubes, including Philo Farnsworth and Vladimir Zworykin in the United States, and Kálmán Tihanyi in Hungary.

### Color television

Color television is part of the history of television, the technology of television and practices associated with television’s transmission of moving images in color video.

In its most basic form, a color broadcast can be created by broadcasting three monochrome images, one each in the three colors of red, green and blue



(RGB). When displayed together or in rapid succession, these images will blend together to produce a full color image as seen by the viewer. Experimental color television used a rotating disk in front of the screen, with the three colors appearing successively. Aside from the need to coordinate the mechanical reception device rotation speed with the characteristics of the transmitted signal, this and other experimental color television technologies were not compatible with existing black and white sets; i.e., they would seriously degrade the black and white picture. Remembering the debacle when the change of FM broadcast band in 1946 made all the existing FM radios inoperable (unless fitted with a converter), the compatibility of color television was an important concern in the early 50’s.

**Exercise 1. Choose the answers True or False**

1. Alan Archibald Campbell-Swinton is fellow of the Royal Society . \_\_\_\_\_
2. Alan Archibald Campbell-Swinton expanded on his vision in a speech given in London in 1912 and reported in *The Time* . \_\_\_\_\_
3. By the late 1920s, when electromechanical television was still being introduced, several inventors were already working separately on versions of all-electronic transmitting tubes, including Philo Farnsworth and Vladimir Zworykin in the United States, and Kálmán Tihanyi in China. \_\_\_\_\_
4. Color television is part of the history of television, the technology of television and practices associated with television's transmission of moving images in color video. . \_\_\_\_\_
5. Remembering the debacle made all the existing FM radios inoperable (unless fitted with a converter), the compatibility of color television was an important concern in the early 50's. \_\_\_\_\_

**Exercise 2. Choose the correct answer.**

1. The beginnings of mechanical television can be traced back to the discovery of the photoconductivity of the element selenium by Willoughby Smith in .....  
A) 1873    B) 1877    C) 1973
2. The invention of a scanning disk by ..... in 1884  
A) John Logie Baird    B) Paul Gottlieb Nipkow    C) Willoughby Smith
3. Who had attempted to generate an electrical signal by projecting an image onto a selenium-coated metal plate that was simultaneously scanned by a cathode ray beam?  
A) G. M. Minchin and J. C. M. Stanton    B) Campbell-Swinton    C) A and B

## **Lesson 2. Smart TV (1) Reading**

**New words**

- |  |   |
|--|---|
| 1. <b>Feature</b> - a distinctive attribute or aspect of something | 3. <b>Motion</b> - the action or process of moving or being moved               |
| 2. <b>Peripheral</b> - relating to or situated on the edge         | 4. <b>Manufacture</b> - the making of articles on a large scale using machinery |

5. **Streaming** - a method of relaying data (esp. video and audio material) over a computer network as a steady continuous stream, allowing playback to proceed while subsequent data is being received

6. **Industry** - economic activity concerned with the processing of raw materials and manufacture of goods in factories

7. **Remote** - distant

8. **Bulky** - taking up much space; large and unwieldy

9. **Inbuilt** - existing as an original or essential part of something or someone

10. **Facility** - a place, amenity, or piece of equipment provided for a particular purpose

11. **Latter** - occurring or situated nearer to the end of something than to the beginning

12. **Detection** - noticing or sensing something

**Read the text.**

**What is Smart TV ? Did you know some basic features of Smart TV?**



**You might have used the first generation bulky CRT TV, now it is time to use Smart TV.**

In simple word, Smart TV has the inbuilt internet browsing facility, which makes the TV very smart. You can browse internet in smart TV just like your PC without any additional peripheral. You can also browse Facebook, watch movies on YouTube etc. Also you can find some

other interesting features like games and applications. There are two different types of Smart TVs. Your TV might have all Smart TV features. The second option is your setup box can have all the Smart TV features instead of your TV.

**How Smart TV is different from a normal TV?**

On a normal TV, you can just watch TV, but in some TVs like(LCD, LED, OLED), you can watch TV along with connect your USB drive for accessing movies, videos, music and pictures etc.

On a Smart TV, you can find all normal TV features along with the internet browsing features. Let's have some discussion about some important Smart TV features below.

**Smart TV Features**

**1. Internet Browsing**

Internet browsing is the feature that makes the Smart TV very popular. Whatever you can do on internet in your PC, same thing you can do it in Smart Phone. Some web popular web applications are already inbuilt in Smart TV (like Facebook , YouTube, Games etc), so that you can us enjoy them whenever you want.

## **2. Motion Control**

Some Smart TV has inbuilt motion control features. You can play games and select different apps just moving your hand on the TV screen.

## **3. Voice Control**

Some Smart TV has inbuilt voice control features. You can control all TV functions by speaking into the built-in microphone on the Smart Touch Remote Control

## **4. Online Streaming**

You can watch your favorite videos and movies and music in a Smart phone using the internet connection.

## **5. Inbuilt Webcam**

Smart TV has an inbuilt webcam, which helps you for motion detection for some game and other inbuilt applications. Also you can make Video calls using some web applications (like Skype, GTalk etc) with help of the webcam.

## **6. Inbuilt Wifi**

Smart TV has the inbuilt wifi feature. So that you can search available wifi near your TV set and connect to the wifi for internet browsing.

## **7. Smart TV Apps and Games**

Some inbuilt games are installed in the Smart TV. Also you can find some motion control games in your Smart TV. No need to touch your TV remote or the TV set. You can just move your hand on the screen as per the instructions and enjoy the game.

## **8. Download and Develop Smart TV Apps**

Some Smart TV platforms provide public SDK and NDK for third-party developers, so that they can develop applications for it. Also they provide online app store for end-users, so that end users can install and uninstall apps in their Smart TV just like your Smart Phones and PC.

### ***Exercise 1. Give short answers for these questions***

3. What is Smart TV?
4. How Smart TV is different from a normal TV?
5. What makes Smart TV very popular?
6. Which programs do you use when you are talking with somebody through the internet?
7. How can you control Smart TV?

**Exercise 2. Choose the answers True or False, or Not Given(NG)**

1. There is a big change in technology.
2. You cannot find any other interesting features like games and applications.
3. Smart TV will have inbuilt voice control features.
4. Smart TV is the best-selling TV in the world.
5. You can watch your favorite videos and movies and music in a Smart phone using the internet

**Exercise 3. Fill in the gaps**

1. You might have used the first generation \_\_\_\_\_ CRT TV, now it is time to use Smart TV.
2. You can browse internet in smart TV just like your PC without any additional \_\_\_\_\_.
3. On a Smart TV, you can find all normal TV features along with the internet \_\_\_\_\_ features.
4. Whatever you can do on \_\_\_\_\_ in your PC, same thing you can do it in Smart Phone.
5. Some Smart TV has \_\_\_\_\_ motion control features.
6. Smart TV has an inbuilt \_\_\_\_\_, which helps you for motion \_\_\_\_\_ for some game and other inbuilt applications.
7. Smart TV has the inbuilt wifi feature. So that you can search \_\_\_\_\_ wifi near your TV set and connect to the wifi for internet \_\_\_\_\_.
8. You can find some \_\_\_\_\_ control games in your Smart TV.
9. No need to \_\_\_\_\_ your TV remote or the TV set.
10. They provide online app store for \_\_\_\_\_.

## **Lesson 3. SMART TV (2) Listening**

***New words***

1. **Console** – a panel or unit accommodating a set of controls for electronic or mechanical equipment.
2. **Convergence** - the process or state of converging.
3. **App**- a self-contained program or piece of software designed to fulfill a particular purpose; an application, especially as downloaded by a user to a mobile device.
4. **Handheld** - designed to be held in the hand
5. **Widgets** - a small gadget or mechanical device, especially one whose name is unknown or unspecified.
6. **Set-top box** - a box-shaped device that converts a digital television signal to analogue for viewing on a conventional set, or that enables cable or satellite television to be viewed.
7. **Blue-ray** – a format of DVD designed for the storage of high-definition video and data.

8. **Demand** - ask authoritatively or brusquely.
9. **Contemporary** –living or occurring at the same time.

10. **Utilize** – make practical and effective use of.
11. **Appliance** –a device or piece of equipment designed to perform a specific task, typically a domestic one.

## SMART TV (2) Listening

A **smart TV**, sometimes referred to as **connected TV** or **hybrid TV**, (not to be confused with IPTV, Internet TV, or with Web TV) is a television set or set-top box with integrated Internet and Web 2.0 features, and is an example of technological convergence between computers and television sets and set-top boxes. Besides the traditional functions of television sets and set-top boxes provided through traditional broadcasting media, these devices can also provide online interactive media, Internet TV, over-the-top content, as well as on-demand streaming media, and home networking access.

The software that runs smart TVs can be preloaded into the device, or updated or installed on demand via an app store or app marketplace, in a similar manner to how the Internet, Web widgets, and software applications are integrated in modern smart phones.



The technology that enables smart TVs is also incorporated in devices such as set-top boxes, digital media players, Blu-ray players, game consoles, digital signage hotel television systems, and other network connected interactive devices that utilize television type display outputs. These devices allow viewers to search, find and play videos, movies, photos and other content from the Web, on a cable TV channel, on a satellite TV channel, or on a local storage drive.

A first patent was filed in 1994 (and extended the following year) for an "intelligent" television system, linked with data processing systems, by means of a digital or analog network. Apart from being linked to data networks, one key point is its ability to automatically download necessary software routines, according to a user's demand, and process their needs.

A *smart TV* device is either a television set with integrated Internet capabilities or a set-top box for television that offers more advanced computing ability and connectivity than a contemporary basic television set. Smart TVs may be thought of as an information appliance or the computer system from a handheld computer integrated within a television set unit, as such smart TV often allows the user to install and run more advanced applications or plugins /addons based on a specific platform. Smart TVs run complete operating system or mobile operating system software providing a platform for application developers.

"Smart TV"s:

Deliver content (such as photos, movies and music) from other computers or network attached storage devices on a network using either a Digital Living Network Alliance / Universal Plug and Play media server or similar service program like Windows Media Player or Network-attached storage (NAS), or via iTunes.

Provide access to Internet-based services including traditional broadcast TV channels, catch-up services, video-on-demand(VOD), electronic program guide, interactive advertising, personalization , voting, games, social networking, and other multimedia applications.

***Exercise 1. Paraphrase these sentences.***

1. Digital TV can be received through a digital **set-top box** or digital television.
2. Media **convergence** is indeed the wave of the future.
3. Most of these activities rely on traditionally acquired skills that do not **demand** modern technical knowledge.
4. Double-click on the map to mark waypoints, and the **app** tells you the total distance defined by the waypoints.
5. Furthermore, many Web pages are busy places, full of navigation **widgets** and data entry fields.
6. I'm a little torn whether to recommend the transfer to **Blu-ray** .
7. Each has a **console** , extra controller, the DVD playback kit, and various games.
8. Vitamin C helps your body **utilize** the iron present in your diet.
9. And nobody has turned up evidence of a meteor impact **contemporary** with the event.
10. It is about the personal **appliance** of science,' says the Operations Director.

***Exercise 2. Listen to the record material and fill in the gaps.***

A smart TV, sometimes referred to as connected TV or hybrid TV, (not to be confused with IPTV, Internet TV, or with Web TV) is a television set or (1)\_\_\_\_\_with integrated Internet and Web 2.0 features, and is an example of technological (2)\_\_\_\_\_ between computers and television sets and set-top boxes.

The software that runs smart TVs can be preloaded into the device, or updated or installed on(3)\_\_\_\_\_ via an(4) \_\_\_\_store or(4) \_\_\_\_marketplace, in a similar manner to how the Internet, Web (5) \_\_\_\_\_, and software applications are integrated in modern smart phones.

The technology that enables smart TVs is also incorporated in devices such as set-top boxes, digital media players(6)\_\_\_\_\_ players, game (7)\_\_\_\_\_, digital signage hotel television systems, and other network connected interactive devices that (8)\_\_\_\_\_ television type display outputs.

A smart TV device is either a television set with integrated Internet capabilities or a set-top box for television that offers more advanced computing ability and connectivity than a (9)\_\_\_\_\_ basic television set. Smart TVs may be thought of as an information (10)\_\_\_\_\_ or the computer system from a (11)\_\_\_\_\_ computer integrated within a television set unit, as such smart TV often allows the user to install and run more advanced applications or plugins /addons based on a specific platform.

**Exercise 3. Read the text and decide whether they are true (T) , false (F) or not given(NG).**

1. A smart TV, sometimes referred to as [Internet TV](#) or [Web TV](#). \_\_\_\_
2. A first patent was filed in 1994 . \_\_\_\_
3. A first patent was filed for an "active" television system, linked with data processing systems, by means of a digital or analog network. \_\_\_\_
4. Media **convergence** is indeed the wave of the future.
5. Smart TVs run complete operating system or mobile operating system software providing a platform for application developers. \_\_\_\_

**Exercise 4. Listen the tape again and choose the correct answer.**

1. Continue the sentence. A smart TV, sometimes referred to as connected TV or ....
  - A. IPTV
  - B. Internet TV
  - C. Web TV
  - D. Hybrid TV
2. When was the first patent filed?
  - A. in 1992
  - B. in 1994
  - C. in 1998
  - D. in 2000
3. What was the name of television system, for which was issued the first patent ?
  - A. “intelligent” television system
  - B. “dynamic” television system
  - C. “Active” television system
  - D. “hotel” television system
4. Which devices allows viewers to search, find and play videos, movies, photos and other content from the Web, on a cable TV channel, on a satellite TV channel, or on a local storage drive ?

1)set-top boxes; 2)Digital media players; 3)Blu-ray players; 4)Game consoles; 5)Digital signage hotel television systems;

- A. 1,2,4,5
  - B. 1,2,3,4,5
  - C. 2,3,4,5
  - D. 1,3,4,5
5. Complete the sentence. Smart TVs May be thought of as an information appliance or the computer system from a handheld computer integrated within a .....unit.
- A. internet set
  - B. line set
  - C. television set
  - D. set-top box

## **Lesson 4. The role of Computers in Television Technologies**

### **Read the text.**

Digital television technology emerged to public view in the 1990s. In the United States professional action was spurred by a demonstration in 1987 of a new analog high-definition television (HDTV) system by NHK, Japan's public television network. This incited the FCC to declare an open competition to create American HDTV, and in June 1990 the General Instrument Corporation (GI) surprised the industry by announcing the world's first all-digital television system. Designed by the Korean-born engineer Woo Paik, the GI system displayed a 1,080-line colour picture on a wide-screen receiver and managed to transmit the necessary information for this picture over a conventional television channel. Heretofore, the main obstacle to producing digital TV had been the problem of bandwidth.

Even a standard-definition television (SDTV) signal, after digitizing, would occupy more than 10 times the radio frequency space as conventional analog television, which is typically broadcast in a six-megahertz channel. HDTV, in order to be a practical alternative, would have to be compressed into about 1 percent of its original space. The GI team surmounted the problem by transmitting only changes in the picture, once a complete frame existed.

Within a few months of GI's announcement, both the Zenith Electronics Corporation and the David Sarnoff Research Center (formerly RCA Laboratories) announced their own digital HDTV systems. In 1993 these and four other TV laboratories formed a "Grand Alliance" to develop marketable HDTV.

In the meantime, an entire range of new possibilities aside from HDTV emerged. Digital broadcasters could certainly show a high-definition picture over a regular six-megahertz channel, but they might “multicast” instead, transmitting five or six digital standard-definition programs over that same channel. Indeed, digital transmission made “smart TV” a real possibility, where the home receiver might become a computer in its own right. This meant that broadcasters might offer not only pay-per-view or interactive entertainment programming but also computer services such as e-mail, two-way paging, and Internet access.

In late 1996 the FCC approved standards proposed by the Advanced Television Systems Committee (ATSC) for all digital television, both high-definition and standard-definition, in the United States. According to the FCC’s plan, all stations in the country would be broadcasting digitally by May 1, 2003, on a second channel. They would still be broadcasting in analog as well; programs would be “simulcast” in digital and analog, giving the public time to make the switch gradually. In 2006 analog transmissions would cease, old TV sets would become useless, and broadcasters would return their original analog spectrum to the government to be auctioned off for other uses.

**Exercise 1. Questions 1-5.** Do the following statements agree with the information given in “*Computers and television technologies.*” Write:

<b>TRUE</b>	if the statement agrees with the information
<b>FALSE</b>	if the statement contradicts the information
<b>NOT GIVEN</b>	if there is no information on this

1. HDTV is a high digital transport value.
2. Digital TV has appeared before analog TV
3. Smart TV is a box with human inside
4. There is no different between HDTV and SDTV
5. Smart TV can’t work with emails and Internet Access.

**Exercise 2. Choose the correct answer.**

1. Digital television technology emerged to public view in the ...
  - a. 1990s
  - b. 1980s
  - c. 2000s
  - d. 2010s

2. HDTV was presented in ...
  - a. 1987
  - b. 1980
  - c. 1997
  - d. 2007
3. Smart TV is
  - a. A television box with some abilities of computer
  - b. A computer which used as TV
  - c. Smart Traffic Vector – a way for planning every day transport traffic
  - d. There is no correct answers
4. When old TV set became useless?
  - a. After 2006
  - b. Before 2006
  - c. After 2000
  - d. In 1997
5. How much lines is in a HDTV?
  - a. 1080
  - b. 108
  - c. 1780
  - d. 1800

## Lesson 5. LCD, LED screens

### PLASMA, LCD or LED HDTVs



LCD TV is no longer a novelty or gimmick on the market.

**Advantages** of LCD TVs Long lifetime of LCD TVs

Low power consumption and the use of technology, which does not harm the environment.

LCD TV screens do not flicker, viewing more comfortable, your eyes do not get tired.

LCD televisions are much thinner and lighter than CRT or plasma, which creates additional convenience to install and use.

For LCD screens do not stick dust, they do not generate static electricity. Terms.

Liquid Crystal Display (LCD) - Electrically conductive liquid, consisting of tiny pellets (crystals), which is under pressure between the two electronic boards, changes occur in it under the influence of electric currents. The image to be seen, this fluid must be highlighted, as it does not emit its own light. Here lies the main catch for a buyer - LCD or LED TV.

LCD (Liquid Crystal Display) - respectively displays based on liquid crystals.

CCFL (Cold Cathode Fluorescent Lamps) - Technology conventional LCD TVs - here as the backlight lamp is used for cold cathode fluorescent same (fluorescent) lamps.

LED (Light-emitting diode) - in the LED TV as a backlight used diodes - a semiconductor device that creates radiation (light) by passing electric current through it.

### **The principle of the LCD**

The liquid crystal molecules in the TV screen working on the principle of the shutter in the camera - they reflect light, or not. When voltage is applied, they change their shape by changing the light transmission.

Crystals themselves do not emit their own light and color. Color LCD TVs in formed in the following way - in front of each crystal is set RGB (red, green and blue) filter, which allows you to get any color output. Now you understand why LCD TV backlight is needed.

### **Differences LED and LCD (CCFL). Simple and clear.**

LED TVs can achieve better image quality compared to LCD TVs by the design of LED lighting - if the LCD TV is one of the cold cathode lamp illuminates the entire screen, and because of this it is impossible to achieve local dimming one area of the screen and enhance the brightness on the other, the LED TV due to the large number of LEDs can be uniformly change the brightness of the screen area by muting the glow of diodes in this area, and vice versa. Accordingly, the LED TV backlight more active, non-uniform, which allows for greater contrast and color reproduction.

Yes, of course, LED technology - a technology of the future for LCD TVs.

In the future, all

manufacturers will switch to the backlight LED. Already, producers have stated that the use of lighting diodes can increase the contrast, brightness, sharpness and color reproduction. LED backlight reduces power consumption of TVs around 40%, as in LED TVs do not use mercury used in fluorescent lamps, which has a positive impact on the environment.

LED lights may consist of a single color diodes, or tri-color (red, green, blue) diodes. When using colored diodes increases color rendition, but due to the complex control system may not function correctly diodes, unnatural color display. To fix that manufacturers have created technology Local Dimming, on which LED control occurs spots - groups of several diodes, however, and it has several drawbacks: poor color uniformity - visible bright and dark spots on the areas where I clearly turned on or off the backlight on contrast transitions visible colored halos and dark areas disappear detail. The usual LCD TVs do not have these problems, but less bright, contrast and color.

Also, LED TVs different mode of arrangement of diodes. Location Technology Direct - LEDs are located behind the screen and uniformly over the entire volume or location technology Edge - LEDs are located just around the screen together with a diffuser panel with such an arrangement is not possible to make local dimming of the screen and in fact TVs Edge for the image quality is not many will differ from conventional LCD TVs. Direct TV with the same arrangement of diodes



provide more uniform illumination, but increase power consumption and thickness of the screen by increasing the number of diodes.

**Exercise 1. Questions 1-5.** Do the following statements agree with the information given in “LCD, LED screens” Write:

**TRUE** if the statement agrees with the information  
**FALSE** if the statement contradicts the information  
**NOT GIVEN** if there is no information on this

1. On the LCD are flickering. \_\_\_\_\_
2. LCD - electro conductive liquid consisting of the smallest granules. \_\_\_\_\_
3. LED lights may consist of diodes of different colors. \_\_\_\_\_
4. LCD TVs are very heavy and large, with a thick screen. \_\_\_\_\_
5. In LED TV backlight used as diodes - a semiconductor device.

**Exercise 2** give short answers for these questions.

1. What are advantages of the LCD?
2. What is an LCD?
3. What is an LED?
4. On what basis are working LC molecules?
5. How many diodes can be LED lights?

## Lesson 6. Parts of TV

### *New words*

1. Frequency -is the number of occurrences of a repeating event per unit time.(Chastota)
2. Tactile -adj. pertaining to the sense of touch.(Sezilarli)
3. Blind -render unable to see(ko'ra olmaslik, ko'zi ojiz)
4. Supplied- an amount of something available for use(yetkazib bermoq)
5. Vice versa- perversely verse (avvalgi, vitse versiyasi)
6. Commonly-adv. usually; prevalently(keng tarqalgan)
7. Continually- adv. successively, sequentially(uzilmasdan doimo)
8. Theater system – operations system in natural sciences (operatsion tizim)
9. Additional- existing or coming by way of addition(qo'shimcha)
10. Capability- n. ability, skill, general ability or power of an organization or a machine to be used to do something or to do something(imkoniyatlar)

Modern televisions consist of a display, antenna or radio frequency (RF) input (a TV aerial plug or an F connector), and a tuner. Some TVs have had subwoofers installed in the set. Most modern TVs also feature additional inputs for devices such as DVD players, video game consoles, and headphones. Some high-end TVs have Ethernet ports to receive information from the Internet, like stocks, weather, or news.

A display device is an output device for presentation of information in visual or tactile form (the latter used for example in tactile electronic displays for blind people). When the input information is supplied as an electrical signal, the display is called an electronic display. Common applications for electronic visual displays are televisions or computer monitors.

An antenna (or aerial) is an electrical device which converts electric power into radio waves, and vice versa. They are used in systems such as radio broadcasting, broadcast television, two-way radio, communications receivers, radar, cell phones, and satellite communications, as well as other devices such as garage door openers, wireless microphones, Bluetooth-enabled devices, wireless computer networks, baby monitors, and RFID tags on merchandise.

A remote control is a component of an electronics device—most commonly a television set, DVD player, or home theater system—originally used for operating the device wirelessly from a short line-of-sight distance. Remote control has continually evolved and advanced over recent years to include Bluetooth connectivity, motion sensor-enabled capabilities and voice control.

A DVD player is a device that plays discs produced under both the DVD-Video and DVD-Audio technical standards, two different and incompatible standards. Some DVD players will also play audio CDs. DVD players are connected to a television to watch the DVD content, which could be a movie, a recorded TV show, or other content.

A video game console is a device that outputs a video signal or visual image to display a video game. Headphones (or "head-phones" in the early days of telephony and radio) are a pair of small loudspeakers that are designed to be held in place close to a user's ears. They are also known as earspeakers, earphones or, colloquially, cans.

**Exercise 1.** Choose the correct answers. True –(T) False-(F)

1. Most modern TVs also feature additional inputs for devices such as DVD players, video game consoles, and headphones.
2. A display device is an electrical device which converts electric power into radio waves, and vice versa.
3. A remote control is a component of an electronics device—most commonly only a television set.
4. An antenna are used in systems such as radio broadcasting, broadcast television.

5. Headphones are also known as earspeakers, earphones or, colloquially, cans.

**Exercise 1.** Choose the correct answers

1. An output device for presentation of information in visual or tactile form it is....?

- A. Antenna
- B. Display
- C. Headphones

2. What is it aerial?

- A. Antenna
- B. Display
- C. DVD players

3. What is component of devices and originally used for operating the device wirelessly from a short line-of-sight distance?

- A. Antenna
- B. Bluetooth
- C. Remote control

4. What are also known as earspeakers, earphones or, colloquially, cans?

- A. Headphones
- B. Display
- C. Game console

5. What TVs have Ethernet ports?

- A. All of TVs
- B. LCD TVs
- C. Some high-end TVs

## **Lesson 7. Tashkent TV Tower**

### ***New words***

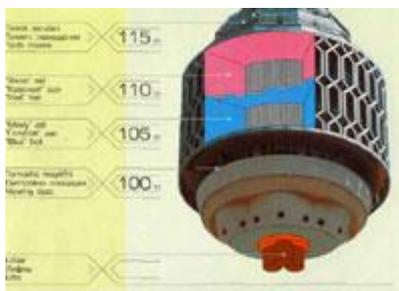
1. Commission- komissiya (vositachilik) haqi.
2. Regard-shunday deb hisoblamoq, razm solmoq.
3. Unique-yagona, betakror.
4. Silhouette-sharpa, qora, g'ira-shira ko'ringan narsa.
5. Insert-(formal) ichiga o'rnatmoq, orasiga qo'yimoq, o'rtasiga solmoq, qistirmoq.
6. Construction-qurilish, bino, inshoot
7. Mosaic-mozaika

8. Foyer-foye.
9. Install-1) o'rnatmoq, 2) kirishmoq, kiritmoq
10. Simultaneously-bir vaqtning o'zida yuz bergan.

## **Tashkent television tower - the largest broadcasting center in Central Asia**

Tashkent TV Tower is the highest structure in **Central Asia**. Its height is 375 meters. The TV Tower was built over 6 years, beginning in 1978. It was officially put into operation on 15 January in 1985.

**15 January 1985** State commission signed an act regarding the most unique building in Central Asia - The Tashkent TV Tower. Into the silhouette of the city was inserted a TV tower, which became a symbol of the high technical and cultural level of Uzbekistan.



As a unique architectural building, the Tashkent TV Tower is a favorite stop of **travelers** and guests of the capital. Guides provide professional tours, including information about the construction of the TV tower and some of the other sights of Tashkent in the Uzbek, Russian, and English languages.

The foyer of the TV Tower is decorated with mosaic panels in the style of Florentine and half-precious stones, marble by the artist A. Bukharbaev. An unique construction of TV Tower was developed by architects N.G. Terziev-Tsarukov, D.Ya. Semashko and engineers E.P.Morozov, M.D.Mucheev.

To take visitors to the top of the TV tower, three high-speed lifts made by the "**Shindler**" company have been installed. They rocket people to a height of 100 meters in just a few seconds. Visitors proceed from the observation deck to the "**Koinot**" restaurant (The Space), where the two comfortable rooms of Uzbek restaurant "**Blue**" and European "**Red**" can accommodate **120 visitors** simultaneously. Rotating once every hour, visitors can admire the panorama of Tashkent again and again.



In 1991 the Tashkent TV Tower became a member of the **World Federation of Great Towers** and now it is the **11<sup>th</sup> highest tower** among more than 200 towers in the world. At the same time, it is the only tower of its kind in Central Asia, and the 2<sup>nd</sup> highest tower, after the Ostankino Tower (Moscow, Russia), among the CIS countries.

There are models of all Towers - members of World Federation of Great Towers in the foyer of TV Tower

**Exercise 1. Choose the answers True or False.**

1. Tashkent television tower - the largest broadcasting center in Asia. \_\_\_\_\_
2. Its height is 375 meters. \_\_\_\_\_
3. In 1992 the Tashkent TV Tower became a member of the **World Federation of Great Towers**. \_\_\_\_\_
4. The **11<sup>th</sup> highest tower** among more than 200 towers in the world \_\_\_\_\_
5. The TV Tower was built over 6 years, beginning in 1978. \_\_\_\_\_

**Exercise 2. Choose the answers**

1. Tashkent TV Tower is..... in **Central Asia**.  
A) the highest structure B) the largest broadcasting C) A and B
2. What is the height of Tashkent TV tower?  
A) 385 meters B) 375 meters C) 345 meters
3. When was it officially put into operation?  
A) On 15 January in 1985 B) On 15 January in 1978 C) on 6 January in 1985
4. When did the Tashkent TV Tower become a member of the **World Federation of Great Towers**?  
A) In 1991 B) in 1985 C) in 1978
5. What is its restaurant name?  
A) RED B) Koinot C) Blue

## **Lesson 8. The early development of cinema in Britain**

**Read the text.**

THERE IS SOME DEBATE over when the first cinematic performance took place in Britain. Most people refer to 1896, when the first projected, moving photographs were shown to

a paying audience in London. This was an exhibition organised by the British representative of Louis and Auguste Lumiere, from France. The previous year the brothers had staged what is generally regarded as the very first cinematic exhibition in the world involving projection and audience payment. However, it is important to note that many other inventors across Europe and the USA were almost ready to exhibit moving pictures too. And in 1894, the first British 'kinetoscope'<sup>1</sup> had opened. This offered customers the chance to try Thomas Edison's coin-in-the-slot machine for viewing animated photographs.

Most people think of cinema as a means of modern mass communication which was invented at some time in the past. However, while *film* and *projectors* were the result of invention, the *cinema* as a social institution evolved by chance. People knew how to project images for centuries before the 1890s. The 'camera obscura', for example - a darkened room into which light passed through a small hole, or lens, producing an inverted picture on the wall opposite - had been used in Italy as far back as the sixteenth century.

At the time of the Lumiere brothers' invention in 1895, critics, journalists and the early cinematographers disagreed considerably among themselves about the use of the new machine: whether it should be for making archives, whether it was for teaching sciences such as surgery, or whether it was a new form of journalism and so on. In the end, however, it was the ability to tell stories which was responsible for the very rapid development of cinema as a mass medium. The growing popular-entertainment industry, which was motivated principally by money, recognised and developed this ability. By the end of 1896, only months after the first public performance of film in Britain, moving pictures were part of many music hall shows up and down the country. The pictures were accompanied by music and often by live, spoken commentary as well.

This expansion in exhibitions continued with great speed and profitability into the 1900s. After a short time films were shown in vacant shops, known as 'shop shows' or 'penny gaffs', and then after 1906 in custom-built premises called 'picture palaces', 'bijoux palaces' or 'majesties'. In 1909 the First Cinematographic Act was passed in parliament. Its main purpose was to regulate the size of cinemas, but it was also to introduce safety regulations concerning the number of people in the audience. In that year, estimates suggest that British production amounted to only about 20 per cent of films shown in British cinemas, and that 40 per cent were French, 30 per cent American and 10 per cent Italian.

By 1910 around 1,600 cinemas were in existence in Britain and by the outbreak of the First World War in 1914, this figure had risen to 4,000. The Cinema Commission estimated annual weekly attendances at cinemas before 1914 as seven to eight million. By the end of the war in 1918 British cinema exhibition had developed into a major industry, based on the extended

fictional film. This had become an increasingly complex product: melodramas, comedies, westerns, travelogues and 'superspectaculars' were some of the early genres of popular 'silent' film. The films themselves were still largely produced abroad, increasingly in America. By 1914 Hollywood- produced American films accounted for over half the domestic market in Britain. This trend continued into the 1920s, but in 1927, the year of the first 'talkie'<sup>2</sup> film, government regulations were introduced to guarantee and reserve a proportion of the home market for domestic film production.

1. An old machine used for watching moving pictures. Only one person could watch at a time.
2. An old-fashioned word for a film with sound.

**Exercise 1. Questions 1-5.** Do the following statements agree with the information given in *The early development of cinema in Britain?* Write

**TRUE** if the statement agrees with the information  
**FALSE** if the statement contradicts the information  
**NOT GIVEN** if there is no information on this

1. At the end of the 19th century, there were a lot of different opinions about the purpose of showing moving pictures.
2. Cinema was slow to attract mass audiences.
3. Moving pictures were sometimes shown in premises designed as shops.
4. The first cinemas were dangerous because too many people were allowed inside.
5. Between 1909 and 1914 the proportion of American films shown in Britain fell.

**Exercise 2. Questions 6-10.** Classify the following events as occurring between

- A. 1890 and 1899**
- B. 1900 and 1910**
- C. 1911 and 1920**

**Write the correct letter, A, B or C.**

1. Moving pictures were first shown in specially designed buildings.
2. People could pay to use a machine showing moving pictures.
3. The majority of films shown in Britain were from Europe.
4. There were approximately 4,000 cinemas in Britain.
5. Moving picture shows were introduced in music halls.

## GLOSSARY

1. Fellow- a person in the same position, involved in the same activity, or otherwise associated with another
2. Transmit - cause (something) to pass on from one person or place to another
3. Dominate- have power and influence over
4. Expand - become or make larger or more extensive
5. Generate- cause (something, esp. an emotion or situation) to arise or come about
6. Simultaneously- at (one and) the same time , at the same instant/moment , at once , concurrently , concomitantly ; (all) together , in unison , in concert , in chorus
7. Receiver- 1) the part of a telephone apparatus contained in the earpiece, in which electrical signals are converted into sounds 2) a person who gets or accepts something that has been sent or given to them
8. Degrade-1) reduce (someone) to a lower rank, especially as a punishment 2) reduce (energy) to a less readily convertible form.
9. Concern- - be relevant or important to; affect or involve
10. **Feature** - a distinctive attribute or aspect of something
11. **Peripheral** - relating to or situated on the edge
12. **Motion** - the action or process of moving or being moved
13. **Manufacture** - the making of articles on a large scale using machinery
14. **Streaming** - a method of relaying data (esp. video and audio material) over a computer network as a steady continuous stream, allowing playback to proceed while subsequent data is being received
15. **Industry** - economic activity concerned with the processing of raw materials and manufacture of goods in factories
16. **Remote** - distant
17. **Bulky** - taking up much space; large and unwieldy
18. **Inbuilt** - existing as an original or essential part of something or someone
19. **Facility** - a place, amenity, or piece of equipment provided for a particular purpose
20. **Latter** - occurring or situated nearer to the end of something than to the beginning
21. **Detection** - noticing or sensing something
22. **Console** – a panel or unit accommodating a set of controls for electronic or mechanical equipment.
23. **Convergence** - the process or state of converging.
24. **App**- a self-contained program or piece of software designed to fulfill a particular purpose; an application, especially as downloaded by a user to a mobile device.
25. **Handheld** - designed to be held in the hand
26. **Widgets** - a small gadget or mechanical device, especially one whose name is unknown or unspecified.
27. **Set-top box** - a box-shaped device that converts a digital television signal to analogue for viewing on a conventional set, or that enables cable or satellite television to be viewed.
28. **Blue-ray** – a format of DVD designed for the storage of high-definition video and data.
29. **Demand** - ask authoritatively or brusquely.

30. **Contemporary** –living or occurring at the same time.
31. **Utilize** – make practical and effective use of.
32. **Appliance** –a device or piece of equipment designed to perform a specific task, typically a domestic one.
11. Frequency -is the number of occurrences of a repeating event per unit time.(Chastota)
12. Tactile -adj. pertaining to the sense of touch.(Sezilarli)
13. Blind -render unable to see(ko'ra olmaslik, ko'zi ojiz)
14. Supplied- an amount of something available for use(yetkazib bermoq)
15. Vice verse- perversely verse (avvalgi, vitse versiyasi)
16. Commonly-adv. usually; prevalently(keng tarqalgan)
17. Continually- adv. successively, sequentially(uzilmasdan doimo)
18. Theater system – operations system in natural sciences (operatsion tizim)
19. Additional- existing or coming by way of addition(qo'shimcha)
33. Capability- n. ability, skill, general ability or power of an organization or a machine to be used to do something or to do something(imkoniyatlar)
11. Commission- komissiya (vositachilik) haqi.
12. Regard-shunday deb hisoblamoq, razm solmoq.
13. Unique-yagona,betakror.
14. Silhouette-sharpa, qora,g'ira-shira ko'ringan narsa.
15. Insert-(formal) ichiga o'rnatmoq, orasiga qo'yimoq, o'rtasiga solmoq, qistirmoq.
16. Construction-qurilish,bino,inshoat
17. Mosaic-mozaika
18. Foyer-foye.
19. Install-1) o'rnatmoq, 2) kirishmoq,kiritmoq
34. Simultaneously-bir vaqtning o'zida yuz bergan.

*The answers*

**Lesson 1. The Evolution of Television.**

*I. Choose the True or False*

1. true
2. false
3. false
4. true
5. true

*II. Tests' answers.*

1. A
2. B
3. C

**Tashkent TV Tower**

*I. Choose the True or False*

1. false
2. true
3. false

4. true

5. true

**II. Tests' answers.**

**1. C**

**2. B**

**3. A**

**4. A**

**5. B**

**Lesson 2. Smart tv**

**Answers**

1. Smart TV is TV which has internet browsing, and you can browse Facebook, watch movies on YouTube etc
2. On a normal TV, you can just watch TV, but in some TVs like(LCD, LED, OLED), you can watch TV along with connect your USB drive for accessing movies, videos, music and pictures etc
3. Internet browsing is the feature that makes the Smart TV very popular.
4. When we are talking with somebody, we use programs like Skype, GTalk etc.
5. Just move your hand on the screen or via remote control

## **True, False or Not Given(NG)**

1. There is a big change in technology. **T**
2. You cannot find any other interesting features like games and applications. **F**
3. Smart TV will have inbuilt voice control features. **F**
4. Smart TV is the best-selling TV in the world. **NG**

You can watch your favorite videos and movies and music in a Smart phone using the internet

## **Smart tv. Answers**

### **Ex 3**

1-set-top box

2- convergence

3- demand

4- app

5- widgets

6- Blue-ray

7- consoles

8- utilize

9- contemporary

10- appliance

11- handheld

**Ex 4**

1-F

2-T

3-F

4-NG

5-T

**Ex 5**

1-D

2-B

3-A

4-B

5-C

Lesson 5. *Exercise 1. Questions 1-5. Do the following statements agree with the information given in “LCD, LED screens” Write:*

**TRUE**                      if the statement agrees with the information  
**FALSE**                     if the statement contradicts the information  
**NOT GIVEN**             if there is no information on this

B) On the LCD are flickering. (False)

L LCD - electro conductive liquid consisting of the smallest granules.(True)

C) LED lights may consist of diodes of different colors. (False)

D) LCD TVs are very heavy and large, with a thick screen.(False)

(L In LED TV backlight used as diodes - a semiconductor device(True)

Answers.

1. Long lifetime of LCD TVs, low power consumption, LCD TV screens do not flicker, for LCD screens do not stick dust, they do not generate static electricity.

2. LCD \* respectively displays based on liquid crystals.

3. LED - in the LED TV as a backlight used diodes - a semiconductor device that creates radiation (light) by passing electric current through it.

4. The liquid crystal molecules in the TV screen working on the principle of the shutter in the camera - they reflect

light, or not.

5. LED lights may consist of a single color diodes, or tri-color (red, green, blue) diodes.