

COMPUTER

STD 11

PERSONALIZE NOTES

+

USEFUL STUDY MATERIAL

SCIENCE AND COMMON STREAM

ACCORDING TO THE LATEST
PAPER PATTERN OF BOARD



NUZHAT MEMON

INDEX & PATTERN

GSHEB SYLLABUS FOR THE ACADEMIC YEAR 2025-26

STD 11 SCIENCE AND COMMON STREAM (ENGLISH MEDIUM)

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Total		50	50	80	50
Timing		1 hr	1 hr	2 hrs	2 hrs

CHAPTER 1

INTRODUCTION TO MULTIMEDIA

Communication

- **Communication** is an integral part of our life.
- We **use various means of communication** like radio, newspaper, television, theater, movies, internet and others.
- All these medium help us **gain knowledge or educate us**.
- A **Single medium of information is not enough** to convey meaningful messages to a variety of audience.
- The **more the mediums of information** you use the **impact of the communication increases**.

Multimedia

- Multimedia is all about adding various effects to make communication effective.
- The term multimedia has been coined from two terms: **multiple** and **media**
- Multimedia means **usage of multiple media to communicate**.
- In other words, multimedia is a **collection of different media elements** like text, audio, graphics, video and animation.
- The combination of all media elements makes the communication more **Structural and understandable** to the user

Elements of Multimedia

- 5 Elements of Multimedia are:
 - ✓ **Text**
 - ✓ **Audio**
 - ✓ **Graphic**
 - ✓ **Video**
 - ✓ **Animation**
- Computer plays a vital role in the development of these media elements.
- A Computer capable of handling text, graphics, audio, video and animation is called as **multimedia computer**.

Text Element in Multimedia

- Including text in multimedia is **the basic step towards development of multimedia presentation**.
- **Proper use of text and words** in multimedia presentation will help to **communicate the idea and message to the user**.
- Text can be of any type, a word, a single line or a paragraph.
- The textual data for multimedia can be developed using any text editor.
- However to give special effects we need graphics software.
- Word processing software to create textual data:
 - ✓ OpenOffice Writer
 - ✓ Ms-Word

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- Terminology of Text Element:
 - ✓ Typefaces
 - ✓ Fonts
 - ✓ Size
 - ✓ Style

Typeface

- A typeface is family of character or letters which have similar look.
- For example: times, Arial, courier and others.

Font

- Typeface have different style and size known as Font.

Bold	12 point
<i>Italic</i>	20 point
<u>underline</u>	and so on.

and others.

Example:

Arial typeface with 20 point and bold

Courier typeface with 18 point and underline

Size

- Size is the distance between the top of the letter to the bottom point.
- It is expressed in points.

Categories of Typeface

- Typeface categorized into : **Serif and Sans-Serif**

Serif fonts

- Serif is a **little decoration at the end of the character**.
- Example: **Times, Century, Bookman**
- Serif fonts are **easy to read on a printed page** as they guide the eye along the line of text.
- So they are used when there is **lot of text to be read**.

San-serif font

- **Sans in French means 'without'** and it means **without decoration**.
- Example: **Arial, Verdana and Helvetica**
- They are usually for **headlines and titles**.
- But on computer screen due to **low resolution**, serif fonts are difficult to read than the **sans serif**

CHAPTER 1

Traditional method vs. Multimedia

- Text used in traditional pen and paper method is different form text in multimedia.
- In Traditional method, we convey the information **using only text**.
- In multimedia we have **other elements along with text**. And these elements together to convey meaningful information. And that information is in the form of **text, sound, pictures** etc.
- Thus text in multimedia should be short, to the point and attractive to get the attention of the user.

Practice Exercise: Text Element

- Open **OpenOffice Impress**.
- Open a **blank presentation** in OpenOffice Impress.
- Select **Fontwork Gallery icon** on **drawing toolbar**.
 - If Drawing toolbar is not visible, then go to **View→Toolbars→Drawing**
- In the Fontwork Gallery dialog box, select any style and click OK.
- Double Click on the object to enter into the text edit mode.
- Replace the default “Fontwork” text with text “Gujarat tourism”.
- Press esc key to exit the text edit mode.

Audio

- **Sound is the most important element of multimedia.**
- **We can define sound as a meaningful speech in any language.**
- **The term sound is used in the analog form, and the digitized form of the sound is called audio**
- When we are presenting in front of the audience, text and images without any sound are helpful.
- In the absence of the presenter, sound plays an important role. The best example is **educational CD**.
- Thus when a user sees the presentation, he/she is able to understand it easily by seeing the animation along with the voice.
- Now a days, computers support multimedia application. They come alongwith required hardware & software needed for MM applications.
- Hardware – **inbuilt sound card, speaker, mics & web camera**
- Software – The Operating System (OS) provides application that can be directly used for capturing audio and video.

Audio Recording Application:

Applications→Sound and video→Sound recorder

- Choose File→New
- Use the Record as drop-down list to select 1 of the following recording option:
CD quality, Lossless CD quality, Lossy Voice

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- To start recording
- To stop recording
- To Play back the recording
- To run the audio mixer
- To save the recording

Control → Record or Record Button

Control → Stop or Stop Button

Control → Play or Play button

File → Open Volume Control

File → Save As

Audio Formats

- Sounds are stored in media file.
- File extension is used to find the type of media file
- .wav is the most popular uncompressed sound format on the internet and it is supported by all popular browsers.
- The .mp3 is the new compressed format for recorded music. So if you want to use the recorded music, .mp3 is the best choice.

File Extension	Type of File	Description
.mid, .midi	MIDI File	MIDI (Musical Instrument Digital Interface) files contain music data.
.rm, .ram	Real Audio File	.ram (Real Audio Metadata) is combination of audio and video.
.wav	Wave File	Waveform audio file.
.wma	Windows Media Audio File	Audio file compressed with windows media compression.
.mp3, .mpga	Mp3 Audio File	Compressed audio format.

Image

- Generally multimedia presentations are graphics/image based.
- Information communicated through images is easier to remember and understand.
- Images used in a multimedia application can be
 - photographs converted into digital form with the help of scanners or
 - generated on the computer.
- Computers store the pictures mainly of two forms:
 - Bitmap or raster graphics (2D Matrix)
 - Vector graphics (Mathematical Equation)

CHAPTER 1

Two Types of Image Files

Bitmap/Raster Images

- Computer store the pictures in the form of **pixels maps** is known as bitmap or raster images.
 - Pixel is the **small dot on the screen**.
 - Pixel stands for **picture element** (pix→Picture and el→Element).
 - A map is a **two dimensional (2D) matrix** of these dots.
 - Each pixel in this map contains values representing a color.
 - When an image is sent to be displayed on the screen, the picture data is converted to pixels.
- Thus a bitmap is **simple matrix of tiny dots which forms an image on the computer screen**.

Vector Images

- Computer store the images in the form of **mathematical equations**.
- Both bitmap and vector graphics looks the same on the screen.
 - But when you enlarge the **bitmap image**, it will **get blur** and the pixel will get enlarged
 - The vector image on the other hand looks the same when enlarged because the data is stored in the mathematical form and the values are recalculated when displayed on the screen

Image Formats

- Bitmap image file formats like gif, jpeg and png use compression within the file itself.
- In Open office writer, select Insert→Picture to insert a picture.
- The picture used can be :
 - A file already present in the computer
 - We can scan the picture using scanner and convert it into digital format to be used further by the computer.
 - We can make changes to our images by using programs like Adobe Photoshop, GIMP, MS-Paint and others

File Extension	Type of File	Description
.bmp	Bitmap Image	Uncompressed Image file used to store bitmap digital images.
.gif	Graphical Interchange Format File	Common for web graphics with small images and images with text . Uses limited number of colors

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.png	Portable Network Graphic	Used to store graphics for web images and supports upto 32 bit colors . It was an improvement over gif .
.jpeg / .jpg	Joint Photographic Expert Group	Common image format used by digital cameras . Supports upto 24 bit colors .
.psd	Photoshop Document	Image file created by Adobe Photoshop

Video & Animation

- Animation can add great power to any multimedia application.
- Any static presentation becomes lively by adding a video or animation
- The term video refers to the sequence of natural scenes captured using analog or digital video capturing device. This device can be a web camera, digital camera or even mobile phone.
- Animation is a visual change over time. The digital images are played one after the other to create a moving effect.
- Animation is created from drawn pictures and video is created using real time visuals.
- Some example of animation movies are Kung fu Panda, Smurfs and the Angry Bird.

Classification of Animations

2D Animation

- ✓ In 2D (two-dimensional) animation, the visual change occurs on the **x and y axis** of the screen.
- ✓ This type of animation is simple.
- ✓ Some example of 2D animation software are **Macromedia flash, Synfig Studio and Pencil**.

3D Animation

- ✓ In 3D (three-dimensional) animation, the visual change occurs along three axis namely **x, y and z**.
- ✓ This type of animation gives almost a **realistic view of the image** as can be seen by the human eye.
- ✓ Some examples of 3D animation software are **Maya, Blender and 3D Max**.

Video Recording Application

To record a video using **VLC Media Player** and **Cheese Webcam Booth**

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VLC Media Player

- Download it from Ubuntu Software Center
- It is a free open source multimedia player.

Cheese Webcam Booth

- Open source video recording software
- Available on Ubuntu Software Center.

Working with VLC Media Player

- Open VLC media player.
- Select **Media** → **Open Capturing Device** that will open “**Open Media**” Dialog.
- Select Video device name and Audio device name.
- Select “convert” from the play drop down menu. That will open “**Convert**” dialog box. In that dialog box, select the destination and filename.
- Check “**Display the output**” checkbox to see what you are recording.
- Click on the Start button.
- Once recording done then click on the stop button to stop the recording



Video Formats

- Mp4 is most widely used format for the internet video.
- It is supported by Flash players, YouTube as well as HTML5.

File Extension	Type of File	Description
.avi	Audio Video Interleave File	Developed by Microsoft to play videos in windows environment.
.wmv	Windows Media Format File	.wmv (Windows Media Video) is a compressed video format developed by Microsoft for internet streaming applications.
.mpg, .mpeg	Moving Pictures Expert Group File	Popular video format used for creating movies distributed over internet.

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.mov	Quick Time Format File	Developed by Apple. Files are compressed and are easier to download from internet.
.rm, .ram	Real Video Format File	.ram (Real Audio Metadata) are combination of audio and video.
.swf, .flv	Adobe Flash Shockwave File	Animated file containing text and images. Created by using Adobe Flash software.
.mp4	MPEG4 Video File	Commonly used for sharing video file on the internet.

Interactive objects

- Project where users are given navigational control and variety of media
- **Navigation Control:**
 - At times the user may want to skip a portion of the presentation or want to again go through the same portion.
 - The user is given buttons or hyperlinks for **navigation**. When these interactive objects are clicked, the flow of the presentation changes as per the user's choice.
- **Variety of Media**
 - Earlier the internet browser supported only one media element: **Text**. Text was also limited to single font and color.
 - Now a day latest internet browser support all the media elements.
 - Some media elements can be handled **inline** and some require **plug-in**
 - Inline media objects are specified inside the program using a specific **<inlinemediaobject>** tag.
 - **Plugin** are extra helper programs that can be easily installed and used as a part of the web browser.

Classification of Multimedia

- Generally multimedia is classified into two namely: **Interactive** and **non-interactive multimedia**.
- In **interactive multimedia**,
 - **The sequence and timing of media elements can be controlled by the user.**
 - For example: a multimedia CD-ROM titles and games- The user can control the media elements & use the multimedia according to his/her needs & preference.

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Mass Media

- The communication is one way in traditional mass media like television, radio or newspaper. In other word, we can say that the process originate from the source and is delivered to the mass **audience**.
- One way communication
- Deliver of content to audience

Multimedia

- Multimedia does not remain passive but can **control the elements**.
- Two way communication.
- Deliver of content to user.

- **In non-interactive multimedia,**
 - The user simply watches the media as it plays from beginning to the end. **He/she has no control over the flow.**
 - For example: a corporate presentation or a multimedia.

Classification of multimedia based on its applications

- Another classification of multimedia is based on its applications:
Entertainment or Edutainment.
 - All types of games, movies are examples of entertainment multimedia wherein the purpose is to entertain the user.
 - The **multimedia titles that educate the user** are classified under edutainment multimedia. Example: All types of educational CD's

Usage of Multimedia

- Multimedia has become integral part of our life.
- Multimedia find its application in various areas.
- Some of the usage of multimedia in various fields:
 - Education and Training
 - Advertisement
 - Journalism
 - Entertainment

Education and Training

- We have been using presentations consist of charts, tables and other objects to impart knowledge since a long time.
- Multimedia is used to produce computer based training courses commonly known as CBT.

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- CBT lets the user go through a series of presentations, animations, text about a particular topic along with the examples.
- CBT are used for almost all the age groups right from kindergarden to post graduates.
- Edutainment is an informal term used to describe combining education with entertainment, especially multimedia entertainment
- Uses of multimedia in education and training are:
 - ✓ Recording or broadcasting lecture
 - ✓ Using video conferencing we can hear an expert speaker from a distant location.
 - ✓ Demonstrating surgeries or other techniques that learners may not otherwise have the opportunity to see and later put them in practice.
 - ✓ Record student's performance to enable feedback.

Advertisements

- It is the major source of launching and promoting a product by the manufacturing companies in the market.
 - Excited animation, effects and slogan can make an advertisement popular.
 - For Example, Jujus and pup dog in Vodafone Advertisement.

Entertainment

- Multimedia is heavily used in the entertainment industry to develop special effects in animations and movies.
- Movies like Ice age, Jurassic park, Avatar will always be remembered for their special effects and animations.
- Multimedia games are available either as CD-ROM's or online.
- With usage of virtual gaming, two players in different countries can play a game sitting on their computers.

Journalism

- There are many magazines and newspaper that are published periodically,
- E-newspaper and E-magazines are also available online where we can see the videos related to particular news.

Stages in Multimedia Production

Step 1 : Research and Analysis

- Find out about the audience, their skill, needs & qualification.
- Gather as much information as possible about the content to be presented

Step 2 : Scripting and Flowcharting

- Scripting or flowcharting means deciding the flow of the multimedia project.
- A flowchart to show the main menu and the branching when a user selects a particular option.

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- Draw a flow chart starting with main menu and then the subpages that are linked with each others.

Step 3: Storyboarding

- The actual visualization of the project takes place.
- The designer decides how each screen should look like, which media elements are to be used and where to place them on the screen.

Step 4: Collection and Construction

- The designer is ready with the prototype and starts creating the graphics and other media elements to be used in the project.

Step 5: Programming

- After the collection and construction of media elements, they are combined together into a final product using software packages like Macromedia Flash, Synfig, Hypercard

Step 6: Testing

- We check if all the media elements are working as per the requirement or not.
- Also whether the audience targeted will find the design and content attractive or not.

SOLVING TEXTUAL MCQS

1. The term multimedia has been coined from which of the following terms:
(A) Mix, media (B) Mid, mediate
(C) Multi, mediator (D) Multiple, media
2. How many maximum media elements are combined in Multimedia?
(A) Three (B) Four (C) Five (D) Eight
3. Which of the following terms defines a meaningful speech in any language?
(A) Video (B) Sound (C) Text (D) Animation
4. Times, Century, Bookman are some examples of which of the following font?
(A) Arial (B) Typeface (C) Serif (D) Sans serif
5. Which of the following is an audio file compressed with Windows Media compression?
(A) .mid (B) .wav (C) .mp3 (D) .wma
6. Which of the following terms represent the distance between the top of the letter to the bottom point?
(A) Size (B) Style (C) Length (D) Width
7. Which of the following terms represent typefaces that have different styles and sizes?
(A) Font (B) Text (C) Letter (D) Character
8. Macromedia Flash, Synfig studio and Pencil are examples of which of the following animation types?
(A) 3D (B) 2D (C) 4D (D) 5D

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9. Which of the following terms represent a small dot on the computer screen?
(A) Pixel (B) Point (C) Cursor (D) Cell
10. Which of the following terms represent a classification of images?
(A) Vector, raster (B) Bitmap, raster
(C) Picture, clipart (D) Graphics, picture
11. Which of the following terms represent a visual change over time?
(A) Text (B) Audio (C) Animation (D) Graphics
12. Which of the following terms represent a two dimensional matrix of dots?
(A) Screen (B) Map (C) Cell (D) Array
13. Which of the following terms is full form of MIDI?
(A) Musical Instrument Data Interface (B) Musical Instrument Digital Interface
(C) Musical Image Digital Interface (D) Musical Instrument Digital Image
14. Which of the following terms represent the most common image format used by digital cameras?
(A) .gif (B) .jpeg (C) .tif (D) .bmp
15. Which of the following is used to store the images are stored in form of mathematical equation?
(A) Vector (B) Raster (C) Bitmap (D) Picture
16. Which of the following devices help us to convert photographs into a digital format?
(A) Scanners (B) Modem (C) Printer (D) Monitor
17. Which of the following terms represent PNG?
(A) Programmable Network Graphics (B) Photo Network Graphic
(C) Portable New Graph (D) Portable Network Graphic
18. Which of the following terms represent a helper programs that can easily installed and used as a part of the web browser?
(A) Plug-in (B) Text (C) Video (D) Audio
19. In which of the following terms can Multimedia be classified?
(A) Intelligent and non-intelligent
(B) Interactive and non-interactive multimedia
(C) Intuitive and non-intuitive
(D) Informative and non-informative
20. In which of the following animation types does the visual change occur in the X and Y axis?
(A) 2D (B) 3D (C) 4D (D) 5D

ANSWER KEY

1. D 2. C 3. B 4. C 5. D 6. A 7. A 8. B 9. A 10. A
11. C 12. B 13. B 14. B 15. A 16. A 17. D 18. A 19. B 20. A

FOR STD 11 QUESTION BANK



REFER WEBSITE

nuzhatmemon.com



REFER YOUTUBE

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