

## Multimedia Important Questions

### 1) Define Multimedia.

Ans: Multimedia is the media that uses multiple forms of information content and information processing (e.g. text, audio, graphics, animation, video, and interactivity) to inform or entertain the user. Multimedia also refers to the use of electronic media to store and experience multimedia content.

### 2) What are the desirable features of multimedia?

**Ans:** Desirable features of multimedia are given below:

- **Very High Processing Power:** -- needed to deal with large data processing and real time delivery of media. Special hardware commonplace.
- **Multimedia Capable File System:**-- needed to deliver real-time media -- e.g. Video/Audio Streaming. Special Hardware/Software needed e.g RAID technology.
- **Data Representations/File Formats that support multimedia:**-- Data representations/file formats should be easy to handle yet allow for compression/decompression in real-time.
- **Efficient and High I/O:** -- input and output to the file subsystem needs to be efficient and fast. Needs to allow for real-time recording as well as playback of data. e.g. Direct to Disk recording systems.
- **Special Operating System:**-- to allow access to file system and process data efficiently and quickly. Needs to support direct transfers to disk, real-time scheduling, fast interrupt processing, I/O streaming etc.
- **Storage and Memory:**-- large storage units (of the order of 50 -100 Gb or more) and large memory (50 - 100 Mb or more). Large Caches also required and frequently of Level 2 and 3 hierarchy for efficient management.
- **Network Support:**-- Client-server systems common as distributed systems common.
- **Software Tools:**-- user friendly tools needed to handle media, design and develop applications, deliver media.

### 3) What are the different applications of multimedia?

Ans: Multimedia finds its application in various areas including, but not limited to, advertisements, art, education, entertainment, engineering, medicine, mathematics, business, scientific research and spatial, temporal applications.

A few application areas of multimedia are listed below:

#### ➤ Creative Industries

Creative industries use multimedia for a variety of purposes ranging from fine arts, to entertainment, to commercial art, to journalism, to media and software services provided for any of the industries listed below. An individual multimedia designer may cover the spectrum throughout their career, request for their skills range from technical to analytical and to creative.

#### ➤ Commercial Notes

Multimedia is used in the advertising industry to promote companies, products, and services. The use of animations and graphic designs in commercials to describe goods or services to consumers is known as multimedia advertising. Multimedia boost communication at an affordable cost opened the way for marketing and advertisement. Industrial, business to business, and interoffice communications are often developed by creative services firms for advanced multimedia presentations beyond simple slide shows to sell ideas or live-up training. Commercial multimedia developers may be hired to design for governmental services and nonprofit services applications as well.

#### ➤ Entertainment and Fine Arts

In addition, multimedia is heavily used in the entertainment industry, especially to develop special effects in movies and animations. Multimedia games are a popular pastime and are software programs available either as CD-ROMs or online. Some video games also use multimedia features. Multimedia applications that allow users to actively participate instead of just sitting by as passive recipients of information are called Interactive Multimedia.

#### ➤ Education

In Education, multimedia is used to produce computer-based training courses (popularly called CBTs) and reference books like encyclopedia and almanacs. A CBT lets the user go through a series of presentations, text about a particular topic, and associated illustrations in various information formats. Edutainment is an informal term used to describe combining education with entertainment, especially multimedia entertainment.

➤ **Medicine**

In Medicine, doctors can get trained by looking at a virtual surgery or they can simulate how the human body is affected by diseases spread by viruses and bacteria and then develop techniques to prevent it.

**4) What are various component of Multimedia? Explain.**

**Ans: Components of Multimedia**

Multimedia involves multiple modalities of text, graphics, audio, animation, and video. These components can be divided into two parts Static Media (Text and Graphics) and Dynamic Media (Audio, animation and video).

**Text**

The most popular method of presenting information is through text. Text is commonly used in multimedia for names, headlines, menus, and so on. Microsoft Word, Notepad, and Word Pad are the most widely used applications for displaying text files. The text files may have extensions such as DOC, TXT, etc.

**Graphics**

Graphics are at the heart of any multimedia presentation. They refer to images, digital art, drawings, outlines, sketch, etc. The use of graphics in multimedia increases the usefulness and presentation of the definition. The extension of Graphics file may be .jpeg, .gif, .tiff, etc.

**Audio**

Audio is a most important component of multimedia because it increases the concept's understanding and clarity. For example speech, music, and other forms of audio. Its extensions might be .mp3, .wav, etc.

**Video**

Moving pictures with sound are referred to as video. The video part of a multimedia application conveys a great deal of information in a short period of time. Hence, It is the most effective means of communication.

In multimedia applications, digital video is useful for displaying real-life things. The extensions used by video files may be .mp4, .mkv, etc.

**Animation**

Computer animation is the process of modifying images in such a way that the sequence of images appears to be moving. Animation plays a number of frames per second to give the user the feeling of motion. The extensions of animation & the programs used in displaying animations are the same as in Video.

**5) Explain various characteristics of multimedia.**

Ans: A Multimedia has four basic characteristics:

- Multimedia systems must be **computer controlled**.
- Multimedia systems are **integrated**.
- The information they handle must be represented **digitally**.
- The interface to the final presentation of media is usually **interactive**.

**6) Explain various hardware component used in Multimedia.**

Ans:

Hardware	Description
The Power Supply	It converts AC current into DC current as all computer components operate on DC current.
The System Board	All of the parts inside the computer are assembled on the system board
Central Processing Unit	The CPU is the brain of the computer. Pentium is a popular chip presently.

(CPU)	
RAM (The Memory)	Random Access Memory (RAM) is critical for multimedia. The more memory is the better off the computer.
Hard Drives	Hard disk drive stores software and data. More storage is better for large projects.
CD Drive (read/write)	CD drives can store what hundreds of floppy disks together can. Maximum capacity of CD is about 800 MB presently.
Modem	Modem enables communications between your computer with other computers, the Internet and the World Wide Web
Sound Card	Sound Cards allow conversion of digital sound to analog sound and vice-versa
Keyboard	The keyboard sends typed information to the system board.
Monitor	Monitor is a display device. Choose how many colors they can display and about their resolution.
Mouse	Mouse are used as a pointing device
Printer	Inkjet printers have the ability to turn out good-looking output, including graphics at a lower cost than laser printers. Laser printers produce the best quality, but their cost is high.
Digital Camera(Still/ movie)	To capture pictures and prepare movie.
Video Capture Card	To capture analog video and convert into digital format.
Graphics Card	To view graphics on the screen clearly

## 7) Explain any three software used in Multimedia.

### Ans: Painting and Drawing Software:

**Coreldraw** is vector-based designing software used to create logos, flexes, brochures, invitation cards, and any kind of vector designing based on the lining. This is very old software which was released on 16th January 1989. Corel Corporation developed it, so it is also known as Corel's Graphic Suite as this works vector-based images, so it is used to edit two-dimensional images such as logos and posters. It has lot of clip arts and high-quality drawings, which can be inserted into your multimedia project. One can also generate drawing for an animation sequence by using Corel Draw.

### 3D modelling Software:

**3D Studio Max:** 3D Studio Max is a professional 3D design software package and it is frequently used in the graphic design, developing design concepts and previsualizations, product visualization, interior design, special effects in the film and TV industry, gaming environments, character animation, medical visualization, architectural rendering, storyboards and etc.

### Sound editing Software:

**Audacity:** Audacity is a popular sound recorder and audio editor. It is a capable program while still being easy to use. The majority of users are on Windows but the same Audacity source code compiles to run on Linux and Mac too.

## 8) Explain briefly about the classification of multimedia authoring tools.

Ans:

Authoring Tools Classification	Software (Authoring Tools name)	File Formats
1. Text Editing Tools	MS-Word, WordPad, Adobe InDesign	.txt, .docx, etc
2. Painting & Drawing Tools	Corel Draw, Freehand, Ms. Paint	.jpeg, .png, .bmp
3. Image editing tools	Adobe Photoshop, Paint shop pro	.jpeg, .png, .gif
4. Sound Editing tools	Audacity, Sound Forge	.mp3, .wav
5. Video Editing tools	Adobe Premiere, After effects	.mp4, .mkv
6. Animation & Modelling	3D Studio, Autodesk Maya	.flv, .mp4

### **Text Editing Tools:-**

**MS-Word:** One of the most widely used programs of Microsoft Office suite, MS Word is a word processor developed by Microsoft. Used to make professional-quality documents, letters, reports, etc., MS Word is a word processor developed by Microsoft. It has advanced features which allow you to format and edit your files and documents in the best possible way. MS Word enables users to do write-ups, create documents, resumes, contracts, etc.

### **Painting & Drawing Tools:-**

**CorelDraw:** CorelDraw is a vector graphics editor for Windows and mac OS computers developed by Corel Corporation released in January 1989. The software is a robust graphics suite, providing many features for users to edit graphics. These features include contrast adjustment, color balancing, special effects like borders to images, and support for multiple layers and pages.

### **Image editing tools:-**

**Adobe Photoshop:** Adobe Photoshop is a raster graphics editor developed and published by Adobe Inc in the year in 1988 for Windows and mac OS by Thomas and John Knoll. Photoshop offers users the ability to create, enhance, or otherwise edit images, artwork, and illustrations. Changing backgrounds, simulating a real-life painting, or creating an alternative view of the universe are all possible with Adobe Photoshop. It is the most widely used software tool for photo editing, image manipulation, and retouching for numerous image and video file formats.

## **9) What is virtual reality?**

Virtual Reality (VR) is a term used for computer-generated 3D environments that allow the user to enter and interact with alternate realities. The term Virtual Reality (VR) was initially coined by Jaron Lanier(1989).

## **10) Write the different stages of a multimedia project.**

Ans: **Stages of Multimedia Project:**

A multimedia product is made up of many ingredients from existing print products or from a multitude of software. Each product has its own set of requirements.

Multimedia projects with a well thought out three-stage process involving:

1. **Pre Production**
2. **Production**
3. **Post Production.**

### **Pre Production:**

- **Idea**  
We have to ask the question, “why” we want to develop a multimedia project.
- **Project Goals**  
We determine what the product needs to accomplish.
- **Target Audience**  
Find who our product is speaking to, like Age group, Gender, Expectations etc.
- **Product Concept**  
The core idea is born after several rounds of brainstorming.
- **Delivery Medium**  
How will your message or information reach the audience, like storage media or any online platform?
- **Authoring Tools**  
We determine the authoring tool to be used in the project, like text, audio, video, animation etc.
- **Planning**  
We have to plan about:
  - What building blocks go into your multimedia project?
  - How long will each task take?
  - How much will the product cost?
  - Who is going to do the work?
- **Resource Organization**  
The product’s content is arranged into categories or groups.
- **Flowcharting**

This “roadmap” is essential for the production phase.

- **Orientation**

The opening screens are the graphic and verbal directions to enable the user to find his way around the content.

- **Navigation**

The navigation is the signposts of the project.

- **Defining Screen Action**

Think of your users:

- What they will want or need?
- What their expectations may be?
- What assumptions they may make while using your product?

- **Designing Interface Controls**

At this step, the interface controls (how the user interacts with the computer screen) for each portion of the projects is designed.

- **Storyboards:**

The storyboards are the blueprints for your multimedia project.

- **Theme Development:**

The visual theme or style is determined by the content and the audience.

- **Interface Layouts:**

In this step the goal is to keep users oriented and draw them into the product.

- **Creating Interface Elements:**

The interface design is broken down into individual components, which are constructed using a variety of methods and tools. These components may include images, graphics, text, video, sound, and animation.

- **Creating Access Controls:**

The interface controls designed earlier are now created and constructed. Integrating Media Elements. These controls can be buttons, icons, images, or text.

- **Integrating Media Elements**

The authoring tool is used to pull together and blend all the media elements into a cohesive whole. As the elements come together, the storyboards come to life.

- **Creating Prototype Interfaces**

The shells become the prototype screens and provide the foundation for production. These prototypes are your first experiment in using your creation

## 2. Production:

- **Scriptwriting**

The scripts for the text, transitions, audio narrations, voice-overs, and video are written. Even existing material needs to be rewritten and reorganized for an electronic medium.

- **Editing**

All the scripts, interfaces, and text content are edited for clarity, grammar, and consistency.

- **Creating Original Art Notes**

Illustrations, graphics, buttons, and icons are created using the prototype screens as a guide.

- **Digitizing Art**

Existing photographs, illustrations, and graphics are digitized for use in an electronic medium.

Electronically generated art as well as digitized art must be prepped for use; number of colours, palettes, resolution, format, and size are addressed.

- **The 3D Modelling and Animation**

The 3D artwork is created, rendered, and then prepared for use in the authoring tool. The 3D animations require their own storyboards and schedules.

- **Shooting and Digitizing Video**

The edited scripts are used to plan the identify location, performers, time schedules and budget, then the shoot is scheduled.

- **Recording and Digitizing Audio**

Similarly, the edited scripts (or a composer, if using music) are used to plan the budget, performers and time schedules after which the recording session is scheduled.

- **Authoring**

All the pieces come together in the authoring tool. Functionality is programmed, and 2D animation is developed. From here, the final working product is created.

- **Proofreading**

Every word on the screen is proofread and checked for consistency of formatting. In addition, the proof reader reviews all video and audio against the edited scripts.

- **Quality Control**

Quality control goes on throughout the process. The storyboards are helpful for checking the sequencing.

### 3. Post Production

#### Testing

The product is tested on multiple computers and monitors.

#### Mastering

Mastering can be as simple as writing a CD-ROM or floppy disk. Or it can be as complex as sending the files to a service that will create a pre-master from which the master is made.

#### Archiving

The original files, including audio, video, and the native software formats, are archived for future upgrades or revisions.

#### Duplication

The duplicates are created from the original and packaged accordingly.

### 11) What is the full form of JPEG, GIF, TIFF

Ans:

- **JPEG:** Joint Photographic Experts Group
- **GIF:** Graphics Interchange Format
- **TIFF:** Tagged Image File Format

**12) What is the difference between hypertext and hypermedia?**

**Ans:**

BASIS FOR COMPARISON	HYPERTEXT	HYPERMEDIA
Basic	It is a text that links to the other chunks of the text under the same or separate document.	It can be considered as the enhanced version of hypertext where other graphics is also the part of the link.
Involves	Text	Graphics, image, audio, video, etc.
Relation	Is a part of hypermedia.	Comes in the superior level entity.
Represents	Multimedia content present in the electronic text format.	It can contain various multimedia elements which are linked with each other non-linearly.

**13) What is font?**

**Ans:** A font is a collection of characters of a single size and style belonging to a particular typeface family.

**14) Name any two audio file formats.**

**Ans:**

- .wma — the popular Windows Media Audio format owned by Microsoft.
- .ra — a Real Audio format designed for streaming audio over the Internet.

**15) What is animation?**

**Ans:** Animation is the process of designing, drawing, making layouts and preparation of photographic sequences which are integrated in the multimedia and gaming products. Animation involves the exploitation and management of still images to generate the illusion of movement

**16) What is morphing?**

**Ans:** Morphing is a special effect in motion pictures and animations that changes one image or shape into another through a seamless transition.

**17) What is video? Explain different types of video signals.**

**Ans:** The term video refers to the moving picture, accompanied by sound such as a picture in television.

**Different types of video signals:**

- **Component Video:** Each primary is sent as a separate video signal. Component video is a video signal that has been split into two or more component channels. It refers to a type of component analog video (CAV) information that is transmitted or stored as three separate signals. Component video can be contrasted with composite video (NTSC, PAL or SECAM) in which all the video information is combined into a single line - level signal that is used in analog television.
- **Composite Video** (1 channel): A color analog video signal contains information about luminance (Y) and chrominance (C). When these parameters are combined into one channel, it is called composite video.
- **S-Video** (2 channel): (Separate video) a compromise between component analog video and composite video. it uses two lines, one for luminance and another for composite chrominance signal.

**18) What is MIDI? Explain how MIDI files works?**

**Ans:** MIDI (Musical Instrument Digitization Interface) provides a protocol or a set of rules, using which the musical note is directly recorded into the computer from musical instruments. A MIDI file is basically a list of commands to produce the sound. For example, pressing of a guitar key can be represented as a computer command.

The protocol provides an effective means of conveying musical information as electronic data. Since MIDI files are small in size, these can be embedded while loading of Web pages and promptly played. Length of the MIDI files can be changed without degrading the quality of the signal. As the signals are stored as the notes played on the

musical instrument, working on the MIDI files require knowledge of the music theory. The MIDI data stream is a unidirectional asynchronous bit stream at 31.25 Kbits/sec with 10 bits transmitted per byte (a start bit, 8 data bits, and one stop bit).

The MIDI interface includes three different MIDI connectors, labeled as IN, OUT, and THRU. The MIDI data stream is usually originated by a MIDI controller, such as a musical instrument keyboard, or by a MIDI sequencer. A MIDI controller is a device which is played as an instrument, and it translates that into a MIDI data stream in real time. A MIDI sequencer is a device which allows MIDI data sequences to be captured, stored, edited, combined, and replayed. The MIDI data output from a MIDI controller or sequencer is transmitted via the devices' MIDI OUT connector. The recipient of this MIDI data stream is commonly a MIDI sound generator or sound module, which will receive MIDI messages at its MIDI IN connector, and respond to these messages by playing sounds.

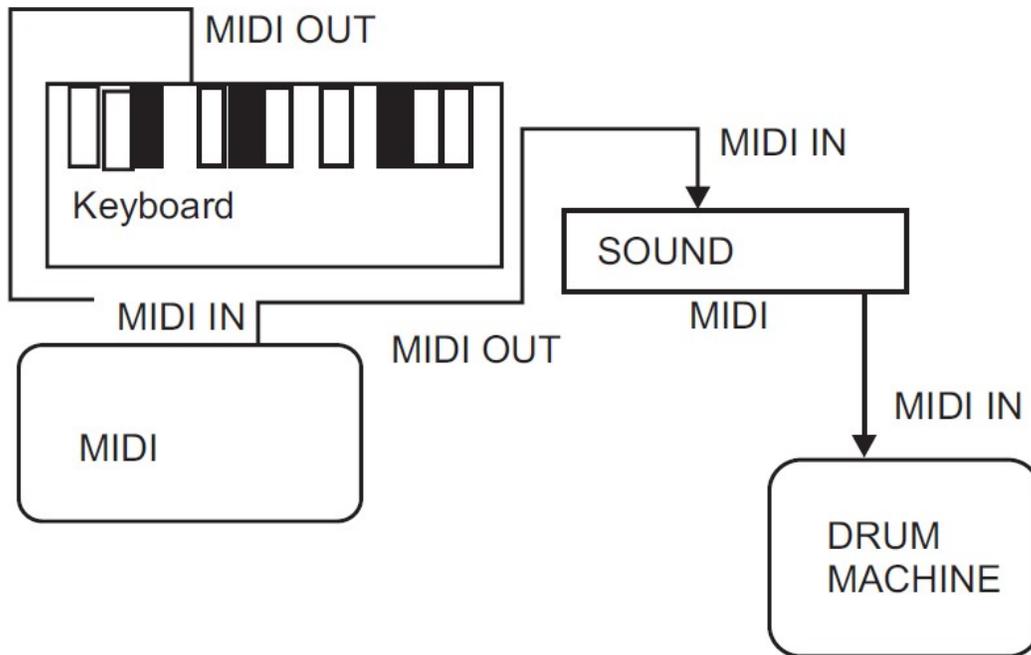


Figure 1 MIDI interface

**19) Comparison between MIDI and Digitized Audio.**

**Ans:**

Comparison	MIDI	Digitized Audio
Representation	Shorthand representation of music stored in numeric form	Sampling is done to convert the data into digital form
Device Independence	Device dependent	Device Independent
File Size	200 to 1000 times smaller than Digitized Audio	Larger File Size
Memory Requirement	Less storage space	Large Storage space
Edit Options	Easily editable and all the information retainable	Difficult to edit.
Quality	Better when played on high quality MIDI device	Not so better
Playback	Does not have consistent playback quality	Consistent playback quality

## 20) What do you mean by color palette? Write about some Colour Palette Generators.

Ans: A color palette, in the digital world, refers to the full range of colors that can be displayed on a device screen or other interface, or in some cases, a collection of colors and tools for use in paint and illustration programs.

### Colour Palette Generators:

#### Kuler Notes:

Kuler is an Adobe Labs colour palette generator and explorer. You can use the Flash-based app to either create your own colour scheme by setting your own hex values or you can search through, rate, and tag, and comment on the schemes that have already been created by others. All the colour schemes can then be downloaded in the Adobe Swatch Exchange (.ASE) format which works with any of Adobe's Creative Suite applications.

#### Colour Hunter:

Colour Hunter is a colour palette generator that uses flickr photos to create a palette. To find colour palettes on Colour Hunter, enter a search term in the box at the top of the page. You can search by tag or hex colour code or the image URL from flickr's Web site. If you have an image that you saved on your computer, you can upload it and get a colour palette generated based on the colours in the image. You can also use Colour Hunter to search by tag.

#### Colour Palette Generator:

The Colour Palette Generator is a simple tool that also lets you use a photo from the Web as the inspiration. It is a bit more basic than Colour Hunter, above, but sometimes that's just what you need. Just enter in the photo's URL from any place on the Web and the generator will create a colour scheme based on the photo.

#### ColourJack:

ColourJack is an online generator that lets you hover over a colour on the site's grid to see themes that use that colour. You can select which format you want to see your colour scheme in (hsv, rgb, or hex) and you can then export it to Illustrator, Photoshop, or ColourJack Studio. Other ColourJack tools include the Colour Sphere and the Colour Galaxy, which provide alternative UIs for generating colour schemes. A Mac OSX widget is also available.

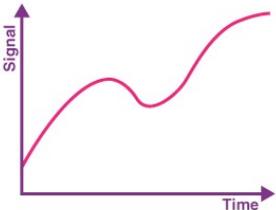
#### Daily Colour Scheme:

Daily Colour Scheme is an "everyday colour resource" that provides you with the colour schemes used by other websites like 9Rules, for example, using those sites as inspiration, you can bookmark their schemes, download them in your preferred format, or import the schemes into your design program like Photoshop, Illustrator, or Top style. There are many more colour palettes available which are used to create the effective palettes.

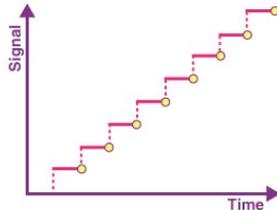
## 21) Differentiate between analog video and digital video.

Ans:

Difference Between Analog And Digital Signal	
Analog Signals	Digital Signals
Continuous signals	Discrete signals
Represented by sine waves	Represented by square waves
Human voice, natural sound, analog electronic devices are a few examples	Computers, optical drives, and other electronic devices
Continuous range of values	Discontinuous values
Records sound waves as they are	Converts into a binary waveform.
Only used in analog devices.	Suited for digital electronics like computers, mobiles and more.



Analog signal



Digital signal

## 22) What is a sound editor and why it is used?

**Ans:** A Sound editor is a computer application for audio editing, i.e. manipulating digital audio. Digital audio editors are the main software component of a digital audio workstation.

### Sound Editor mainly used for :

- Record audio from one or more inputs and store recordings in the computers memory as digital audio
- Edit the start time, stop time, and duration of any sound on the audio timeline
- Fade into or out of a clip (e.g. an S-fade out during applause after a performance), or between clips (e.g. crossfading between takes)
- Mix multiple sound sources/tracks, combine them at various volume levels and pan from channel to channel to one or more output tracks
- Apply simple or advanced effects or filters, including compression, expansion, flanging, reverb, audio noise reduction and equalization to change the audio.
- Playback sound (often after being mixed) that can be sent to one or more outputs, such as speakers, additional processors, or a recording medium
- Conversion between different audio file formats, or between different sound quality levels.
- Editors designed for use in speech research add the ability to make measurements and perform acoustic analyses such as extracting and displaying a fundamental frequency contour or spectrogram. They typically lack most or all of the effects of interest to musicians.

## 23) Define the term animator. Give one example.

**Ans:** An animator is an artist who creates multiple images that give an illusion of movement called animation when displayed in rapid sequence; the images are called frames and key frames. Animators can work in a variety of fields including film, television, video games, and the internet.

**Example:** Ollie Johnston and Frank Thomas are Disney animators.

## 24) Distinguish between bitmap image and vector image.

**Ans:**

Vector	Bitmap
<ul style="list-style-type: none"><li>• Made of shapes.</li><li>• More scalable without losing quality.</li><li>• More specialized uses.</li></ul>	<ul style="list-style-type: none"><li>• Made of pixels.</li><li>• Compatible with Microsoft Paint, Adobe Photoshop, Corel Photo-Paint, Corel Paint Shop Pro, and GIMP.</li><li>• Lose quality when the image is resized larger.</li></ul>

## 25) What are the image file formats? Explain about the widely used image formats.

**Ans:** Image file formats are standardized means of organizing and storing digital images.

### Following are some widely used image formats:

- **Graphics Interchange Format (GIF):** The GIF is a bitmap image format that was introduced by CompuServe in 1987 and has since come into widespread usage on the World Wide Web due to its wide support and portability.
- **Joint Photographic Experts Group (JPEG):** The JPEG is an abbreviated form of Joint Photographic Experts Group, the independent committee that created it as a standard for photography compression.

- **Portable Network Graphics(PNG )**- PNGs are amazing for interactive documents such as web pages but are not suitable for print. While PNGs are "lossless," meaning you can edit them and not lose quality, they are still low resolution. The reason PNGs are used in most web projects is that you can save your image with more colors on a transparent background. This makes for a much sharper, web-quality image.
- **Tagged Image File Format (TIFF)**:- A TIF is a large raster file that doesn't lose quality. This file type is known for using "lossless compression," meaning the original image data is maintained regardless of how often you might copy, re-save, or compress the original file.
- **PSD - Photoshop Document**: PSDs are files that are created and saved in Adobe Photoshop, the most popular graphics editing software ever. This type of file contains "layers" that make modifying the image much easier to handle. This is also the program that generates the raster file types mentioned above.

**26) What is web browser? Give example.**

**Ans:** A web browser is application software for accessing the World Wide Web or a local website. Example – Google Chrome, Mozilla FireFox , Opera

27) Explain briefly about WWW.

Ans:

28) Define term website. What is the difference between webpage and website?

29) Write about different component of computer for create colour on your computer.

30) Distinguish between serif and sans serif font.

31) What are the different types of printers?

32) What are the different types of monitors available?

33) On what principle a scanner works.

34) What are the things we should kept in our mind while designing a website?

35) What is the difference between Internet and Intranet?

36) What is the difference between Intranet and extranet.

37) What are the different types of websites?

38) Why is HTML used for?

39) Define the term element and attributes in terms of html

40) Which tag is used for hyperlink?

41) Which tag is used for inserting an image within the html document?

42) What are the different types of lists used in html?

43) CSS stands for? What are the different types of CSS?

44) What is the use of CSS?