

1. **Define Multimedia?**

Multimedia is a computerized method of presenting information combining textual data, audio, visuals (video), graphics and animations. For examples: E-Mail, Yahoo Messenger, Video Conferencing, and Multimedia Message Service (MMS).

2. **Explain the features of multimedia?**

Integration: Multimedia elements such as text, graphics, audio, and video can be integrated to create a multimedia system. This feature of multimedia enables users to interact with all the elements at single time.

Interactivity: Multimedia systems can be interactive, allowing users to interact with the content through buttons, menus, or other controls.

Compression: Multimedia elements can be compressed to reduce file size and make storing, transferring, and accessing them easier.

Very High Processing Power: Very High Processing Power is used to deal with large amount of data.

File System: File system must be efficient to meet the requirements of continuous media.

Synchronization: This can be seen when we add audio to a video. The editors do it in such a way that both are synchronized and look natural.

Input or Output: Multimedia applications need input devices like a keyboard, mouse, and microphone to interact with users. Output devices like speakers, headphones, and displays are essential to experience and interact with multimedia content.

Editing: Multimedia systems often allow for easy editing and customization of the content, allowing users to create their multimedia elements.

Operating System: The operating system is critical in managing multimedia applications.

Network Support: Multimedia applications can be used for online streaming, file sharing, and video conferencing.

Software Tools: A wide range of software tools is available for creating, editing, and playing multimedia content.

3. **Explain the applications of multimedia?**

Multimedia in Marketing and Advertising- By using multimedia marketing of new products can be greatly enhanced

Multimedia in Entertainment- By using multimedia marketing of new products can be greatly enhanced.

Multimedia in Education- Many computer games with focus on education are now available.

Multimedia in Bank- Bank is another public place where multimedia is finding more and more application in recent times.

Multimedia in Hospital- Multimedia best use in hospitals is for real time monitoring of conditions of patients in critical illness or accident.

4. **Explain the building blocks of multimedia?**

Text- All multimedia productions contain some amount of text. Text and symbols are very important for communication in any medium.

Graphics- Graphics make the multimedia application attractive. In many cases people do not like reading

large amount of textual matter on the screen. Therefore, graphics are used more often than text to explain a concept, present background information etc. There are two types of Graphics:

Bitmap images- Bitmap images are real images that can be captured from devices such as digital cameras or scanners. Generally bitmap images are not editable. Bitmap images require a large amount of memory.

Vector Graphics- Vector graphics are drawn on the computer and only require a small amount of memory. These graphics are editable.

Audio- Sound is perhaps the most element of multimedia. It can provide the listening pleasure of music, the startling accent of special effects or the ambience of a mood-setting background.

Video- Video in multimedia are used to portray real time moving pictures in a multimedia project. The digital video clips can be edited easily.

Animation- Animation is a process of making a static image look like it is moving. An animation is just a continuous series of still images that are displayed in a sequence.

5. Write a note on following images data types

1-bit images

An image is a set of pixels. Note that a pixel is a picture element in digital image. In 1-bit images, each pixel is stored as a single bit (0 or 1). A bit has only two states either on or off, white or black, true or false.

8-bit Gray Level Images

Each pixel of 8-bit gray level image is represented by a single byte (8 bits). Therefore each pixel of such image can hold $2^8=256$ values between 0 and 255.

24-bit Color Images

In 24-bit color image, each pixel is represented by three bytes, usually representing RGB (Red, Green and Blue). Usually true color is defined to mean 256 shades of RGB (Red, Green and Blue) for a total of 16777216 color variations.

6. Explain size, resolution and compression

Higher resolution means higher detail, and can be measured in dots per inch (DPI). high-quality image looks beautiful and professional, whereas a low-resolution image looks fuzzy, indistinct and completely unprofessional.

Image Size is the term given to describe the height and width of an image in pixels. Maximum Image Size is determined by the megapixels of a given camera.

Image compression is the process of converting an image file in such a way that it consumes less space than the original file.

7. Explain memory & storage devices

Memory devices are hardware components used to store data temporarily or permanently in computing systems. They can be categorized into two main types: **primary memory** (also called **volatile memory**) and **secondary memory** (also called **non-volatile memory**).

Primary Memory- Primary memory holds only those data and instructions on which computer is currently working. It has limited capacity and data gets lost when power is switched off. It is divided into two subcategories RAM and ROM.

Flash Memory- It is used to hold those parts of data and program which are most frequently used by CPU. The parts of data and programs are transferred from disk to cache memory by operating system, from where CPU can access them.

Secondary Memory: This type of memory is also known as external memory or non-volatile. It is slower than main memory. These are used for storing Data/Information permanently.