12 STANDARD COMPUTER APPLICATION STUDY MATERIAL

CHAPTER 01

Multimedia and Desktop Publishing

One Mark Questions

1. **Multimedia** allows the users to combine and change data from various sources like image, text, graphics, video, audio and video to a single platform

2. **Multimedia** has become the latest enriching experience in the field of information sector

3. The word multimedia consists of two words "**multi**" **and** "**media"**

4. Multimedia has **five** major components like text, images, sound, video and animation

5. **Text** is the basic components of multimedia and most common ways of communicating information to other person

6. **Static text**, the text or the words will remain static as a heading or in a line, or in a paragraph

7. A **hypertext** is a system which consists of nodes,

8. **Images** acts as an vital component in multimedia

9. Images are generated by the computer in **two ways, as bitmap or raster images and as vector images**

10. The common and comprehensive form of storing images in a computer is **raster or bitmap image**

11. **Bitmap** is a simple matrix of the tiny dots called pixel that forms a raster or bitmap image

12. Drawing elements or objects such as lines, rectangles, circles and so on to create an images are based on **Vector images**

13. **Compression** techniques are used to reduce the size of the file

15. **Animation** is the process displaying still images so quickly so that they give the impression of continuous movement.

16. **16 frames per second** gives the impression of smoothness

17. **25 frames per second** gives natural looking

18. Animations may be in **two or three dimensional.**

19. The **two dimensional animation**, bring an image alive

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20. The two basic types of animations are **Path animation and Frame animation.**

21. **Path animation** involves moving an object on a screen that has a constant background

22. In **frame animations**, multiple objects are allowed to travel simultaneously

23. **Sound** is a meaningful speech in any language and is the most serious element in multimedia

24. **Decibels** is the measurement of volume, the pressure level of sound

25. **MIDI** - Musical Instrument Digital Identifier

26 **Musical Instrument Digital Identifier (MIDI)** is a standard communication tool developed for computers and electronic instruments.

27. **Video** is defined as the display of recorded event, scene

28. The video can be categorized in two types as **Analog video and Digital video**

29. In **Analog video**, the video data's are stored in any non-computer media like video tape, laserdisc, film etc

30. Analog video is further divided into **Composite and Component Analogue Video**

31. **Composite Analog Video** has all the video components like brightness, color, and synchronization combined into one signal

32. **Rich Text Format** is the primary file format introduced in 1987 by Microsoft

33. **Plain text** is the original and popular way of conveying an e-mail.

34. **Plain text** files can be opened, read, and edited with most text editors

35. **TIFF** (Tagged Image File Format)

36. **TIFF** format is common in desktop publishing world (high quality output),

37. **BMP** format is in use with Windows 3.1.

38. **DIB** (Device Independent Bitmap)

39. **DIB** allows the files to be displayed on a variety of devices

40. **GIF** (Graphics Interchange Format)

41. **GIF** is a compressed image format.

42. **GIF** file format is best suitable for graphics that uses only limited colors

43. **JPEG** (Joint Photographic Experts Group) 44.JPEG uses lossy compression

45. **JPEG** format works good with photographs, naturalistic artwork

46. **TGA** (Tagra)

47. **TGA** is the first popular format for high resolution images

48. **PNG** (Portable Network Graphics)

49. An extensible file format for the less loss, portable and well compressed storage of raster images is **PNG**

50.**PNG** is fully streameable with a best display option.

51. **WAV** (Waveform Audio File Format)

52. **WAV** is the most popular audio file format in windows for storing uncompressed sound files

53. **MPEG Layer-3** format is the most popular format for storing and downloading music

54. A free, open source container format that is designed for obtaining better streaming is **OGG**

55. **AIFF** (Audio Interchange File Format)

56. A standard audio file format used by **Apple**

57. **WMA** (Windows Media Audio)

58. **WMA** is a popular windows media audio format owned by Microsoft

59. Digital Right Management (**DRM**)

60. **RA** (Real Audio Format)

61. **Real Audio format** is designed for streaming audio over the Internet

62. **AVI** (Audio/Video Interleave)

63. In AVI sound and picture elements are stored in alternate interleaved chunks in the file

64. **MPEG** (Moving Picture Experts Group)

65. **MPEG** is a standard for generating digital video and audio compression International Standards Organization (ISO) by the group of people

66. **MPEG-2**, the standard that supports products as Digital Television set top Boxes and DVD

67. **MPEG-4**, the standard for multimedia and mobile web

68. **MPEG-7**, the standard for search of audio and visual content

69. Adequate time and efficient planning is required for **multimedia production**

70.There are **12 steps** in Multimedia production

71. The process of multimedia making begins with a **conceptual ignition point**

72 **Conceptual** analysis identifies a appropriate theme, budget and content availability on that selected theme

73. General statements are termed as **goals**

74. The specific statements in the project is known as the **objectives**

75. **Content** is the "stuff" provided by content specialist to the multimedia architect

76. Multimedia applications are best delivered on **CD/DVD** or in the website

77. **Content** specialist is responsible for performing all research activities concerned with the proposed application's content

78. **Program content** refers to projects information, graphics, data or facts presented through the multimedia production

79. The **script writer** visualizes the concepts in three dimensional environments

80. **Text and narration** is an integrated part of the application

81. **Multimedia architect** integrates all the multimedia building blocks using an authoring software

82. **Computer Graphic Artist** deal with the graphic elements of the programs

83. The responsibility of the web master is to create and maintain an Internet **web page**

84. **Web master** provides access to a wide range of community through web-services

85. **55 million** consumers use Internet radio and video services each month

86. **Image** is the most widely used multimedia resource on internet

87. **Multimedia** is the most fast growing area in the field of information technology

88. **Multimedia** plays an vital role in offering an excellent alternative method to traditional teaching

89. Multimedia based teaching and learning system named as **MODULO**

90. **EDUSAT** (Education Satellite) is launched in India for serving the

educational sector of the country

91. **Video on demand** or movies on demand is a service that provides movies to television sets on an individual basis at homes

92. Banks uses kiosks in the form of **ATM machines**

93. **Multimedia conferencing or videoconferencing** is a system that performs face- to-face interactions among participating users

94. The primary function of **library** is to organize, collect, preserve, and disseminate information to users

95. **Kiosk** is a free-standing furnished equipped multimedia computer that allow users to retrieve information via a touch screen

96. The live telecast of real time programs through internet is known as **Webcasting**

97. **Video conferencing** is the process of conducting conference between more than two participants at different sites

Two Marks

1.Define multimedia

The term multimedia comprises of two words, "multi" and "medium Multimedia is an integration of many types of media like text, graphics, images, audio, animation, video etc on a single medium in the same information unit

2.List the components of Multimedia

The multimedia has five major components. They are

⊔ Text,

⊔ Images,

⊔ Sound,

⊔ Video

⊔ Animation

3. Classify the TEXT component in multimedia Text component in multimedia can be classified as

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1. Static text

2. Hypertext

Static Text:

• The text or the words will remain static as a heading or in a line, or in a paragraph.

• The words are given along with the images to explain about the images.

Hypertext

• A hypertext is a system which consists of nodes,

• The text and the links between the nodes, defines the paths

• The user need to follow for the text access in non-sequential ways

4. Classify the IMAGE component in multimedia

Image component in multimedia can be classified as

1. Raster or Bitmap Images

2. Vector Images

Raster or Bitmap Images:

The common and comprehensive form of storing images in a computer is raster or bitmap image

Vector Images:

Drawing elements or objects such as lines, rectangles, circles and so on to create an images are based on Vector images

5. Define Animation and their features

• Animation is the process displaying still images so quickly so that they give the impression of continuous movement.

• Animations are used to illustrate or demonstrate an idea or concept.

• Animations may be in two or three dimensional.

• Two dimensional animation, bring an image alive,

• Three dimensional animation it occurs along the three axis

6. List out image file formats

1. TIFF (Tagged Image File Format)

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2. BMP (Bitmap)

3. DIB (Device Independent Bitmap)

4. GIF (Graphics Interchange Format)

5. JPEG (Joint Photographic Experts Group)

6. TGA (Tagra)

7. List out audio file formats

1. WAV (Waveform Audio File Format)

2. MP3 (MPEG Layer-3 Format)

3. OGG

4. AIFF (Audio Interchange File Format)

5. WMA (Windows Media Audio)

6. RA (Real Audio Format)

8. List out video file formats

 1.AVI (Audio/Video Interleave)

2. MPEG (Moving Picture Experts Group)

9. Define Multimedia Production

Multimedia production is any sort of production that uses imagery and a combination of text, audio, and graphics to tell a story.

This story might be the sale of a product, or it might be the narration of an event

10. List out Multimedia Production team members

Multimedia Production Team comprises of the following members:

1. Production Manager 2.Content specialist 3.Script writer 4.Text editor

5.Multimedia architect 6.Computer graphic artist 7.Audio and video specialist

8.Web master

Part - III

1. Briefly explain about Multimedia Components

Text

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- Text is the basic components of multimedia and most common ways of communicating information to other person
- Text is the basic components used in multimedia.

Image

- Images are generated by the computer in two ways, as bitmap or raster images and as vector images. Animation
- Animation is the process displaying still images so quickly so that they give the impression of continuous movement.
- 16 frames per second gives the impression of smoothness
- 25 frames per second gives natural looking.
- Animations may be in two or three dimensional.
- The two dimensional animation, bring an image alive, that occur on the flat X and Y axis of the screen.
- While in three dimensional animation it occurs along the three axis X, Y and Z. The two basic types of animations are Path animation and Frame animation

Sound

- Sound is a meaningful speech in any language and is the most serious element in multimedia
- Decibels is the measurement of volume, the pressure level of sound.

Video

- Video is defined as the display of recorded event, scene etc.
- The video can be categorized in two types as Analog video and Digital video.

2. Describe the features and techniques of animation

- Animation is the process displaying still images so quickly so that they give the impression of continuous movement.
- Using numerical transformations the movement of that image along its paths is calculated for their defining coordinates.
- At least 16 frames per second gives the impression of smoothness and
- Natural looking it should be at least 25 frames per second.
- Animations may be in two or three dimensional
- The two basic types of animations are Path animation and Frame

animation Path Animation Path animation involves moving an object on a screen that has a constant background. Frame Animation In frame animations, multiple objects are allowed to travel simultaneously and the background or the objects also changes.

3. Write roles and responsibilities of Production team members

1. Production Manager

• To define, and coordinate, the production of the multimedia project in time and with full quality.

2. Content Specialist

• Content specialist is responsible for performing all research activities.

3. Script Writer

The script writer visualizes the concepts in three dimensional environments

4. Text Editor

The content of a multimedia production always must flow logically and the text should always be structured and correct grammatically.

5. Multimedia Architect

The multimedia architect integrates all the multimedia building blocks like graphics, text, audio, music, video, photos and animation by using an authoring software.

6. Computer Graphic Artist

The role of Computer Graphic Artist is to deal with the graphic elements of the programs like backgrounds, bullets, buttons, pictures editing, 3-D objects, animation, and logos etc.

7. Audio and Video Specialist

They are responsible for recording, editing sound effects and digitizing.

8. Computer Programmer

The computer programmer writes the lines of code or scripts in the appropriate language.

9.Web Master

The responsibility of the web master is to create and maintain an Internet web page.

4. Describe the various file formats in multimedia

Text Formats

RTF

Rich Text Format is the primary file format introduced in 1987 by Microsoft for cross-platform documents interchange. Plain text

Plain text files can be opened, read, and edited with most text editors.

Commonly used are Notepad (Windows), Gedit or nano (Unix, Linux), TIFF (Tagged Image File Format)

This format is common in desktop publishing world (high quality output)

BMP (Bitmap)

BMP is used for the high-resolution or large images.

DIB (Device Independent Bitmap)

This format allows the files to be displayed on a variety of devices.

GIF (Graphics Interchange Format)

GIF is a compressed image format. This file format is best suitable for graphics that uses only

JPEG (Joint Photographic Experts Group)

It uses lossy compression technique,

It works good with photographs, naturalistic artwork,

PNG (Portable Network Graphics)

PNG works good with online viewing applications like worldwide web so it is fully streameable with a best display option.

WAV (Waveform Audio File Format)

It is the most popular audio file format in windows for storing uncompressed sound files.

MP3 (MPEG Layer-3 Format)

MPEG Layer-3 format is the most popular format for storing and downloading music.

AIFF (Audio Interchange File Format)

A standard audio file format used by Apple for the Mac. WMA (Windows Media Audio) RA (Real Audio Format) Real Audio format is designed for

streaming audio over the Internet. formats are wave files (.WAV) and MPEG Layer-3 files (.MP3), WMA and RA.

AVI (Audio/Video Interleave)

AVI is the video file format for Windows.

Sound and picture elements are stored in alternate interleaved chunks in the file.

5. Explain animation industry and their scope

• As of 2015, the animation industry has matured in India and has moved on from being just an outsourcing facility to a creator of indigenous intellectual property

• There are more than 300 animation studios in India as of 2015, which are estimated to have employed more than 15,000 animation professionals.

• As of now, 20,000 (5%) people out of 4 lakh people in the media and entertainment sector are employed in the animation, VFX and gaming side.

• Work opportunities for quality animators and related professionals like graphic designer, multimedia developer and game developer, character designers, key frame animators, 3D modelers, layout artists etc exists in following sectors at large-

• Advertising
• Online and Print News Media
• Film & Television
• Cartoon production
• Theater
• Video Gaming
• E-learning

Five Marks

1.Explain in detail Process of Multimedia.

1. Conceptual Analysis and Planning

• Conceptual analysis identifies a appropriate theme, budget and content availability on that selected theme.

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- Copyright issues also are considered in this phase.

2. Project design

- Once the theme is finalized objectives, goals, and activities are drawn for the multimedia project.

- General statements are termed as goals.

- The specific statements in the project is known as the objectives.

- Activities are series of actions performed to implement an objective. These activities contribute to the Project design phase.

3. Pre-production

Based on the planning and design, it is necessary to develop the project.

4. Budgeting

Budgeting for each phases like consultants, hardware, software, travel, communication and publishing is estimated for all the multimedia projects.

5. Multimedia Production Team

The production team for a high end multimedia project requires a team efforts. The team comprises of members like Script writer, Production manager, Editor, Graphics Architect, Multimedia Architect and Web Master.

6. Hardware/Software Selection

Hardware includes CPU, RAM and huge monitors, sufficient disc for storing the records.

Suitable software and file formats depends on the funds available for the project being developed.

7. Defining the Content

Content is the "stuff " provided by content specialist to the multimedia architect with which the application is developed,

8. Preparing the structure

A detailed structure must have information about all the steps along with the timeline of the future action.

This structure defines the activities, responsible person for each activity and the start/end time for each activity.

9. Production

This phase includes the activities like background music selection, sound

recording and so on.

Text is incorporated using OCR software, Pictures shot by digital camera, Video clips are shot, edited and compressed. A pilot project is ready by this time.

10. Testing

The complete testing of the pilot product is done before the mass production If it's an web based product, its functioning is tested with different browsers like Internet Explorer, Chrome, Mozilla and Netscape Navigator.

If it is a local multimedia application on a LAN it must be deployed in the server for testing purpose.

11. Documentation

User documentation is a mandatory feature of all multimedia projects. The documentation has all the valuable information's starting from the system requirement till the completion of testing. Contact details, e-mail address and phone numbers are provided for technical support and sending suggestions and comments.

12. Delivering the Multimedia Product

Multimedia applications are best delivered on CD/DVD or in the website . Finally, a multimedia application is delivered in a more effective way by the integration of two mediums CD-ROM/DVD and Internet.

2. Explain in detail Techniques of Animation

• Animation is the process displaying still images so quickly so that they give the impression of continuous movement.

• Using numerical transformations the movement of that image along its paths is calculated for their defining coordinates.

• Frame rate of at least 16 frames per second gives the impression of smoothness

• Frame rate of at least 25 frames per second gives natural looking.

• Animations may be in two or three dimensional.

• The two dimensional animation, bring an image alive,

• While in three dimensional animation it occurs along the three axis X, Y and Z.

• The two basic types of animations are Path animation and Frame

animation.

Path Animation:

Path animation involves moving an object on a screen that has a constant background

E.g. a cartoon character may move across the screen regardless of any change in the background or the character

Frame Animation

In frame animations, multiple objects are allowed to travel simultaneously and the background or the objects also changes

3. Explore the opportunities of Animation in the field of movie industry

• In India, the VFX domain, or the animation and visual effects industry, has been growing stronger and stronger in recent years.

• Animation and visual effects requirements for massive international projects such as HBO's top TV series and Marvel's hits Infinity War and Black Panther was outsourced to Indian companies in Mumbai and Pune.

• The surge in demand for animation and visual effects experts has led to a significant increase in the number of students enrolling for a VFX course.

• According to a FICCI-EY 2018 report, India's animation and VFX industry is currently worth approximately Rs. 80 billion and is expected to reach Rs. 114 billion over the next couple of years,

• As such, a student that completes a 3D animation course can hope to build a rewarding and satisfying career in the Media and Entertainment field these days.

• Sahibzaade is a 2014 Punjabi language Indian 3D computer-animated historical film directed by Harry Baweja, whose animation work was handled by i.Realities. The movie cost was Rs.20 crores and it earned Rs.70 crores globally

• The new channels are the oldest hires of students that have completed an animation course.

• One of the best examples is the logo of Doordarshan TV channel.

• After the government allowed the private channels to operate in the country, it has become a common practice in all channels to display an animated logo before the start of each programme.

- The entertainment and news channels owned by the government and private parties rely on graphics and animation experts for various purposes.
- Often they employ a team of in-house graphics, animation, and visual effects professionals.
- The advent of channels such as Pogo, Nickelodeon, and Cartoon Network has further opened up opportunities for animation professionals.

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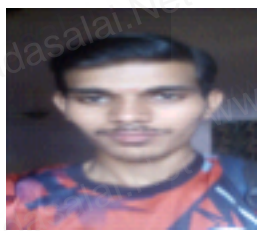
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