

Module 1: Digital Content

1. The symbols that represent people, events, things, and ideas are referred to as _____.

ANSWER: data

2. The name “Charlie,” the number 19.99, and the colors in a photograph of a rainbow are all examples of data.

- a. True
- b. False

ANSWER: True

3. The analog methods formerly used to store, process, and transmit data have been replaced by digital data _____.

ANSWER: representation

4. Text, numbers, graphics, sound, and video that have been converted into discrete digits such as 0s and 1s are _____.

- a. represented without compression
- b. represented using an infinite scale of values
- c. analog data
- d. digital data

ANSWER: d

5. OCR assigns the appropriate ASCII or Unicode characters to the letters shown on a scanned document so that they can be edited using word processing software.

- a. True
- b. False

ANSWER: True

6. The 0s and 1s used to represent digital data are referred to as _____ digits.

ANSWER: binary

7. Digital devices can represent virtually any number simply by using the 0s and 1s of the _____.

- a. decimal number system
- b. ASCII character set
- c. Unicode system
- d. binary number system

ANSWER: d

8. Character data is composed of letters, symbols, and numerals that are used in calculations.

- a. True
- b. False

ANSWER: False

9. The American Standard Code for Information Interchange (ASCII) requires how many bits for each character?

- a. two
- b. six
- c. seven
- d. ten

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ANSWER:

c

10. Numbers that represent dollar amounts and will be used to calculate the total cost and sales tax for an order are represented as _____.

- a. Unicode
- b. UTF-8
- c. ASCII codes
- d. binary numbers

ANSWER:

d

11. The binary number 101 is equal to the decimal number 6.

- a. True
- b. False

ANSWER:

True

12. ASCII text files contain formatting.

- a. True
- b. False

ANSWER:

False

13. In a formatted text file, the beginning and end of a formatting command are signaled by a(n) _____.
ANSWER: delimiter

14. All of the data stored and transmitted by digital devices is encoded as bits.

- a. True
- b. False

ANSWER:

True

15. A technique that recodes the data in a file so that it contains fewer bits achieves data _____.
ANSWER: compression

16. Lossy compression throws away some of the original data during the compression process.

- a. True
- b. False

ANSWER:

True

17. Which extension at the end of a file name indicates that the file has been compressed?

- a. .exe
- b. .zip
- c. .txt
- d. none of the above

ANSWER:

b

18. The pieces of a sound wave that are collected at periodic intervals and stored as numeric data in an audio file to

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digitally record sound are called ____.

ANSWER: samples

19. The number of times per second that a sound is measured during the recording process is referred to as the sampling ____.

- a. rate
- b. compression
- c. depth
- d. sound

ANSWER: a

20. Audio for applications that require high-quality sound should be recorded using low sampling rates.

- a. True
- b. False

ANSWER: False

21. Regardless of sampling rate, digital audio file size can be reduced using audio compression techniques.

- a. True
- b. False

ANSWER: True

22. Which type of audio file format is used to store most music for portable media players?

- a. uncompressed
- b. compressed
- c. lossless
- d. zipped

ANSWER: b

23. A file with the .wav extension ____.

- a. uses lossless compression
- b. uses lossy compression
- c. is supported in Web browsers without any plugins
- d. will be smaller in size than files storing the same data in alternative formats

ANSWER: c

24. To convert an audio file stored on a CD into a format that you can listen to on a smartphone you can use the process called ____.

- a. digital audio extraction
- b. streaming
- c. sampling
- d. digital audio compression

ANSWER: a

25. The technical term for ripping music tracks is *digital audio extraction*.

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- a. True
- b. False

ANSWER: True

26. One of the main disadvantages of MIDI is that it cannot produce vocals.

- a. True
- b. False

ANSWER: True

27. Text-to-speech software analyzes the words in a section of text, finds corresponding phonemes, and combines them into sentences for output.

- a. True
- b. False

ANSWER: True

28. Speech recognition software analyzes the sounds of your voice and converts each word into groups of _____.

ANSWER: phonemes, phoneme

29. A bitmap graphic is composed of a grid of tiny rectangular cells.

- a. True
- b. False

ANSWER: True

30. In a digital camera, pixels correspond to a charge-coupled device's (CCD's) _____.

ANSWER: photosites, photosite

31. Which of the following is *not* a type of bitmap format?

- a. TIFF
- b. RAW
- c. PNG
- d. ZIP

ANSWER: d

32. If you are preparing bitmap images for a Web page using a popular file format with True Color data and built-in compression that you can control when converting from another image format, you are using the _____ file format.

ANSWER: JPEG, Joint Photographic Experts Group

33. Eight-bit color depth is also called True Color.

- a. True
- b. False

ANSWER: False

34. The dimensions of the grid that forms a bitmap graphic are referred to as image _____.

ANSWER: resolution

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35. Hannah is making invitations for her son's birthday party and wants to embellish them with a picture she downloaded from the Internet. It is small, so she stretches it from the corner on the screen to make it larger, but then realizes the quality has been reduced; she sees little squares of color here and there. This unattractive appearance of the image is called _____.

ANSWER: pixelation

36. When you attempt to enlarge a bitmap by increasing its resolution, graphics software will typically create new pixels by averaging the colors of nearby pixels, a process called pixel _____.

- a. polarization
- b. interpolation
- c. compression
- d. resolution

ANSWER: b

37. TIFF, PNG, and GIF (Graphics Interchange Format) graphics formats offer lossy compression.

- a. True
- b. False

ANSWER: False

38. Joint Photographic Experts Group (JPEG) files are compressed using lossy compression.

- a. True
- b. False

ANSWER: True

39. Lossy compression techniques discard some data from an image to shrink its file size.

- a. True
- b. False

ANSWER: True

40. On digital device displays, color is represented using the _____ color model.

ANSWER: RGB

41. You can adjust the brightness values for various ranges of dark, mid-range, or light pixels within an image using a photo editor's _____.

- a. inpainting feature
- b. image histogram
- c. noise reduction
- d. distortion correction

ANSWER: b

42. The CMYK color model defines four color values: cyan, magenta, yellow, and _____.

ANSWER: black

43. A Web designer who combines several separate photographs with overlapping edges in order to create a panoramic image is using a technique called _____.

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- a. image stitching
- b. clipping path joining
- c. Cloning
- d. Inpainting

ANSWER:

a

44. A vector graphic consists of a set of instructions for creating a picture.

- a. True
- b. False

ANSWER:

True

45. Vector graphics file size does not depend on the size and complexity of the image.

- a. True
- b. False

ANSWER:

False

46. Vector graphics are _____.

- a. not suitable for engineering diagrams or floor plans
- b. typically saved as RAW or GIF files
- c. difficult to scale or edit
- d. suitable for most line art, logos, and diagrams

ANSWER:

d

47. In the movie industry, pre-rendered vector animation sequences called VFXs are integrated into live-action footage to produce CGI.

- a. True
- b. False

ANSWER:

False

48. Which of the following file extensions does *not* indicate that a file is a vector graphic file?

- a. .svg
- b. .eps
- c. .tif
- d. .ai

ANSWER:

c

49. How do you produce a 2D image of an irregular shape such as a bumpy stone with vector graphics software?

- a. Draw a series of short line segments to outline the stone, then fill it with color.
- b. Download a drawing of a stone from the Internet and import it into the application.
- c. Take a photograph of a bumpy stone, then rasterize it.
- d. Generate a wireframe to outline the stone and then process it using rendering.

ANSWER:

a

50. After a vector graphic is converted to a bitmap, the resulting graphic no longer has the qualities of a vector graphic.

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- a. True
- b. False

ANSWER: True

51. Rendering a 3D graphic means determining the surface dimensions between the vectors that compose its wireframe.

- a. True
- b. False

ANSWER: True

52. The process for creating a vector-based computer animation ____.

- a. is essentially different from the process for creating a traditional hand-drawn animation
- b. prevents the artist from pre-rendering the animation for distribution
- c. is so simple that most artists do not rely on software tools or frameworks
- d. requires the artist to create keyframes of vector objects

ANSWER: d

53. Analog video footage from legacy sources can be digitized using video ____ equipment.

ANSWER: capture

54. Among the access options for digital video, the option that is unique in that it is not pre-recorded is the ____ stream.

ANSWER: real live

55. Interlaced scanning ____.

- a. draws a frame in a single pass from top to bottom
- b. is typically the form used by digital video for computers
- c. produces an image by drawing every other line
- d. the technique indicated by the “p” in “1080p”

ANSWER: c

56. Which of the following are *not* factors that directly affect the quality of digital video?

- a. frame rate and resolution
- b. color depth and bit depth
- c. compression technique
- d. capture device’s memory and storage technologies

ANSWER: d

57. MP4 holds both a video stream that was produced with the H.264 codec and an AAC audio stream, and is thus classified as a(n) ____.

ANSWER: container format

58. The number of bitmap images that are displayed per second as a video plays is called the ____.

- a. compression rate
- b. frame rate
- c. color depth

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d. resolution

ANSWER:

b

59. Digital videos look sharpest when they are displayed at a resolution that is larger than the frame size.

- a. True
- b. False

ANSWER:

False

60. Video resolutions can be expressed as width times height.

- a. True
- b. False

ANSWER:

True

61. Today's widescreen devices, such as laptops and smartphones, are designed for the 16:9 _____.

- a. resolution
- b. aspect ratio
- c. frame rate
- d. codec

ANSWER:

b

62. When 4:3 videos are displayed in a widescreen player, they are bordered by the black bars of a(n) _____.

ANSWER:

letterbox

63. In digital video, as long as the proportion of horizontal and vertical pixels remains the same, the aspect ratio is consistent.

- a. True
- b. False

ANSWER:

True

64. The video compression technique that stores only the pixels that change color from one frame to the next is called _____ compression

ANSWER:

Interframe

65. The QuickTime legacy format for downloaded and streaming Web videos uses the file extension _____.

ANSWER:

.mov

66. The software that compresses a vector graphic video stream when a video is stored and decompresses the file when the video is played is a(n) _____.

- a. renderer
- b. codec
- c. bitmap
- d. container

ANSWER:

b

67. Which of the following is *not* a type of file format that holds a compressed video stream and an audio stream?

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- a. MPEG
- b. AVI
- c. VOB
- d. PNG

ANSWER:

d

68. Movies that appear to have visual depth, commonly called “3D movies,” are created by filming footage from all angles simultaneously with multiple video cameras.

- a. True
- b. False

ANSWER:

False

69. A live stream _____.

- a. is downloaded to your device
- b. is also called a Webcast
- c. can be paused or rewound
- d. is accessed using an audio interface

ANSWER:

b

70. Media is sent to a local device where it is stored temporarily, or “buffered,” until there is enough data to begin playback by a(n) _____ stream.

- a. download
- b. live
- c. on-demand
- d. delayed

ANSWER:

c

71. Digital photographers use software such as Autopano or PTGui, panoramic functions on digital cameras, or smartphone apps such as Photo Sphere to capture photos for image _____.

- a. stitching
- b. compression
- c. cropping
- d. compositing

ANSWER:

a

72. Manipulating two-dimensional images to produce the illusion of three-dimensional depth is called _____.

- a. pairing
- b. stitching
- c. stereoscopy
- d. dimensionization

ANSWER:

c

73. Combining two images with red and blue overlays to create a stereoscopic effect produces a graphic called a(n) _____.

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- a. stereo pair
- b. anaglyph
- c. VOB
- d. stereogram

ANSWER:

b

74. A photographer can capture images of a scene from the front, back, and sides and then stitch them together to produce a 360-degree image similar to the view from a merry-go-round, called a(n) _____.

- a. rectilinear projection
- b. cylindrical projection
- c. spherical projection
- d. anaglyph

ANSWER:

b

75. Which technology adds computer-generated vector objects to a view of the real world?

- a. Augmented reality
- b. Cylindrical projection
- c. Virtual reality
- d. Stereoscopy

ANSWER:

a

76. 76. Martijn downloads a new app to his smartphone that lets point his camera at one of his friends and see what they would look like with a cartoon animal dancing on their head as they walk around. How should you categorize this type of technology?

- a. virtual reality
- b. 360-degree projection
- c. augmented reality
- d. lossless compression

ANSWER:

c

77. When vector animations are used for special effects in movies, the animation sequences are _____.

- a. scanned into PNG format
- b. pre-rendered into digital video clips
- c. compressed into anaglyphs
- d. rendered in real time

ANSWER:

b

78. Interactive sequences in video games require developers to produce a series of bitmap images while the game is played using _____.

- a. real-time rendering
- b. delayed buffering
- c. spherical projection
- d. motion cropping

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ANSWER:

a

79. Riley wants to compress a group of Microsoft Word files into one unit that she can e-mail to a colleague at work from her Mac. She should begin by _____.

- a. searching for files with a .zip extension
- b. starting File Explorer and right-clicking the files
- c. downloading compression codec software
- d. opening Finder and selecting the files

ANSWER:

d

80. Romanus conducts a photo shoot late in the afternoon for a client. When he examines the photographs on his laptop later, he discovers that the sunlight has made the foreground objects appear too dark in some of them. Romanus can remediate this problem by _____.

- a. adjusting the image using noise reduction software
- b. inpainting the darkened areas of the image in his image editor
- c. sliding the levels bar in his image editor's histogram tool
- d. performing alpha blending to lighten the foreground areas

ANSWER:

c

81. When recording narration for a brief instructional video, Jerusha _____.

- a. chooses the standard sampling rate for most consumer audio, which is 475 Hz
- b. selects a sampling rate of 11 kHz because this project doesn't require high-quality sound
- c. sets the sampling rate at 44.1 kHz in order produce a smaller file compared with the standard sampling rate
- d. uses 2 bits of storage space per sample to achieve a high-fidelity recording

ANSWER:

b