Unit 3 · Multimedia

WORKSHEET

Full marks 31

Name _____ Class _____ Roll no. ____ Date _____ Marks _____ / 31

1 Key words [4]

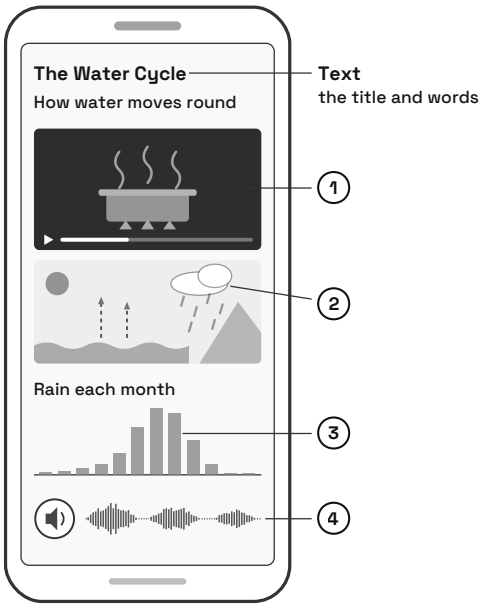
Fill in the blanks with words from the box. Two words in the box are not needed. Each blank carries 0.5 mark.

3D	amplitude	frame rate	keyframes	lossy	pitch	pixels	resolution	rigging	vector

A raster picture is a grid of tiny colored squares called _____. The number of them in a frame, written as width × height, is its _____. The number of frames shown each second is the _____. In a waveform, the height of the wave, which shows how loud the sound is, is its _____. A format such as JPG or MP3 that throws away detail we hardly notice, to make the file smaller, uses _____ compression. Pictures made of shapes and curves described by formulas, which stay sharp at any size, are _____ graphics. In 2D animation, the most important positions of a movement, drawn first, are the _____. An animation with width, height and depth, which can be seen from any angle, is a _____ animation.

2 Label the diagram [2]

The diagram shows one screen of a learning app. Text is labeled for you. Write the component of multimedia in place of 1 to 4. Each carries 0.5 mark.



1. _____ 2. _____

3. _____ 4. _____

3 Multiple choice [5]

Choose the correct option for each of the following questions.

i. What type of graphics is made of Bézier curves and keeps its quality at any size? [1]

a. raster graphics **b.** vector graphics

c. PDF **d.** GIF

ii. In 2D animation, what are keyframes? [1]

a. every frame of the animation

b. the most important positions of a movement, drawn first, with the frames between them filled in later

c. the frames that have sound

d. the frames of a 3D model

iii. On a waveform, a singer's note suddenly shows waves twice as close together, of the same height. What changed? [1]

a. It became twice as loud.

b. Its pitch went up: it vibrates twice as fast.

c. It became quieter.

d. Nothing: the width of a wave means nothing.

iv. A photo of 800 × 600 pixels is enlarged to fill a big classroom screen. What happens? [1]

a. It becomes sharper, because the screen has more pixels.

b. Nothing: photos are vector graphics.

c. It looks blocky or blurred, because each pixel is simply made bigger.

d. It becomes a GIF.

v. You want to store a recording of your own voice on a computer, keeping it exactly as recorded, to edit later. Which format should you use? [1]

a. SVG **b.** WAV

c. GIF **d.** MOV

4 Match the columns [2]

Match each file format with what it is best used for. One use in the right column is not needed.

Column A		Column B
1. TXT	☐	**a.** sharing a song in a small file
2. SVG	☐	**b.** sharing a video on a phone
3. MP3	☐	**c.** plain text only, with no fonts or styles
4. MP4	☐	**d.** a document whose pages look the same on every device
		e. a logo that must stay sharp at any size

5 True or false [3]

Write True or False after each sentence.

i. A raster picture becomes blocky when it is enlarged a lot. ☐

ii. A WAV file of a song is usually smaller than an MP3 of the same song. ☐

iii. An RTF file can store bold and italic text, but a TXT file can't. ☐

iv. A video at 8 frames per second looks smoother than one at 30 frames per second. ☐

v. PNG can store a picture with a transparent background, but JPG can't. ☐

vi. A 2D animation can be turned round to be seen from behind. ☐

6 Short answers [6]

Write short answers to the following questions.

a. Write any two differences between raster and vector graphics. [2]

b. How does a DOCX file differ from a TXT file? Write any two differences. [2]

c. Suggest a suitable image format for a company's logo with a transparent background, and give the reason. [2]

7 Numerical problem [3]

Solve the following problem. Show your working.

A student records a 2-minute talk in mono (one channel) as a WAV file, at 44,100 samples a second and 2 bytes a sample.

i. How big is the WAV file, in bytes and in MB?

ii. The talk is then saved as an MP3 at 64 kilobits a second (64,000 bits each second). How big is the MP3, in KB?

Answer: _____

8 Long answer [4]

Write a long answer to the following question.

If you had to create a greeting card, which multimedia components would you use, and why?

9 Think [2]

Think, then answer.

One frame of FHD video is 1920 × 1080 pixels, and each pixel needs 3 bytes. A home connection carries 10 Mbps. Show why a video site can't send FHD video at 30 frames a second without compressing it.

10 Activity: SD, HD and FHD (not marked)

On a computer, open a video on a video site and choose 480p, 720p and 1080p from the settings button (⚙) under **Quality**. (Or use the drawing **SD, HD, FHD and 4K** on the unit's page, the QR code.) Fill in the table.

Resolution	Size (W × H)	Pixels in one frame	How clear is small writing?
SD (480p)	720 × 480		
HD (720p)	1280 × 720		
FHD (1080p)	1920 × 1080		