1. **Why may you use images in multimedia presentations?**

* The image is a piece of text that is being displayed in a graphical format. So when users see an image, they can understand right away the meaning of the image and what is it about.

1. **What are the two types of images?**

* Raster/Bitmap Image and Vector Image.

1. **Briefly discuss the (1) advantages and (2) disadvantages of the above two types of images.**

* **Raster/Bitmap Image:** Use colours pixel to draw up the image
  + **Advantage**: lightweight, users with slow internet connection can still view it.
  + **Disadvantage**: it has a fixed resolution when you try to resize or zoom in/out the image might not be visible.
* **Vector Image:** Use the line to draw up the image.
  + **Advantage**: images will be visible with lots of details since it is drawn using mathematical formulas with geometric primitives like lines and curves…
  + **Disadvantage**: Image size could be very big, and sometimes it could take a few seconds to load up the image.

1. **Using examples to explain the areas to apply those two types of images.**

* Raster/Bitmap: use for an image that requires lots of colours in the image as it can display gradient better
* Vector: use for line arts, illustration…

1. **Research for authoring/editing tools/software for each of these two types of images. Provide software name, description, and usage/advantages/disadvantages.**

* Raster/Bitmap: MS Paint and Photoshop.
* Vector: Adobe Illustrator and Corel Draw.

1. **What is the concept of “bit depth” for images?**

* It is the colour information that is stored in the image, the more bit depth is in the image, and the more colour that the image can be viewed, For example, 1-bit images can view 2 colours black and white but at 8 bit it can be stored up to 256 and so on.

1. **Explain the following three terms:**

* **Modelling**: using a 2D model/object to create a 3D model/object.
* **Extruding**: add additional depth size to convert it from a 2D object to a 3D object.
* **Lathing**: converting from the 3D model back to the 2D model.

1. **What are panoramic images?**

* A large horizontal image that covers from 180 degrees up to 360 degrees depends on where you standing. It used a special technique that continuously taking an image and overlaps it to create a long-large horizontal image.

1. **What is dithering?**

* Use computer technology to add noise (for media) and additional pixel (for image) to enhance digital files. It adds a random pattern of pixel to improve the overall image quality.

1. **List at least four different image file formats. Discuss the scenarios to use each of them.**

* **PNG**: An advantage is the image will stay in low resolution no matter how much you edit and enhance. This is common use if the user wants to put the image on top of another image because of its transparent background advantage.
* **JPEG**: normal image use to take photo and picture, known as Raster Image, however, for this one, the bigger the size is, the more visible the image when zooming in. Usually, use for Web image or MS Office documents. The better the size, the better the details.
* **TIFF**: image which can be processed up to 24 bit (16+ millions of colour) or 48 bit (42+ millions of colour). This is one of the strongest image types for Raster as the more bit it has, the better the quality is. It is not recommended to use for Web display but however can strongly recommend using for printing photographs.
* **GIF**: works at a short video in image form (around 2-3 seconds). However, since GIF can only store 256 colours in RGB, its file size is dramatically low. This can be easily seen in any social media or on a web blog.

1. **Discuss what are lossless and lossy compression, and the advantages and disadvantages respectively. Give examples for each.**

* **Lossless:** Compressed data to reduce the image size without reducing its quality.
* **Advantage:** Can have a copy of the original file with a reduced size.
* **Disadvantage:** Limited in application use since sometimes the copied image might not work well.
* **Loss:** Compress the image by reducing the data in the image.
* **Advantage:** Can have a very low file size image.
* **Disadvantage:** Sacrifices quality and resolution in trade for small size.

1. **Provide at least ten (10) guidelines for using images online regarding web usability.**

* Pick an image type of very important, use the type that does not produce a too low-quality image or too much quality in the image.
* Use the Raster/Bitmap image if the user only needs to glance at the image once or twice.
* Use a Vector image if that image will take users sometimes to see and understand its detail.
* Provide subtitles for every image in case the image is unable to load.
* Depends on the context, you can pick a heavy size image or a low size image for quality.
* Choose image colour wisely, ensure that colour blind people don’t have a hard time to see.
* Use the image to represent a large piece of text, because the image gets users to understand information better.
* Don’t put too many images in one site, or too many images close together.
* Be concise about image width, height, try to resize it so it can look good.
* Never use an image that has too vague meaning.