Answer 2:

1. The strange appearance is due to distortion which is captured from a fast-moving object. When the image is captured, not all parts of the image starts and stops receiving light data at the same instant. As the scanner moves from one side to the other, it is recording the spinning propeller in a different location during each point of the scan. The factor affecting the performance here is the shutter speed.
2. The distortion was caused by a rolling shutter. That means she was using a camera with a CMOS sensor. Cameras with CCD sensor uses a global shutter which captures an entire scene at once and could have avoided this issue.
3. Light comes from the object and forms an image on our retina. The retinal ganglion cells transmit information to the brain. But if the object is moving at a faster speed that is more than the observer’s eye retina can track, the brain can not process the information fast enough and a blur is seen. This effect is known as motion blur.

Answer 3:

1. Gaussian filters and filter2D are linear filters and medianBlur is a non-linear filter. A linear filter is one that can be done with a convolution and a non-linear filter is one that cannot be done with convolution. The output would be different.
2. medianBlur filter is non-linear and convolution is not possible. Thus, different ordering will have different outputs.
3. The filters used are only linear filters. Thus, using them in any order would give the same output.