1. What is a digital image?

- Digital Image is a numeric representation of two-dimensional image, which are combination of picture elements called pixels. Pixels are organized in an ordered rectangular array, where Image width is actually number of pixel in a row and height is number of pixels in a column. And every pixel consists color value.

2. What does the paradigm “bottom-up processing” mean?

3. State at least three fundamentally different image sources!

Optical Image source is a reproduction of an object, which is formed by lens or mirror system from reflected, refracted or diffracted light wave.

X-Ray image source: In this system, high frequency electromagnetic waves which can pass through the soft part of the human body use to be projected on a plate and image created by the passing resulting radiation through the body.

Synthetic Aperture Radar (SAR): SAR is a radar system that is used to create two or three dimensional image of an object such as an area or landscape. Typically SAR is used by moving platform. In this technology successive pulses of radio waves are transmitted and echo of each pulse is received and recorded. And new image is created according to this recorded data.