

Q1. Explain Raspberry Pi camera module.

⇒ - The raspberry Pi camera module is a versatile and affordable camera that can be attached to a raspberry Pi to capture photos and videos.

- It is able to deliver a crystal clear 5MP resolution image or 1080p HD video at the recording speed of 30 Fps.

- This module is attached to Raspberry Pi, by way of a 15 Pin Ribbon cable, to the dedicated 15-pin MIPI Camera Serial Interface (CSI), which was designed especially for interfacing to cameras.

- The board itself is tiny, at around 25mm x 20mm x 9mm and weighs just over 3g, making it perfect for application where size and weight are important.

- The camera module includes an Image Signal Processor (ISP) that processes raw image data into a format that can be used by the Raspberry Pi.

- This module can be useful in Home security and other educational applications.

Q2. Write the steps you have carried out while performing this assignment.

⇒ - step 1: setup of Raspberry Pi model 3B.

- step 2:- Attached camera module to the Raspberry Pi using camera connector or CSI connector.

- step 3 :- Go to preferences and then Raspberry Pi configurations.
- step 4 :- In interfaces, enabled the camera option and reboot the system.
- step 5 :- Used python script such as Picamera2 library to capture and process images.
 - For image ;
`rpicam-still -o image.jpg.`
 - For video ;
`libcamera-vid --codec h264 -t 10000 -o vid.h264`
- step 6 :- The captured images are saved in respective folder.