**LAB:03 CA   
STD\_ID:10187**

Q:02  
LCD display is use to display data from micro-controller. We can send the string of character to LCD in two mode (4 bit and 8 bit mode).In 8 bit mode you send a byte in one 8 bit transfer.In 4 bit mode you send a byte in two 4 bit transfer. The byte is split into two 4 bit nibbles and they are sent separately to the LCD which combines them together again.

Q:03

The 16×2 LCD display is a very basic module commonly used in DIYs and circuits. The 16×2 translates o a display 16 characters per line in 2 such lines.The VCC pin is used to supply the power to the LCD while pin 16 is connected to Ground and it is used for the pin 15 to set up the glow of backlight of the LCD.  
Q:04

4-bit mode uses 4 I/O port pins for data and two or three additional I/O pins for control.

it requires two 4-bit transfers for each instruction and character that is sent to the display.The implication is that, 4-bit data transfers will take twice as much time to transfer as 8-bit data transfers,4-bit data transfers use 4 I/O lines less then 8-bit data fransfers.