CIRCUIT DESIGN 25 MARKS

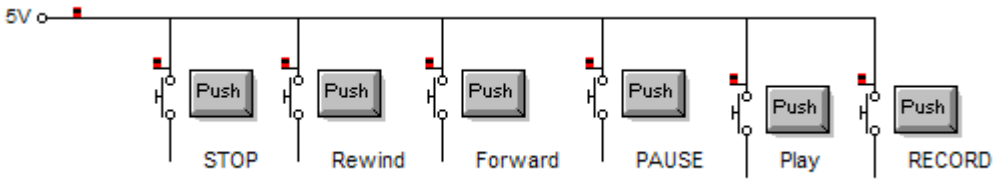
DESIGN A LOGIC CIRCUIT AND SIMULATE ITS OPERATION ON THE COMPUTER USING CROCODILE PHYSICS.

A typical VCR has six momentary contact push buttons on the front panel. Design the internal logic so that pushing each button produces the effect shown on the table. Use Crocodile Physics to demonstrate the operation of your circuit. Label all the buttons and lights. When you have completed your circuit, save it on the C:\ drive, then copy it to your G:\ drive or a USB key.

Button	Basic Operation	Mark	Advanced Operation	Mark
Play	• Turns on a green light labeled Play. • Continues to play until stop is pushed	/5	• Counter counts up at slow speed. • Count is shown on two-digit 7-segment display	/3
Fast Forward	• Turns on a flashing yellow light labeled FF. • Turns off when Stop or Play or Pause is pressed	/5	• Counter counts up at double speed • Count is shown on two-digit 7-segment display	/3
Pause	• Has no effect unless tape is moving. • Turns on a flashing red light labeled Pause. • Turns off FF.	/5	• Stops counter	/1
Stop Eject	• Stops all operations • If all operations are stopped, turns on yellow light labeled "eject"	/5	• When tape is ejected, counter is reset to 00.	/1
Record	• Has no effect until Play is pressed. • Turns on red light when both Play and Record are pressed.	/5		
		/25		/8

Additional Instructions

Use momentary contact push buttons for the controls, as shown below.



For the indicating lights, use LEDs of the appropriate colour for each function. The LEDs must have a resistor in series, or they will blow up. The cathodes must be connected to ground, as shown in the drawing below.