



Set - A

Registration No.: .....

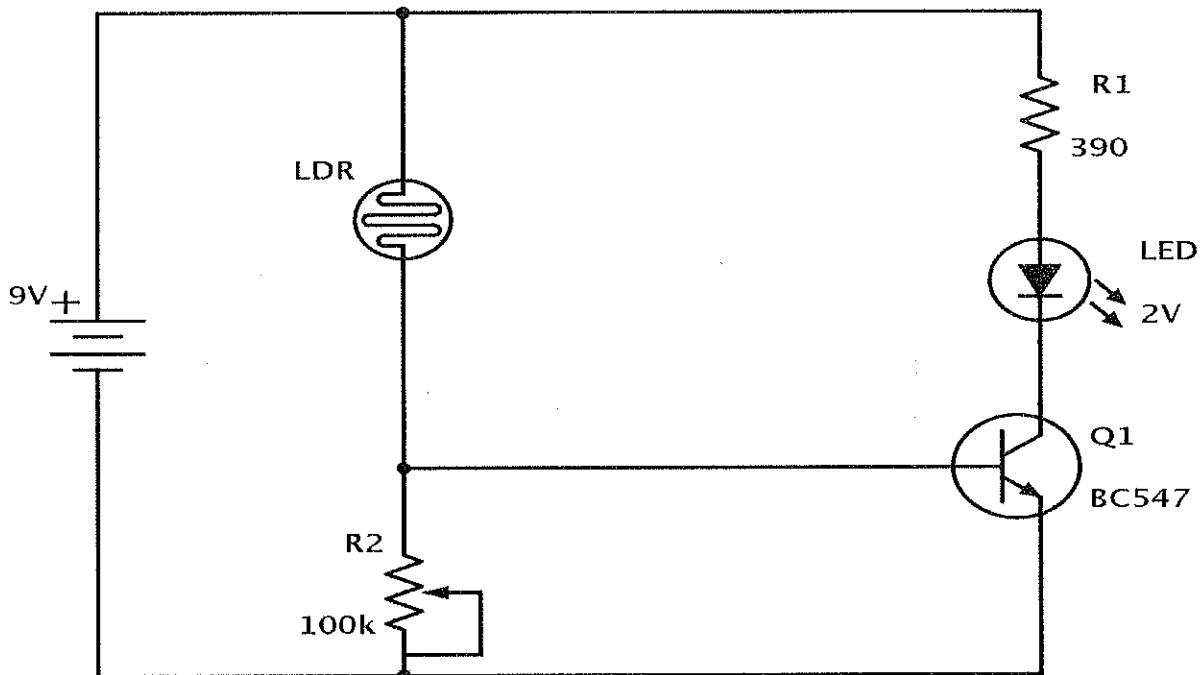
# BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Computing Skills  
Session: 2021-22 (Winter Semester)  
B. Voc. Program, I/III/V Semester  
End-Sem. Examination

Course Code: ITN1111  
Course Name: PCB Designing and Manufacturing

Time: 2 Hours  
Max. Marks: 40

1. What is the difference between active and passive components? 2 Marks
2. What are the classification of capacitors? Write just names. 1 Mark
3. What is the difference between transistor and MOSFET? 2 Marks
4. Design the full PCB layout of below given circuit. 15 Marks



### Note for designing marks distribution

1	Schematic design	2 Marks
2	Component value assignment	2 Marks
3	Electric rules check and correction	1 Marks
4	Netlist generation	1 Marks
5	Footprint assignment	3 Marks
6	PCB layout design	4 Marks
7	Gerber file generation	2 Marks
<b>Total Marks</b>		<b>15 Marks</b>

5. Fabricate the above designed circuit's PCB through the Chemical Process.

20 marks





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School of Computing Skills  
Session: 2022-23 (Winter Semester)  
B. Voc. Program  
End-Sem. Examination

Course Code: ITN1113  
Course Name: Robotics OE

Time: 2 Hour  
Max. Marks: 40

SET - A

- Q1. Implement a program using ABB Robot to Pick a block from Table 1 and Place it on Table 2. (20)
- Q2. Define Robot. (5)
- Q3. What is Controller? (5)
- Q4. What is an Arm? (5)
- Q5. What is a Sensor? (5)





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**Ans. 1. Practical Question**

**Ans. 2. A robot is a reprogrammable, multifunctional machine designed to manipulate materials, parts, tools, or specialized devices, through variable programmed motions for the performance of a variety of tasks.**

**Ans. 3. Every robot is connected to a computer controller, which regulates the components of the arm and keeps them working together. The controller also allows the robot to be networked to other systems, so that it may work together with other machines, processes, or robots. Almost all robots are pre-programmed using teaching devices or offline software programs. In the future, controllers with artificial intelligence (AI) could allow robots to think on their own, even program themselves. This could make robots more self-reliant and independent.**

**Ans. 4. The arm is the part of the robot that positions the end-effector and sensors to do their pre-programmed business. Many are built to resemble human arms, and have shoulders, elbows, wrists, even fingers. Each joint is said to give the robot 1 degree of freedom. A simple robot arm with 3 degrees of freedom could move in 3 ways: up and down, left and right, forward and backward. Most working robots today have 6 degrees of freedom to allow them to reach any possible point in space within its work envelope.**



**Ans. 5. The sensor sends information, in the form of electronic signals back to the controller. Sensors also give the robot controller information about its surroundings and lets it know the exact position of the arm, or the state of the world around it. One of the more exciting areas of sensor development is occurring in the field of computer vision and object recognition.**

