

# **“Pick n Place”**

**Ever imagined the working of a crane ???**

**Or ever thought to build giant mechanical hand of your own ???**

**Is the mechanical hand under your control, the same way you handle yours ???**

If you have the capability to make actions and not mess up, then Pick n Place is there for you to jot down all the mechanics and robotics you know on the paper and develop a bot. Your bot is expected to lift and properly place the items, provided by us scoring the maximum points.

## **Event Format and Schedule :**

This is a team event. The event will be organised on 1th April ,2017.

Venue & kick-off Time : Admin Bulding , 10 AM onwards.

## **What to do ?**

- construct a manual bot which can be used to pick up balls and place it in a box.
- Score maximum points in minimum time to win the game. Simple right ?

## **Bot and arena specifications :**

- The length of the bot must not exceed 30 cm.
- The two rail are 20 cm apart.
- Length of rail is 3 meter.
- Underneath which balls will be placed on the stands of different height ranging from 20 cm to 80 cm either side of the core stand (20cm).
- The core stand will be of 20cm height, either side of which 3 more stands will be placed with balls on top of them. The other stands will be arranged in increasing height fashion of 40cm,60cm & 80 cm.
- Core ball : red (1) 20cm , Pink ball (2) 40cm, yellow ball (2) 60 cm, green ball (2) 80 cm.
- Each ball is of diameter 4 cm which is to be on stands described above. Box's dimensions is (8×8×10) cm.
- The manual bot must be a remote controlled bot (wired or wireless).
- An A.C. power supply of 220 Volt will be provided, the input voltage to bot should not exceed 24 Volt.
- Per team Only one manual bot is allowed.

## **Gameplay:**

- Each team can consist of maximum 4 members.
- The game will start by placing the manual robot on the end terminal of rail (opposite to box).
- The robot has to pick up the ball placed beneath the rail and place it in the box.
- Each team will be allotted 20 minutes to complete the task.
- In case of fault or malfunctioning of bot only 20 extra minutes will be provided.
- The participant will not be allowed to touch the Bot or anything by their hands after the game starts.
- If you are willing to do that, half of marks of corresponding ball will be deducted.
- Only 3 maximum attempts of hand touching and adjusting the bot will be allowed during gameplay.
- Organising Authority deserves the full rights to make any changes in rules if needed. And Plagiarism shall lead to immediate disqualification.

## **Points Distribution:**

- ✓ Red Ball will contain 40 points.
- ✓ Two pink balls will contain 30 points each.
- ✓ Two yellow balls will contain 20 points each.
- ✓ Two green balls will contain 10 points each.
- ✓ Points will be given only after successfully placing the ball in the box.
- ✓ While picking up a ball if it falls down and is within the arena then a team can again attempt for that particular ball by placing it again on the stand but the points will be reduced to half.
- ✓ Maximum 2 more attempts will be given for re-attempt.

**NOTE:** In any condition the organisers' decision will be final without any arguments.

## **References :**

1. Relay Switch Working:

<http://www.engineersgarage.com/insight/how-relay-switch-works>

2. Hydraulic Arms:

<http://www.instructables.com/id/Hydraulic-robot-made-of-cardboard-and-scotch-duct/>

3. Working Of Motor: <http://www.robotoid.com/howto/choosing-a-motor-type.html>

<http://www.robotoid.com/howto/understanding-motor-specifications.html>

4. Video Links:

<https://www.youtube.com/watch?v=fyn028yuNJM>

[https://www.youtube.com/watch?v=wTM6Zik\\_tww](https://www.youtube.com/watch?v=wTM6Zik_tww)

To Register for the Event please visit

**Prizes:**

**Winner - Rs.2500**

**Runner's Up - Rs.1000**

**Contact Info.**

**1. AKSHAY KUMAR**

akshaynitnagaland@gmail.com

+91 9470685793

**2. VIVEK KUMAR**

viv.kr96@gmail.com

+91 9089794867