



# MISSION POSSIBLE C – 2019

Rank: \_\_\_\_\_

Final Score: \_\_\_\_\_

Team Number: C \_\_\_\_\_ Team Name: \_\_\_\_\_

Student Names: \_\_\_\_\_

## Check-In / Setup

- 6.e. Was the device impounded before the deadline (leave this blank for Regional Tournament)? 1. Y N
- 2.a. & 5.j. Is the team able to compete? (e.g. participants wearing eye protection, no unsafe devices and device not remotely timed/controlled,) 2. Y N
- 5.h. Dimensions of the device in cm to the nearest 0.1 cm: 3. Height: \_\_\_\_\_ 4. Width: \_\_\_\_\_ 5. Depth: \_\_\_\_\_
- 6.b.ii. Are the top and at least 2 vertical walls open or transparent? 6. Y N
- 5.b.i. Were the ASLs submitted on time at device impound? 7. Y N
- 5.b.ii. Did the ASLs use the format specified on www.soinc.org? 8. Y N
- 5.b.iii. Were the ASLs 100% accurate of intended scorable and non-scorable actions? 9. Y N
- 5.b.iv. Were the scorable & non-scorable actions within the device labeled as in the ASLs? 10. Y N
- 5.c.i. Did the participants use  $\leq 30$  minutes to set up their device? 11. Y N

## Scoring:

- 5.d. Was the Start Action completed? 12. Y N
- 4.b.i. Was vinegar and baking soda used to inflate a balloon so that the unguided balloon strikes an object that originally was at least 20 cm away from the balloon causing the object to initiate the next action? 13. Y N
- 4.b.ii. Was an endothermic action used to initiate the next action as a result of the reduction in temperature? 14. Y N
- 4.b.iii. Were 2 effervescent heartburn relief tablets dropped into water so the reaction triggers the next action? 15. Y N
- 4.b.iv. Was water added to a container to raise a golf ball located in the same container at least 5 cm so that the golf ball rolls out of the top of the container and initiates the next action? 16. Y N
- 4.b.v. Was an infrared beam used where the transmitter & receiver are  $\geq 20$  cm apart to initiate the next action? 17. Y N
- 4.b.vi. Did an object push or pull a mass  $\geq 500$  g at least 10 vertical cm up an inclined plane with an IMA  $\geq 2$  before the object initiates the next action? 18. Y N
- 4.b.vii. Was a pulley system with an IMA  $\geq 3$  used to lift an object with a mass  $\geq 500$  g at least 10 vertical cm before the object initiates the next action? 19. Y N
- 4.b.viii. Was the mechanical advantage of all 3 classes of levers in sequence used to initiate the next action? 20. Y N
- 4.b.ix. Was gravity used to clearly rotate a screw  $\geq 2$  full rotations so that it operates as a screw converting rotational force into linear force and move an object  $\geq 2$  cm before that object initiates the next action. The screw is marked so its rotational movement is clearly visible. 21. Y N
- 4.b.x. Was an unmodified US quarter launched out of the top boundary of the device so that it falls back into the device and initiates the next action? The quarter is heads up when the device is in the ready to run position, and is tails up after the quarter is launched out of the device, lands back in, and initiates the next action. 22. Y N
- 4.b.xi. Was electricity used break a string or fishing line so that the breaking of the line initiates the next action? 23. Y N
- 4.b.xii. Was a magnet removed from a surface so that a magnetic object falls due to the removal of the magnetic force and the object initiates the next action? 24. Y N
- 5.e. Was the Final Action completed? 25. Y N
- If so, was the battery freestanding and untouched at the end of the run? 26. Y N
- 4.e. What is the Target Operation Time? (Regionals/Invitational: 60 sec; State: 61-90 s; National: 91-120 s) 27. \_\_\_\_\_
- 5.f. What is the Operation Time in sec rounded down to the closest second? 28. \_\_\_\_\_
- 5.g. How many seconds did the non-electrical / non-spring timer, if any, run before the Target Operation Time? 29. \_\_\_\_\_
- 6.c. Did all solid and liquid stay inside the measured dimensions of the device (excluding 4.b.x & Final Action)? 30. Y N
- 6.d.i. How many electrical and/or spring timing actions are in the device that takes longer than 10.0 seconds (except raising the Final Action platform)? 31. \_\_\_\_\_
- 6.d.ii. How many actions used electricity where it is not allowed? (Allowed in 4.b.ii., 4.b.v., 4.b.xi. & Final Action) 32. \_\_\_\_\_
- 6.e. The number of times the device is touched or adjusted during the operation time. 33. \_\_\_\_\_