

# IME 408 Industrial Robotics -- Edwards

## Test II

September 10, 2020

Answer the Following Questions to the Best of Your Ability – GOOD LUCK!!

### **SAFETY FIRST -- AGAIN!!!!**

- 1) If there were an incident in the Robotics Lab which required Emergency attention, what telephone number should you call if you were to use your cell phone?

b) Why THIS number??

- 2) If you need to go into a robotic work cell, Turning the Teach Pendant “On” and taking it into a robotic work cell is a layer of safety.

True

False

Why??

3) What are Denavit-Hartenberg (D-H) Parameters??

4) A 25% Improvement in Cycle Time yields what Level of Improvement in JPH?

- A) The Same -- 25%
- B) Between 20% and 25%
- C) Between 25% and 30%
- D) 33%
- E) All The Above

**IN LAB;**

5) *In Lab*, There is an E-stop on the Teach Pendant and the Control Panel.

True

False

6) On the teach pendent, what button clears a fault?

- A) Clear
- B) Reset
- C) Shift
- D) +J1
- E) All The Above

7) On the teach pendent, what button do we hold while pressing a +J2 to move the robot?

- A) Clear
- B) Reset
- C) Shift
- D) +J1
- E) None of the Above

8) What is the difference between accurate and precise??

b) Which are robots noted for?

9) Which robotic system would be more flexible and cost effective?

Prismatic

Articulating

10) If you have a large working environment and easy access to work within it, and heavy cranks shafts to move from a forging press across an aisle to a machining operation; which Robotic System might you wish to use?

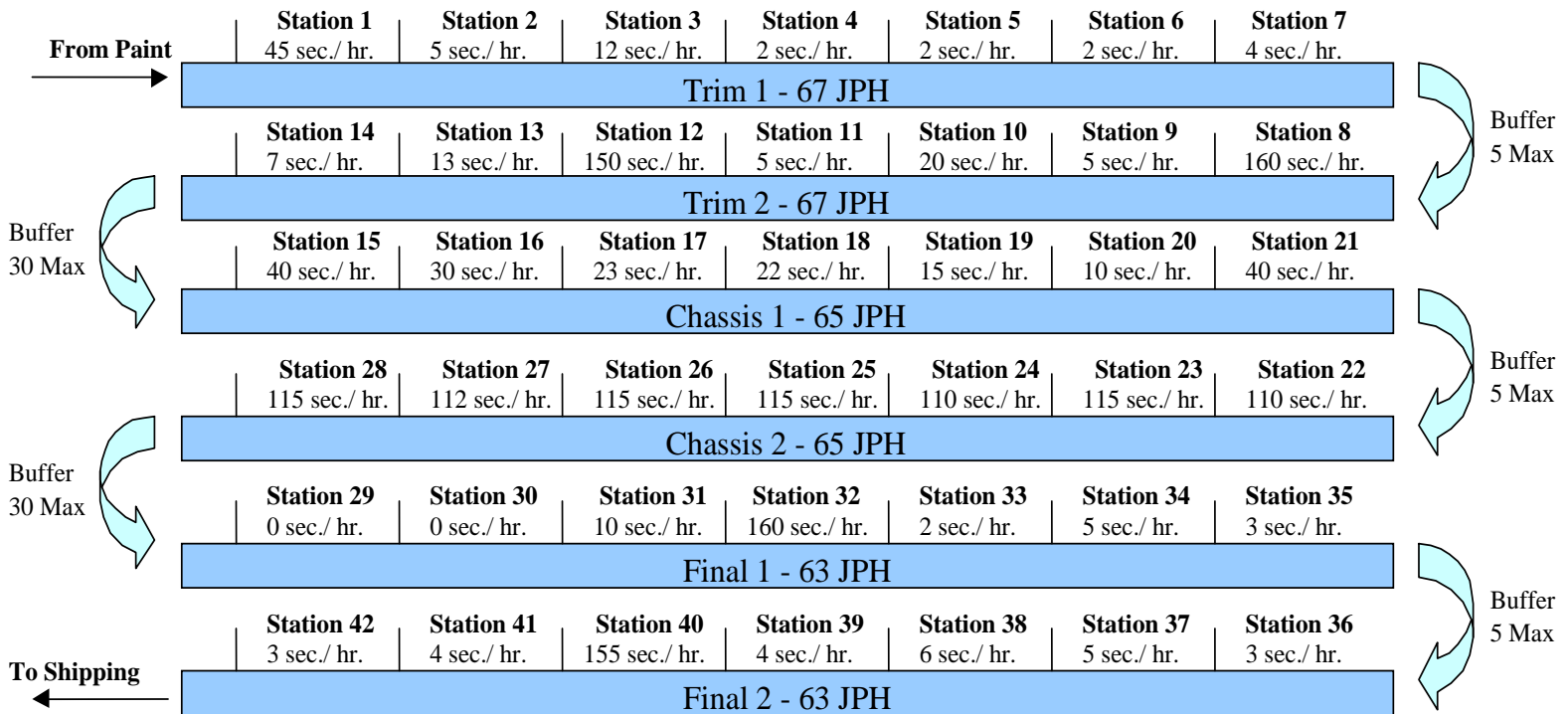
11) Ideally, a Body Shop wants to operate in \_\_\_\_\_ mode

Batch

One Piece Flow

12) If the Body Shop were asked to move production from 60 to 120 Jobs per Hours, What would be the necessary improvement (%) in the Cycle Time in order to achieve this goal.

# Honolulu Assembly - TCF Layout



**FOR THE FOLLOWING QUESTIONS – PLEASE REFER TO THE HOLOLULU PROJECT ABOVE!!!**

13) If we automate Trim 1 and improve the SAJPH output by 20%, what percent improvement would we expect to see at the Paypoint?

14) If we automate Chassis 2 and improve the SAJPH output by 20%, what percent improvement would we expect to see at the Paypoint?

15) Where would be the new Bottleneck? Where would it not be??

16) Why would we not see the "Full Benefit" of this potential improvement in Chassis 2?

17) What would be new SAJPH of Chassis 2??

### **Extra Credit**

I) In the Book, "The Goal"

Who was Alex Rogo's Mentor?

II) What are Isaac Asimov's 3 Laws of Robotics?

1)

2)

3)