Exercise 1:

- Consider having two sales order with same due date for a stock part with an order QTY of 400 and 600. How many Job orders will be created by planning?

- For the above scenario, if I have defined lot sizing parameter with max order QTY as 200, how many job orders will be created?

Exercise 2:

Consider the scenarios, If 50 units of a product are required by a customer and a scrap factor of 65% is expected,

- What is the % of Yield?

- What should be the quantity I have to manufacture?

- What QTY is being scrapped here?

Exercise 3:

Consider a manufacturing company which works only for 1 shift of 6 hours with a break of 30 mins per day. Assume all operations are contiguous in nature (next operation can only start after the previous operation is completed) A job order of 100 QTY having a buy part as component with lead time 15 days, there exists 3 routing operations, 1st operation takes 4 hours to complete 100 QTY, 2nd operation takes 6 hours to complete 50 QTY and 3rd operation takes 2 hours to complete 100 QTY.

- What is the total time it takes to complete 50 finished goods considering the operations cannot run in parallel?

- How many days it will take to complete 100 QTY?

- If the 2nd operation is defined with 2 simultaneous operations, what will be my manufacturing lead time to complete 100 finished goods?

- When can the Job order be released to shop floor to start manufacturing?

- What should be my Job order QTY if there is a material yield of 90%?

Exercise 4:

The time now is 11.30 and people on the shop floor are at lunch and operation can be started at 12 and a sub-assemblies of 100 has to be completed. The routings are Fabricating (Operation1) and welding (Operation2). If the Fabricating and welding work center has a capacity of manufacturing 25 units/hr, By what time the manufacturing can be completed assuming the operations cannot run in parallel?

Exercise 4:

Assume my factory runs for 5 days a week and I have a sales order for 1000 QTY for a part having Buy part as component with lead time of 10 days and manufacturing lead time of 20 days to complete 1000 QTY, Having a shipping buffer and purchase buffer of 2 days each and release offset of 1 day. If my order date on the SO is of 6-Aug-2020, if I run the CTP assuming all work centers are required to complete the operations are available,

- What should be the due date given by CTP?
- Suppose for the above scenario, the due date on the SO is 06-Sep-2020, Will I be able to make it on time?
- If yes, when can I complete this order?
- If NO, what can be improved to make it on time? Describe briefly on the improvements you want to make in order to fulfil the demand on time?
- Mention the late reasons and the different constraints?

Exercise 5:

What are work center constraints? Explain with your own examples to make a work center as constraint and mention the different possibilities to eliminate the W/C constraint?

Exercise 6:

I have a make part with the 3 routing operations, 10(welding), 20(cutting) and 30(Packing), the 3rd operation has an operation yield of 70%. I have a Sales order from a customer for this part with 1000 QTY and assume all the BOM components are consumed in operation 10, what should be my operation QTY for operation 10, 20 and 30?

Exercise 7:

I have a make part with 3 BOM components, BOM 1 with unit QTY as 11, BOM 2 with unit QTY as 14 and BOM 3 with unit QTY as 8. I have 2 routings defined for the same which are operation 10(Paint) and operation 20(Pack). Assume I am consuming the BOM 3 at operation 20 which has a production yield of 90%. I need to manufacture 100 QTY of the make part.

- What should be my material QTY of BOM 3?
- What should be operation QTY of Operation 10 and operation 20?