BOWEN UNIVERSITY, IWO

College of Management and Social Sciences
Business Administration Programme
Second Semester 2021/2022 Examination

Level	: 300
Course Title	: Production & Operations Management
Course Code	: BUS 308/IRP 308
Credit	: 3
Instruction	: Answer any Four Questions
Time Allowed	: 2 Hours
Date	: Thursday 14th of July, 2022

1. a. Describe facility location as it differs from facility layout. **(7.5 Marks)**

   b. Discuss five situations that could bring about facility location selection decision. **(10 Marks)**

2. a. Do you agree that production and operations management is a significant determinant of the survival and continuity of any manufacturing business? **(1.5 Marks)**

   b. Explain five justifications for your position in 'a' above. **(16 Marks)**

3. a. What makes replacement of facilities different from maintenance of facilities? **(7.5 Marks)**

   b. Describe five situations that could warrant replacement of operational facilities. **(10 Marks)**

4. a. Dowen Bakery requires a truck for distributing bread to various destinations in southwest Nigeria. Given that the initial cost of the truck is N350,000 with expected maintenance and scrap value as contained in the table that follows, determine when the truck should be replaced. **(16 Marks)**

Year	1	2	3	4	5	6	7
Expected Cost of Maintenance (₦)	20000	23700	27000	34300	41200	55900	71000
Expected Scrap Value (₦)	150200	139000	106000	90400	74600	63000	49900

   b. State the applicable average annual replacement cost. **(1.5 Marks)**

5. a. Given the information in the following table about a firm's operational tasks, determine the firm's optimum job sequence and completion time.

Job	1	2	3	4	5	6	7	8
Machine 1 Time (Hours)	9	7	12	14	11	5	15	16
Machine 2 Time (Hours)	6	10	8	14	16	5	13	4

(5.5 Marks)

b. Compute the optimum completion time for the tasks.

(12 Marks)

6. a. Explain each of the following with respect to maintenance of production facilities and state how to compute their values.

i. Mean time between failures

(3.5 Marks)

ii. Mean time to failure

(3.5 Marks)

iii. Mean time to resolve failures

(3.5 Marks)

b. Determine the mean time to failure of 50 identical rollers, with estimated annum operation time of 8,784 hours

(7 Marks)