UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER I
SESSION 2015/2016

COURSE NAME	:	INDUSTRIAL MANAGEMENT
COURSE CODE	:	BPC 23303
PROGRAMME	:	2 BPB
EXAMINATION DATE	:	DECEMBER 2015/JANUARY 2016
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

Q1   (a)   Describe **TWO (2)** importance of scheduling to a company .

(3 marks)

(b)   Differentiate **FIVE (5)** priority sequencing rules.

(10 marks)

(c)   The following set of seven jobs is to be processed through two work centers at Ultimate Printing Company. The sequence is first printing, then binding. Processing time at each of the work centers is shown in the following table:

Table Q2 (c): Processing Time

Job	Printing	Binding
T	15	3
U	7	9
V	4	10
W	7	6
X	10	9
Y	4	5
Z	7	8

(i)   Analyze the optimal sequence for these jobs using Johnson Rules.

(3 marks)

V	Y	Z	U	X	W	T

(ii)   Chart these jobs through the two work centers.

(3 marks)

(iii)   Calculate the total length of time of this optimal solution.

(3 marks)

(iv)   Determine the idle time in the binding shop, given the optimal solution.

(3 marks)

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Q2   (a)   Explain the following:

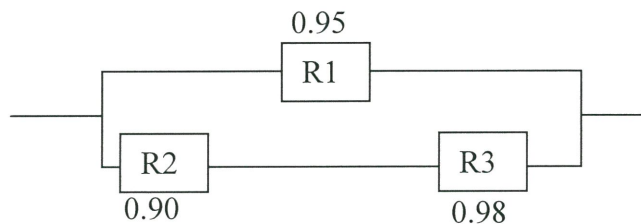(i)   Maintenance

(2 marks)

(ii)   Reliability

(2 marks)

(b)   Discuss **TWO (2)** types of maintenance.

(6 Marks)

(c)   Analyze the reliability of the following production process.

(10 marks)

(d)   Discuss the concept of redundancy to improve product reliability.

(5 marks)

Q3   The QQ Trash Company stocks a container. Each of the containers occupies four square feet of warehouse space. The warehouse space currently available for storing the product is limited to 600 square feet. Demand for the product is 15,000 units per year. Holding costs are RM4 per container per year. Ordering costs are RM5 per order.

(a)   Calculate the current total inventory-related cost of managing the inventory of the container.

(6 marks)

(b)   Calculate the cost-minimizing order quantity decision for the company.

(5 marks)

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(c)   Analyze the total inventory-related cost based on the decision in **Q2(b).**

(6 marks)

(d)   Propose to the top management the inventory plan that could save the cost based on the answer in **Q2(a)** and **Q2(c)** to

(8 marks)

Q4   Machines A, B, C, and D have been in use for several years. Meanwhile E is a brand new machine. **Table Q3** provides data on the value of production of each job when performed on a specific machine.

Table Q3

Job	Machine				
	A	**B**	**C**	**D**	**E**
1	27	29	28	30	40
2	30	32	31	34	46
3	33	25	29	26	37
4	29	31	24	28	28

(a)   Prepare the set of assignments that maximizes production value.

(12 marks)

(b)   Calculate the total production value of the assignments.

(5 marks)

(c)   Analyze the assignment on each machine to consider the machine that should be disposed.

(8 marks)

- END OF QUESTION -

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