UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2016/2017

COURSE NAME	:	PRODUCTION PLANNING AND CONTROL
COURSE CODE	:	BPC 22103
PROGRAMME CODE	:	BPB / BPP
EXAMINATION DATE	:	JUNE 2017
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

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THIS QUESTION PAPER CONSISTS OF **FIVE (5)** PAGES

Q1 (a) Describe the followings:

(i) Capacity planning

(2 marks)

(ii) Capacity management

(2 marks)

(b) Describe **THREE (3)** steps of capacity planning

(6 marks)

(c) A work center has the following routing file, open orders file and material requirements planning (MRP) planned orders as shown in **Table Q1(c)(i).**

**Table Q1(c)(i): Routing File,
Open Orders File and MRP Planned Orders**

Routing File		
Part ABC	Setup time	2 standard hours
	Run Time per piece	3 standard hours per piece
Part XYZ	Setup time	3 standard hours
	Run Time per piece	1 standard hours perpiece

	Open Orders File			MRP Planned Orders		
Week	1	2	3	1	2	3
ABC	12	8	5	0	5	10
XYZ	15	5	5	0	10	15

Prepare the complete load report as shown in **Table Q1(c)(ii)**

Table Q1(c)(ii): Load Report

Load Report	Part	Week		
		1	2	3
Released Load	ABC			
	XYZ			
Planned Load	ABC			
	XYZ			
Total Load				

(15 marks)

Q2   (a)   An order for 100 of a product is processed on work centers A and B. The setup time on A is 20 minutes and run time is 10 minutes per piece. The setup time on B is 40 minutes and the run time is 5 minutes per piece. Wait time between the two operations is 3 hours. The move time between A and B is 10 minutes. Wait time after operation B is 3 hours and the move time into stores is 15 minutes. There is no queue at either workstation.

Compute the total manufacturing lead time for the order.

(7 marks)

(b)   A company has an order of 50 units for brand Z to be delivered on day 100. Only one machine is assigned to each operation. The factory works one 8-hours shift 5 days a week. The parts move in one lot of 50.
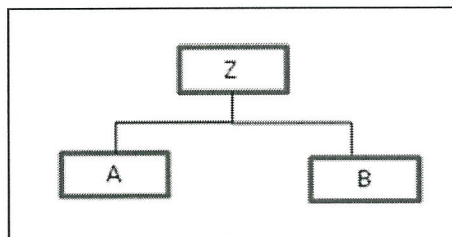

Figure Q2(b): Parts Structure for Brand Z

Table Q2(b): Operation File

Part	Operation	Time (days)
A	10	5
A	20	3
B	10	10
Z	Assembly	5

Illustrate the backward schedule based on information as shown in **Figure Q2(b)** and **Table Q2(b).**

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(10 marks)

(c)   (i)   Determine **FIVE (5)** elements of manufacturing lead time.

(5 marks)

(ii)   List **THREE (3)** major responsibilities of production activity control.

(3 marks)

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Q3   (a)   SAM Sdn. Bhd. monitors the flow of work coming to the work center and the performance of work center by using this input/output report. **Table Q3(a)** shows the input/output data at the end of week 5. Previous planned and actual backlog is 42.

Table Q3(a): Input/output data

Period	Week				
	1	2	3	4	5
Planned Input	48	42	46	50	54
Actual Input	44	42	42	52	50
Planned Output	50	50	50	50	50
Actual Output	42	46	54	54	46

(i)   Prepare a complete input/output report for SAM Sdn. Bhd.

(9 marks)

(i)   Calculate the planned backlog

(5 marks)

(ii)   Calculate the actual backlog

(5 marks)

(b)   Company XYZ has received three orders to provide parts. The due day and lead time remaining shown in **Table Q3(b)**. Today is day 75.

Table Q3(b): Company XYZ's Order

Order	Due Day	Lead time Remaining (days)
A	87	12
B	95	26
C	100	21

Calculate:

(i)   The actual lead time remaining in days

(3 marks)

(ii)   The critical ratio

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(3 marks)

Q4   (a)   Discuss **FIVE (5)** objectives of purchasing.

(10 marks)

(b)   Describe **SEVEN (7)** steps for purchasing cycle.

(7 marks)

(c)   Determine **FOUR (4)** important factors in selecting a supplier.

(8 marks)

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- END OF QUESTIONS –