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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2013/2014**

COURSE NAME : PRODUCTION PLANNING AND CONTROL
COURSE CODE : BPC 22103
PROGRAMME : 2 BPB
EXAMINATION DATE : JUNE 2014
DURATION : 2 HOURS 30 MINUTES
INSTRUCTION : ANSWER **ALL** QUESTIONS

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

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- Q1** (a) Discuss the process of Capacity Planning in an organization. (3 marks)
- (b) Define Capacity Available. (3 marks)
- (c) Explain **THREE (3)** factors that may affect capacity available. (6 marks)
- (d) Below are the information from route file, open order file and Material Requirement Planning (MRP) planned orders.

Routing: Part 1191CB: Setup time = 2 standard hours
 Run time per piece = 3 standard hours per piece

Part 2211DS: Setup time = 3 standard hours
 Run time per piece = 1 standard hours per piece

Additional information:

The work center consists of 2 machines, which is operated 8 hours a day for a 5-day week.

Workcenter: utilization = 75%
 efficiency = 110%

Open orders for parts

Week	1	2	3
1191CB	12	8	5
2211DS	15	5	5

Planned orders for parts

1	2	3
0	5	10
0	10	15

- (i) Calculate the load on the work center. (6 marks)
- (ii) Calculate the rated weekly capacity in standard hours. (3 marks)
- (iii) Explain possible courses of action based on the situation given in **Q1(d)(i)** and **Q1(d)(ii)**. (4 marks)

- Q2** (a) An order for 100 of a product is processed on operation A and operation B. The setup time on A is 50 minutes, and the run time per piece is 9 minutes. The set up time on B is 30 minutes, and the run time is 6 minutes per piece. It takes 20 minutes to move a lot between A and B. Since this is a rush order, it is given top priority and is run as soon as it arrives at either workstation.

It is decided to overlap the two operations and to split the lot of 100 into two lots of 60 (Q₁) and 40(Q₂). When the first lot is finished on operation A, it is moved to operation B where it is set up and run. Meanwhile, operation A completes the balance of the 100 units (40) and sends the units over to operation B. These 40 units should arrive as operation B is completing the first batch of 60; thus, operation B can continue without interruption until all 100 are completed.

- (i) Calculate the total manufacturing lead time for operation A and B without overlapping
(7 marks)
- (ii) Calculate the manufacturing lead time if the operations are overlapped.
(5 marks)
- (iii) Calculate saving time of the overlapped operation.
(6 marks)
- (iv) Demonstrate that Q₂ will arrive at operation B shortly before Q₁ runs out.
(7 marks)

- Q3** (a) Discuss **THREE (3)** impacts of Material Requirement Planning on purchasing.
(9 marks)
- (b) Differentiate between sole sourcing and single sourcing
(4 marks)
- (c) Discuss the process of selecting the supplier using a ranking method with appropriate examples.
(12 marks)

- Q4** (a) Syarikat Indah Sdn. Bhd. manufactures component parts for automobiles at Pasir Gudang and ships them to Middle East. The components are shipped by sea, transit time averages six weeks, and shipping costs RM1000 per shipment. The company is considering moving the parts by air at an estimated cost of RM7500; the shipment taking two days to get there. Inventory in transit for the shipment costs RM150 per day.


Propose an appropriate method of shipment for the components by giving detail justifications.

(15 marks)

- (b) Discuss **FIVE (5)** activities in the physical distribution system.

(10 marks)

- END OF QUESTION -

KERTAS SOALAN PERIKSAAN AKHIR	
Fakulti Pengurusan Perniagaan dan Industri	
TEMA DISKUSI	DISKUSI
	
NO. MAMPUAN	NO. SOALAN
(Sila isi dengan jawapan)	1000
TARIKH	