UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER I
SESSION 2013/2014

COURSE NAME	:	INDUSTRIAL MANAGEMENT
COURSE CODE	:	BPC 23303
PROGRAMME	:	2 BPB
EXAMINATION DATE	:	DECEMBER 2013/JANUARY 2014
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

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

Q1   (a)   Explain **THREE (3)** assumptions of the basic Economic Ordering Quantity Model (EOQ)

(3 marks)

(b)   Tumpi Sdn. Bhd. sells and supplies potato chips to local hotel in Malaysia. It costs the company RM30 each time it places an order of raw materials from its suppliers. The annual cost of carrying the stocks in inventory is RM4.50. The production manager estimates that monthly demand of the chips will be 1000 cartons. The company never stop production throught out the year.

Calculate:

(i)   Economic Ordering Quantity.

(3 marks)

(ii)   Total inventory cost.

(3 marks)

(iii)   Explain the situation when EOQ is achieved by using an appropriate illustration.

(8 marks)

(iv)   Analyze the effect of annual inventory cost, if the management of Tumpi Sdn Bhd. underestimates total annual demand by 50 percent.

(8 marks)

Q2 (a) Describe **TWO (2)** strategies to develop a capacity plan.

(6 marks)

(b) The Operations Manager of Tumpi Sdn. Bhd., Mr Zidane, forecasts the firm's aggregate demand requirements over the next four quaters of the year shown in Table **Q2**.

Table Q2: Aggregate Demand

Quarter	Demand forecast
1	70,000
2	100,000
3	50,000
4	150,000

Production is handled by a local workforce during a regular 40-hour week. Company likes to zero out its inventory at the end of the year so that it can start fresh each January. The company have gathered the following data as shown in Table **Q2(b)**:

Table Q2(b): Manufacturing Data

Beginning workforce	40 workers
Production per employee	1250 units per quarter
Hiring cost	RM500 per worker
Firing cost	RM500 per worker
Inventory carrying cost	RM1 per unit per quater
Regular production cost	RM10 per unit

(i) Analyze the production plan based on a level production strategy.

(5 marks)

(ii) Analyze the production plan based on a chase strategy

(5 marks)

(iii) Analyze the production plan based on mixed strategy when the company produce 70,000 in quarter 1, and 100,000 in quarter 2 through 4.

(5 marks)

(iv) Propose to the manager the optimal plan.

(4 marks)

Q3 (a) Describe **THREE (3)** strategic importances of scheduling.

(6 marks)

(b) Jenab Fine Restorations has received a rush order to refurbish five antique cars. The restoration involves two major processes: sanding and painting. The time required for each processes are shown in Table **Q3**.

Table Q3: Processing Time (hours)

| Job	Sanding	Painting
A	6	8
B	11	6
C	7	3
D	9	7
E	5	10

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

(5 marks)

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

(5 marks)

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

(5 marks)

(iv) Determine the idle time in the shop.

(4 marks)

Q4 (a) Discuss **TWO (2)** types of maintenance

(8 marks)

(b) Discuss the implementation of the preventive maintenance.

(7 marks)

(c) The diagram in Figure **Q4** shows the reliability of 5 loan processing clerks of the bank.
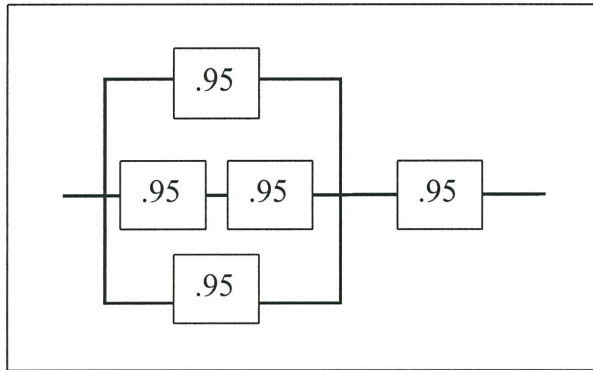
Figure Q4 Reliability of the clerks

(i) Calculate the reliability of the bank loans.

(5 marks)

(ii) Explain the situation when one of the clerk commits a mistake in the system.

(5 marks)

- END OF QUESTION -