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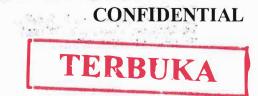
## UNIVERSITI TUN HUSSEIN ONN MALAYSIA

# FINAL EXAMINATION (TAKE HOME) SEMESTER II SESSION 2019/2020

INSTRUCTION	:	ANSWERS ALL QUESTIONS OPEN BOOK EXAMINATION
DURATION	:	24 HOURS
EXAMINATION DATE	:	JULY 2020
PROGRAMME CODE	:	BPB
COURSE CODE	•	BPB 22103
COURSE NAME	:	INDUSTRIAL MANAGEMENT

#### THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES

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The company operates seven days a week but facing fluctuating demand. The company Q1 interested to make sure distribution of worker per day is optimized. The analysis of staffing distribution showed in the Table Q1.

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Number of worker needed	6	6	6	6	10	10	10

Table Q1: Worker daily distribution for each day

Prepare a schedule that covers all requirements while giving two consecutive days off for each worker.

(11 marks)

Q2 A company has received four orders from the International University to provide ICT accessories to them. The processing time and due date shown in the Table Q2(a).

Job	Processing Time (days)	Due Date (Day)		
Α	6	8		
В	2	6		
С	8	18		
D	3	15		
E	9	23		

Table Q2(a): Processing	time and due date
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- Determine the sequence would the job be ranked according to: (a)
  - (i) Shortest Process Time (SPT).
  - (ii) Earliest Due Date (EDD).
  - Longest Process Time (LPT). (iii)
  - (iv)First Come First Serve (FCFS).

Calculate for each sequence in Q2(a): (b)

- (i) Average completion time.
- (ii) Average number of jobs in system.
- (iii) Average job lateness.
- (iv) Utilization.

(c) Explain the best option for the job.

(2 marks)

(16 marks)

(2 marks)

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(d) The process to produce the ICT accessories consists of five jobs and three work centers. The machine sequences are M1, M2 and M3. Processing time at each of the work centers is shown in the following **Table Q2(d)**.

Process	Job							
	Α	B	C	D	E	F	G	H
M1	2	5	2	3	1	2	4	2
M2	4	1	3	5	5	6	2	1
M3	6	4	5	2	3	2	6	2

Table Q2(d): Processing time

(i) Determine the optimal sequence for these jobs to be scheduled.

(4 marks)

(ii) Prepare charts for these jobs through the work centers.

(14 marks)

(1 marks)

(iii) Determine the total length of time of this optimal solutions

#### -END OF QUESTIONS-

