

CONFIDENTIAL



UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

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

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

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

CONFIDENTIAL

TERBUKA

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

Table Q1: Worker daily distribution for each day

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

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)**.

Table Q2(a): Processing time and due date

Job	Processing Time (days)	Due Date (Day)
A	6	8
B	2	6
C	8	18
D	3	15
E	9	23

- (a) Determine the sequence would the job be ranked according to:

- (i) Shortest Process Time (SPT).
- (ii) Earliest Due Date (EDD).
- (iii) Longest Process Time (LPT).
- (iv) First Come First Serve (FCFS).

(2 marks)

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

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

(16 marks)

- (c) Explain the best option for the job.

(2 marks)

- (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)**.

Table Q2(d): Processing time

Process	Job							
	A	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

- (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)
- (iii) Determine the total length of time of this optimal solutions (1 marks)

-END OF QUESTIONS-