

SULIT



**BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENGAJIAN TINGGI**

JABATAN KEJURUTERAAN AWAM

PENILAIAN ALTERNATIF

SESI DIS 2020

DCB30102 : BUILDING TRANSPORTATION

NAMA PENYELARAS KURSUS : ZURENA BINTI LEMEN

KAEDAH PENILAIAN : PEPERIKSAAN ONLINE

JENIS PENILAIAN : SOALAN ESEI (2 SOALAN)

TARIKH PENILAIAN : JULAI 2021

TEMPOH PENILAIAN : 1 JAM

LARANGAN TERHADAP PLAGIARISM (AKTA 174)

**PELAJAR TIDAK BOLEH MEMPLAGIAT APA-APA IDEA, PENULISAN, DATA
ATAU CIPTAAN ORANG LAIN. PLAGIAT ADALAH SALAH SATU
PENYELEWENGAN AKADEMIK. SEKIRANYA PELAJAR DIBUKTIKAN
MELAKUKAN PLAGIARISM, PENILAIAN BAGI KURSUS BERKENAAN AKAN
DIMANSUHKAN DAN DIBERI GRED F DENGAN NILAI MATA 0.**

**(RUJUK BUKU ARAHAN-ARAHAN PEPERIKSAAN DAN KAEDAH PENILAIAN (Diploma) EDISI 6, JUN 2019,
KLAUSA 17.3)**

INSTRUCTION:

This section consists of **TWO (2)** structured questions. Answer **ALL** questions.

ARAHAN:

Bahagian ini mengandungi DUA (2) soalan berstruktur. Jawab semua soalan.

QUESTION 1**SOALAN 1**

CLO 1
C3

- (a) Describe a hydraulic elevator.

Huraikan lif hidraulik.

[5 marks]

[5 markah]

CLO 1
C3

- (b) Explain FOUR (4) functions of traveller in airport building.

Terangkan EMPAT (4) fungsi travelator di bangunan lapangan terbang .

[8 marks]

[8 markah]

CLO 1
C3

- (c) Sketch the following types of escalator system arrangements.

Lakarkan jenis susunatur sistem escalator berikut:

- i) Criss- cross

Selang – seli

- ii) Parallel

Selari

- iii) Single in two direction

Satu dalam dua arah

[12 marks]

[12 markah]

QUESTION 2**SOALAN 2**CLO2
C4

- (a) A 30 – stories office block has a start time and ending time that is not consistent. Floor area of 12000m^2 and the ground floor is the density of residents is 11m^2 for each occupant. Room height is 2.4m. A group of 4 lifts will be used where each elevator has a car that can accommodate 22 peoples and the car speed is 3.0 m/s. Door width is 1.2m and the door opened with a speed of 0.5 m/s. Calculate the Round Trip Time (RTT) and analyze the quality of service.

Sebuah bangunan pejabat 30 tingkat mempunyai masa mula dan berhenti yang tidak menentu. Keluasan lantai bangunan tersebut adalah 12000m^2 dan kepadatan bagi aras bawah untuk setiap pengguna adalah 11m^2 . Ketinggian bilik adalah 2.4m. Satu kumpulan 4 buah lif akan digunakan di mana setiap lif mempunyai kereta yang boleh memuatkan 22 orang dan kelajuan kereta adalah 3.0m/s. Lebar pintu adalah 1.2m dan kelajuan bukaan pintu adalah 0.5 m/s. Kirakan Pusingan Masa Perjalanan (RTT) dan Analisa kualiti perkhidmatan lif tersebut.

[25 marks]

[25 markah]

SOALAN TAMAT

Formula:

i. Peak demand in 5 minutes = $\frac{(\text{Floor area})(\% \text{ starting \& stopping time})}{(\text{Floor area per person})(100)}$

with Floor area per person = population density
 % starting and stopping time = 17% for unified
 = 12% for staggered

ii. Car travel distance, $L = (\text{Room height} \times \text{Number of storey})$

iii. Load factor, $n = (80\% \times \text{Maximum capacity of car})$

iv. Probable number of stops, $S_1 = S - S \left(\frac{S-1}{S}\right)^n$

with $S = \text{maximum number of stops}$
 $n = 80\% \text{ of maximum capacity of car}$

v. Total upward journey time, $T_o = S_1 \left(\frac{L}{SV} + 2V\right)$

with $S_1 = \text{probable number of stops}$
 $L = \text{car travel distance}$
 $S = \text{maximum number of stops}$
 $V = \text{car speed}$

vi. Total downward journey time, $T_d = \left(\frac{L}{V} + 2V\right)$

with $L = \text{car travel distance}$
 $V = \text{car speed}$

vii. Door operating time, $T_o = 2(S_1 + 1) \left(\frac{W}{V_d}\right)$

with $S_1 = \text{probable number of stops}$
 $W = \text{door width}$
 $V_d = \text{door speed}$

viii. Total passenger transfer time, $T_p = 2n$

with $n = 80\%$ of maximum capacity of car

ix. Round trip time, $RTT = (T_u + T_d + T_o + T_p)$

with $T_u =$ Total upward journey time

$T_d =$ Total downward journey time

$T_o =$ Door operating time

$T_p =$ Total passenger transfer time

x.
$$\text{Interval} = \frac{(\text{Round trip time})}{(\text{Number of cars})}$$

xi.
$$\text{Capacity of the group} = \frac{(5 \text{ minutes} \times 60 \text{ seconds} \times \text{Number of cars} \times n)}{(RTT)}$$

with $n = 80\%$ of maximum capacity of car

$RTT =$ Round Trip Time