

SULIT



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

JABATAN KEJURUTERAAN AWAM

PENILAIAN ALTERNATIF

SESI DIS 2020

DCB6232 : BUILDING TRANSPORTATION

NAMA PENYELARAS KURSUS : ZURENA BINTI LEMEN

KAEDAH PENILAIAN : PEPERIKSAAN ONLINE

JENIS PENILAIAN : SOALAN ESEI (2 SOALAN)

TARIKH PENILAIAN : 5 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) Human movement in a building is a complex activity and is influenced by a several basic factors. Explain 2 (TWO) of these basic factors.

Pergerakan manusia di dalam bangunan adalah aktiviti yang rumit dan dipengaruhi oleh beberapa faktor asas. Terangkan 2 (DUA) daripada faktor asas ini.

[4 marks]

[4 markah]

CLO 1
C3

- (b) Describe **TWO (2)** factors to be considered in choosing types of lift system.

Terangkan DUA (2) faktor yang perlu dipertimbangkan dalam memilih jenis – jenis sistem lif.

[4 marks]

[4 markah]

CLO 1
C3

- (c) Sketch a parallel layout of the escalator.

Lakarkan susunatur secara selari bagi eskalator.

[5 marks]

[5 markah]

CLO 1
C3

- (d) List **FOUR (4)** factors to be considered in locating the building transportation systems.

Senaraikan EMPAT (4) faktor yang perlu diambil kira bagi menentukan kedudukan sistem pengangkutan dalam bangunan.

[12 marks]

[12 markah]

QUESTION 2**SOALAN 2**CLO2
C4

- (a) Round Time Trip is the average time required by each lift in taking one full load of passengers from ground floor, discharging them in various upper floors by each lift loading full capacity of passengers from ground floor, and enables passengers disembarking to various floors and the lift return to ground floor to elevate new passengers for the next trip. Explain the process to get the sum of the Round Time Trip (RTT).

Pusingan Masa Perjalanan adalah masa purata yang diperlukan oleh setiap lif dalam mengambil satu beban penuh penumpang dari tingkat bawah, menurunkan penumpang di pelbagai tingkat atas dan kembali ke tingkat bawah untuk mengambil penumpang baru untuk perjalanan seterusnya. Terangkan proses untuk mendapatkan jumlah Pusingan Masa Perjalanan.

[12 marks]

[12markah]

CLO2
C4

(b) A group of 3 lift cars having a carrying capacity of 25 persons were installed in a new hotel building. Given $T_u = 50s$, $T_d = 27s$, $T_o = 65s$, $T_p = 32s$, determine:

Sekumpulan 3 unit keretali mempunyai kapasiti mengangkut 25 orang telah dipasang dalam sebuah bangunan hotel baru. Diberi $T_u = 50s$, $T_d = 27s$, $T_o = 65s$, $T_p = 32s$, tentukan:

- i) Round trip time.
Masa perjalanan sepusingan.
- ii) Interval.
Selang masa.
- iii) Capacity of the group.
kapasiti kumpulan lif.
- iv) Quality of the service.
Kualiti servis.

[13 marks]

[13 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