

SULIT



**BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK
KEMENTERIAN PENDIDIKAN TINGGI**

JABATAN KEJURUTERAAN AWAM

PEPERIKSAAN AKHIR

SESI JUN 2017

DCC2073 : CONTRACT AND ESTIMATING

TARIKH : 28 OKTOBER 2017

MASA : 8.30 PAGI - 10.30 PAGI (2 JAM)

Kertas ini mengandungi **DUA BELAS (12)** halaman bercetak.

Bahagian A: Struktur (2 soalan)

Bahagian B: Struktur (4 soalan)

Dokumen sokongan yang disertakan : Slip Sort Form (5 Helai)

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

SULIT

SECTION A: 50 MARKS
BAHAGIAN A: 50 MARKAH

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

CLO1
C1

- (a) List **FIVE (5)** stages involved in a construction process.
Senaraikan LIMA (5) peringkat yang terlibat dalam sesuatu proses pembinaan.

[5 marks]

[5 markah]

CLO1
C2

- (b) Identify **FOUR (4)** duties of the tender opening committee.
Kenalpasti EMPAT (4) tanggungjawab Jawatankuasa membuka tender.

[8 marks]

[8 markah]

CLO1
C2

- (c) Explain **THREE (3)** differences between tender document and table tender document.
Jelaskan TIGA (3) perbezaan diantara dokumen tender dan dokumen meja tender.

[12 marks]

[12 markah]

QUESTION 2

SOALAN 2

CLO1
C1

- (a) List the principle of contract based on Contract Act 1950.

Senaraikan prinsip-prinsip contract berdasarkan Akta Kontrak 1950.

[5 marks]

[5 markah]

CLO1
C2

- (b) Identify the features of the following types of contract.

Kenalpasti ciri-ciri bagi jenis kontrak yang berikut.

- i. Lump sum contract

Kontrak gumpalan

- ii. Turnkey contract

Kontrak Turnkey

- iii. Cost reimbursement contract(cost plus contract)

Kontrak kos tambah

- iv. Measure and Value Contract

Kontrak Ukur dan Nilai

[10 marks]

[10 markah]

CLO1
C2

- (c) Differentiate the following terms:-

Bezakan terma berikut:-

	Domestic Sub-Contractor/ Sub-Kontraktor Domestik	Nominated Sub-Contractor/ Sub-Kontraktor Dinamakan
Contractual Relationship/ Hubungan Kontrak		
Progress payments/ Bayaran Kemajuan		
Appointed by/ Dilantik oleh		
Claim Payment/ Tuntutan bayaran		
Types of work/ Jenis kerja		

[10 marks]

[10 markah]
SULIT

SECTION B: 50 MARKS**BAHAGIAN B: 50 MARKAH****INSTRUCTION:**

This section consists of **FOUR (4)** structured questions. Answer **TWO (2)** questions only.

ARAHAN:

Bahagian ini mengandungi EMPAT (4) soalan berstruktur. Jawab DUA (2) soalan sahaja.

QUESTION 1**SOALAN 1**

CLO2
C1

- (a) List **THREE (3)** advantages of cubic content method.
Senaraikan **TIGA (3)** kebaikan kaedah isipadu bangunan.

[5 marks]

[5 markah]

CLO2
C3

- (b) Based on the information in **Table B1(a)**, calculate the cost of construction for a new hostel building to accommodate about 3,200 students in 2016 consider cost of the materials increased 5% per annum.

Berdasarkan maklumat dalam Jadual B1(a), kira kos bagi pembinaan bangunan asrama baru untuk menampung kira-kira 3,200 pelajar pada 2016 dengan mengambilkira kos bahan binaan meningkat sebanyak 5% setahun.

Table B1(a): Type of Hostel and construction cost /
Jadual B1(a): Jenis Asrama dan kos pembinaan

Type of Hostel/Jenis Asrama	Construction cost (RM) in Year 2014/Kos pembinaan (RM) dalam tahun 2014	Number of students/Bilangam pelajar	Increase in labour salary (2014-2016)
Hostel A	3,000,000.00	1650	2 %
Hostel B	2,500,000.00	1500	
Hostel C	2,450,000.00	1300	

[10 marks]

[10 markah]

CLO2
C3

- (c) According to **Figure B1(a) & Figure B1(b)**, calculate the cost of the building using the Cubic Content Method. The price rate given is RM 525.00/m³.

*Berdasarkan kepada **Rajah B1(a) & Rajah B1(b)**, kirakan kos bangunan dengan menggunakan Kaedah Isipadu Bangunan. Kadar harga yang diberikan adalah RM 525.00/m³.*

[10 marks]

[10 markah]

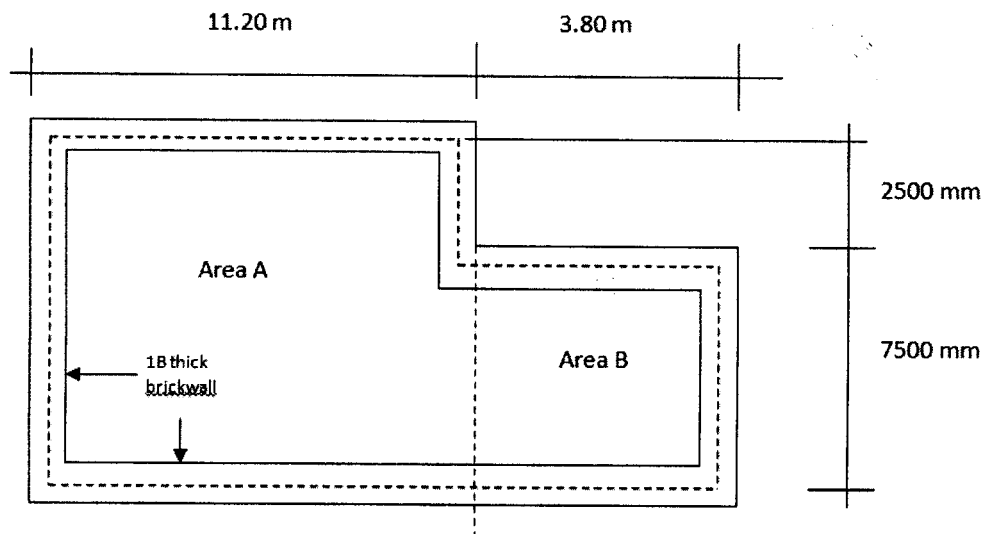


Figure B1(a): Floor Plan/ Rajah B1(a): Plan Lantai

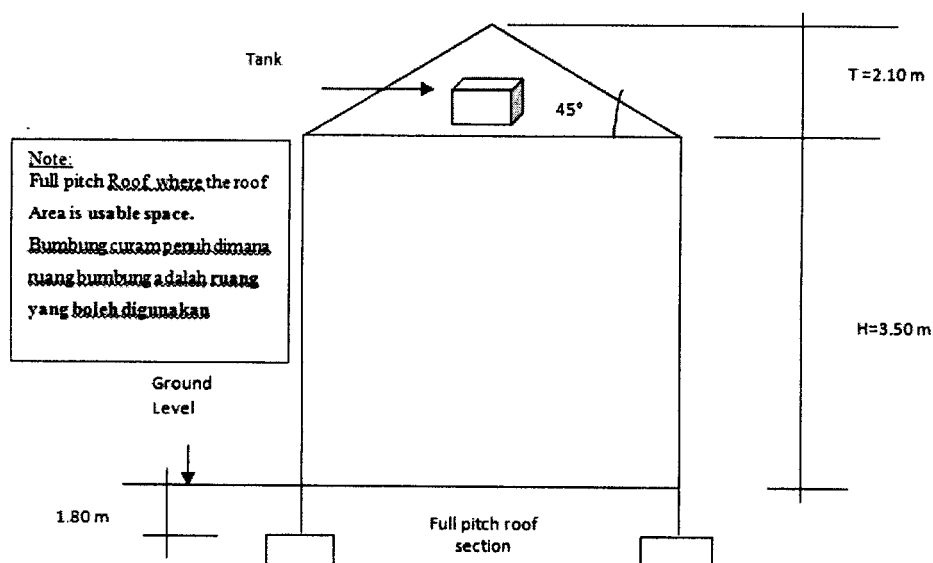


Figure B1(b): Cross Section /Rajah B1(a): Keratan

QUESTION 2

SOALAN 2

CLO2
C1

- (a) List **FIVE (5)** types of cost involved when a contractor purchase a machinery.

*Senaraikan **LIMA (5)** jenis kos yang ditanggung oleh kontraktor apabila membeli jentera.*

[5 marks]

[5 markah]

CLO2
C3

- (b) **Table B2** shows the information on a construction of pad footing F1 &F2. Calculate the built up cost for excavation work done manually for F1 and F2.

***Jadual B2** menunjukkan maklumat untuk pembinaan asas papak F1 dan F2. Kira kadar harga kerja penggalian asas papak F1 dan F2 dilakukan secara manual.*

[10 marks]

[10 markah]

CLO2
C3

- (c) **Table B2** shows the information on a construction of pad footing F1 &F2. Calculate the built up cost for concreting work done manually of pad footing F1 &F2.

***Jadual B2** menunjukkan maklumat untuk pembinaan asas papak F1 dan F2.*

Kira kadar harga kerja konkrit yang dijalankan secara manual bagi asas papak F1 dan F2.

[10 marks]

[10 markah]

Table B2 /Jadual B2

Materials /Bahan

- Cement /*Simen* : RM 18.50 / bag
- Sand / *Pasir* : RM 35.00 / m3
- Aggregate / *Batubaur* : RM 50.00 / m3

Labour Constant /Angkatap buruh

- Soil Excavation /*Penggalian tanah* : 1.5 hour/m3
- Removal of the excavated soil/*Pengeluaran isi tanah* : 0.9 hour/m3
- Backfill & soil compacting /*Pemadatan tanah* : 1.1 hour/m3
- Remove and replace concrete/*Penuangan konkrit* : 0.75 hour/m3
- Compact concrete /*Pemadatan konkrit* : 0.50 hour/m3

Others/ Lain-lain

- Operator wage /*Upah pekerja* : RM 45.00/ hour
 - Workes /pekerja : 2 person /orang
 - Profit & overhead/*Keuntungan dan pengurusan* : 15%
 - Concrete ratio/*nisbah konkrit* : 1 : 2 : 4 – 19mm aggregate
 - Type of soil is ordinary soil/*Tanah biasa*
- (Assume 1m3 concret/*Anggaran 1m³konkrit* = 28.7 bag cement/*kampit simen*)

Footing/ <i>Asas</i>	Size / <i>Saiz(m)</i>	Depth (m)/ <i>Kedalaman</i>	Nos/ <i>Bilangan</i>
F1	1.20 x 1.20 x 0.23	1.4	5
F2	1.05 x 1.05 x 0.15	1.2	3

QUESTION 3**SOALAN 3**CLO2
C1

- (a) Identify the purpose of cut and fill for earthwork.

Kenalpasti tujuan kerja-kerja pemotongan dan penambakan bagi kerja tanah.

[5 marks]

[5 markah]

CLO2
C3

- (b) By referring to
- Figure B3(a)**
- , calculate the quantity of earthwork to be cut and fill using a Triangle method.

*Merujuk kepada **Rajah B3(a)**, kirakan kuantiti kerja tanah yang perlu dipotong dan ditambah menggunakan kaedah Tiga Segi.*

Given/ Diberi:

- i. Interval is 10 m

Sela 10 m

- ii. Formation level is 150.0 m

Aras pembentukan 150.0 m

- iii. Top Soil is 150 mm

Tanah permukaan 150 mm

	1	2	3	4
A	150.00	151.50	150.35	151.20
B	151.00	151.20	148.52	150.50
C	151.40	149.20	149.52	150.85
D	151.75	148.25	147.52	150.85

Figure B3(a): Grid Layout
Rajah B3(a):Susunatur Grid

[10 marks]

[10 markah]

CLO2
C3

- (c) By referring to the information given and the piling layout plan from **Figure B3(b)**, Carry out taking off the quantity of the following :-
- Supply of starter piles
 - Supply of extension piles

*Dengan merujuk kepada maklumat diberi dan pelan susun atur kerja cerucuk **Rajah B3(b)**, sediakan pengukuran kuantiti untuk kerja cerucuk yang berikut:-*

- Menyedia dan membekalkan cerucuk permulaan*
- Menyedia dan membekalkan cerucuk tambahan*

[10 marks]

[10 markah]

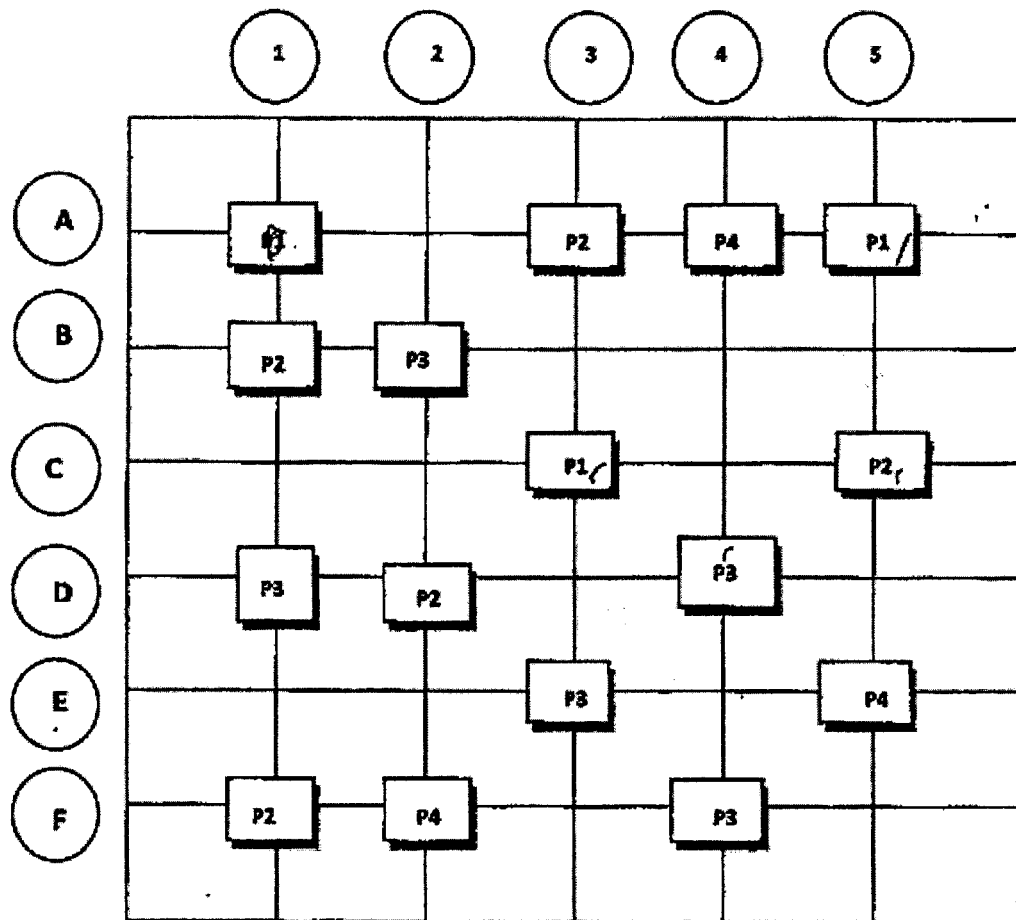


Figure B3(b) Piling Layout Plan
Rajah B3(b):Pelan Susun Atur Kerja Cerucuk

Data given:

- | | |
|---------------------|---|
| i. Types of piles | :Reinforced concrete piles, size 200mm×200mm. |
| ii. Driven depth | :24 m |
| iii. Starter piles | :12 m long |
| iv. Extension piles | :9m,6m long |
| v. Legend | :- |
| | P1(1 pile point) |
| | P2(2 pile point) |
| | P3(3 pile point) |
| | P4(4 pile point) |

QUESTION 4

SOALAN 4

CLO2
C1

- (a) Taking off list is one parts of quantity measurement. List **FIVE (5)** uses of taking off list .

"Taking Off List" merupakan sebahagian daripada pengukuran kuantiti. Senaraikan LIMA(5) kegunaan "Taking Off List".

[5 marks]

[5 markah]

CLO2
C3

- (b) Based on **Figure B4(a)**, carry out taking off quantities for :
Merujuk kepada Rajah B4(a), sediakan pengukuran kuantiti bagi:

- Formwork for ground beam / *kotakbentuk untuk rasuk bumi*
- Reinforcement in ground beam as stirrup/pengikat tetulang dalam rasuk

Given:

Diberi:

- Concrete cover / *Penutup konkrit* 40mm
- Concrete Grade / *Grade konkrit* 25
- No of Ground Beam / *Bilangan rasuk bumi* = 4 nos.

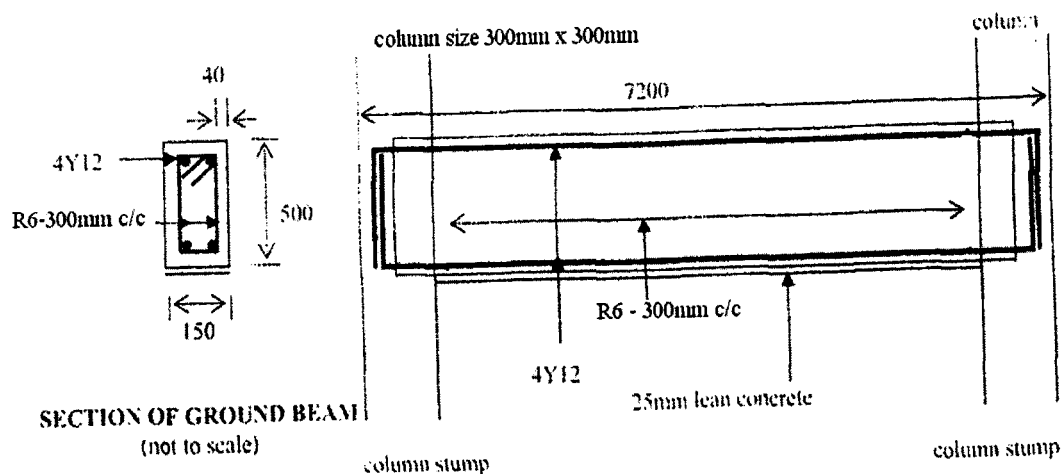


Figure B4(a) /Rajah B4(a)

[10 marks]
[10 markah]

- (c) **Figure B4(b)** shows a plan view of a brick wall. Based on the data given, calculate the quantity measurement for external wall finishes with 230mm thick.

CLO2
C3

Rajah B4(b) menunjukkan pandangan pelan dinding bata. Berpandukan dari data yang diberi, kira pengukuran kuantiti bagi kerja kemas dinding bata 230mm tebal.

Given/ Diberi :

- Height of brick wall / Tinggi dinding bata 2500mm
- 20mm thick cement and sand (1:6) plastering to wall/ 20mm tebal (1:6) lepaan simen dan pasir.
- One undercoat and two coats finishing of emulsion paint / satu lapisan alas dan 2 lapisan cat kemas.

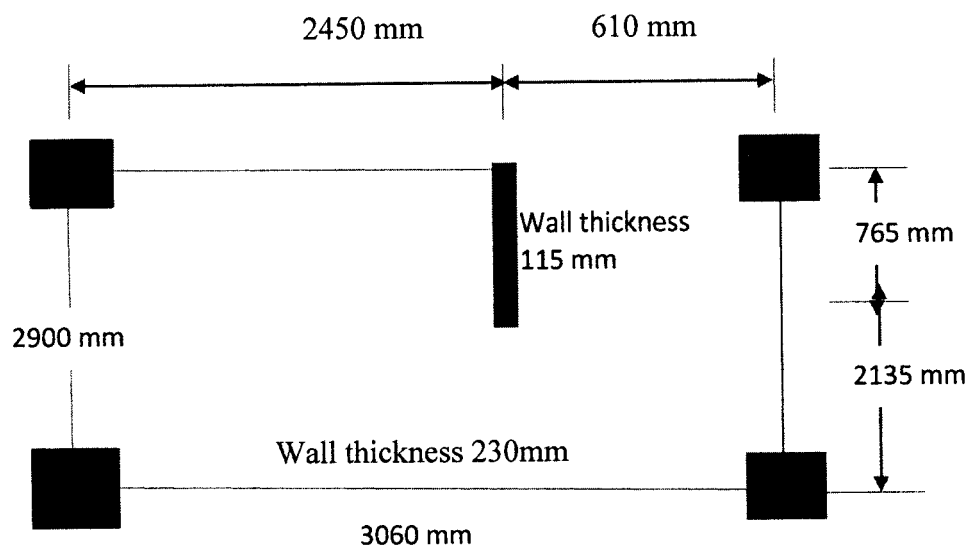


Figure B4(b)/ Rajah B4(b)

[10 marks]
[10 markah]

SOALAN TAMAT

DCC2073-Contract & Estimating

Job:	Bill No:	Element No:	Slip No:
Heading:			
Description:			Unit:
			Quantity:

SLIP SORT FORM