

SULIT



BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK
KEMENTERIAN PENDIDIKAN TINGGI

JABATAN KEJURUTERAAN AWAM

PEPERIKSAAN AKHIR
SESI DISEMBER 2017

DCC2073 : CONTRACT AND ESTIMATING

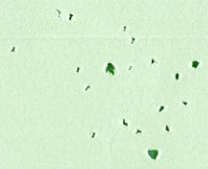
TARIKH : 10 APRIL 2018
MASA : 2.30 PTG – 4.30 PTG (2 JAM)

Kertas ini mengandungi **SEPULUH (10)** halaman bercetak.
Bahagian A: Struktur (2 soalan)
Bahagian B: Struktur (4 soalan)
Dokumen sokongan yang disertakan : *Dimension Form / Sort Form*

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 struktur. Jawab SEMUA soalan.

QUESTION 1

SOALAN 1

- CLO1
C1 (a) List **FIVE (5)** parties involved in a construction industry.
Senaraikan LIMA (5) pihak yang terlibat dalam industri pembinaan.
- [5 marks]
[5 markah]
- CLO1
C2 (b) Describe **FIVE (5)** principles of contract based on *Contract Act 1950*.
Huraikan LIMA (5) prinsip-prinsip kontrak berdasarkan kepada Akta Kontrak 1950.
- [10 marks]
[10 markah]
- CLO1
C2 (c) Lump Sump Contract is a type of contract usually applied in construction industry.
Explain briefly **FIVE (5)** characteristics of a Lump Sump Contract.
Kontrak Gumpalan merupakan sejenis kontrak yang biasa digunakan dalam industri pembinaan. Terangkan secara ringkas LIMA (5) ciri-ciri Kontrak Gumpalan.
- [10 marks]
[10 markah]

QUESTION 2

SOALAN 2

- CLO1
C1
- (a) State **FIVE (5)** types of tender applied in construction industry.
Nyatakan LIMA (5) jenis tender yang diamalkan dalam industri pembinaan.
- [5 marks]
[5 markah]
- CLO1
C2
- (b) Describe briefly **FIVE (5)** characteristics of *Table Tender Document*.
Huraikan secara ringkas LIMA (5) ciri-ciri Dokumen Meja Tawaran.
- [10 marks]
[10 markah]
- CLO1
C2
- (c) Explain **FIVE (5)** criteria to be considered by Board of Tender in selecting contractor during tendering process.
Terangkan LIMA (5) kriteria yang diambil kira oleh Lembaga Tender dalam memilih kontaktor semasa proses tender.
- [10 marks]
[10 markah]

SECTION B : 50 MARKS
BAHAGIAN B : 50 MARKAH

INSTRUCTION:

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

ARAHAN :

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

QUESTION 1

SOALAN 1

CLO2
C1

- (a) List **THREE (3)** advantages of Unit Valuation Method.

Senaraikan TIGA (3) kelebihan Kaedah Penilaian Unit.

[5 marks]

[5 markah]

CLO2
C3

- (b) Wilayah Jasa Sdn Bhd construct a Housing Project A which accommodate 380 units of houses with cost of RM5.7 million. After 4 years, this company construct another housing project which is Housing Project B and the construction design is based on the previous project. Housing Project B will involve 500 units of houses and the construction cost is expected to be increased by 2.5% per annum and transportation cost is increased by 3% per year. Estimate the total cost of Project B.

Wilayah Jasa Sdn. Bhd. membina Projek Perumahan A yang menempatkan 380 unit rumah dengan kos RM5.7 juta. Selepas 4 tahun, syarikat ini membina satu lagi projek perumahan iaitu Projek Perumahan B dan rekabentuk projek tersebut adalah mengikut rekabentuk projek terdahulu. Projek Perumahan B melibatkan 500 unit rumah dan kos pembinaan dijangka meningkat sebanyak 2.5% setahun dan kos pengangkutan bertambah sebanyak 3% setahun. Anggarkan kos Projek Perumahan B.

[10 marks]

[10 markah]

CLO2
C3

- (c) Based on **Table B1(c)** below, the following schools were constructed in year 2010. The proposed school will be constructed in Arau in year 2018 can accommodate 900 chairs. Calculate the school construction cost by taking the increasing cost of material at 6.5% per annum.

Berdasarkan Jadual B1(c) di bawah, sekolah-sekolah berikut telah dibina pada tahun 2010. Sekolah yang dicadang akan dibina di Arau pada tahun 2018 boleh menempatkan 900 kerusi. Kirakan kos pembinaan sekolah tersebut dengan mengambilkira kenaikan harga bahan pada kadar 6.5% setahun.

Table B1(c)/Jadual B1(c)

School / school	Construction cost / Kos pembinaan	Nos of chair / Bilangan kerusi	Location / Lokasi
A	RM 6.06 million / RM 6.06 juta	700	Kangar
B	RM 5.90 million / RM 5.90 juta	600	Kuala Perlis

[10 marks]
[10markah]

QUESTION 2

SOALAN 2

CLO2
C1

- (a) State **FIVE (5)** principles of Build-Up Rates Method for concrete work by machine.

Nyatakan LIMA (5) asas Kaedah Bina Kadar untuk kerja konkrit menggunakan mesin.

[5 marks]
[5 markah]

CLO2
C3

- (b) For a guard house project, a concrete mixture of (1:3:6 – 20mm aggregates) will be mixed manually for the construction of slab. Calculate the material cost for 1 cubic meter of concrete. Particular are as follows:

Bagi projek pondok pengawal, satu bancuhan konkrit (1:3:6 – 20mm batu baur) akan digaul secara manual untuk membina lantai. Kirakan kos bahan untuk 1meter padu konkrit. Perincian adalah seperti berikut:

Portland cement ($1\text{m}^3 = 28.7$ bags)	= RM18.00/bag
1m^3 Sand	= RM15.00
1m^3 Aggregates	= RM35.00
Wastage	= 50%
<i>Simen Portland ($1\text{m}^3 = 28.7$ bags)</i>	<i>= RM18.00/bag</i>
<i>1m^3 Pasir</i>	<i>= RM15.00</i>
<i>1m^3 Batu-baur</i>	<i>= RM35.00</i>
<i>Pembaziran</i>	<i>= 50%</i>

[10 marks]
[10 markah]

CLO2
C3

- (c) Five number of columns will be built in the construction of a garage. Size of the column is 400mm x 400mm and 3m height, and using concrete mixture of (1:3:6 – 20mm aggregates) that will be mixed manually. Calculate the total price of all columns needed in the construction.

Lima batang tiang akan dibina dalam pembinaan sebuah garaj. Saiz tiang adalah 400mm x 400mm dan 3m tinggi, dan menggunakan bancuhan konkrit (1:3:6 – 20mm batu baur) yang akan digaul secara manual. Kirakan jumlah harga keseluruhan tiang yang diperlukan dalam pembinaan.

Particular	
1m^3 of concrete (materials cost)	= RM 135.60
Labour charge	= RM30.00/day
Total hours to mix 1m^3	= 2 hours

<i>Perincian</i>	
<i>1m^3 konkrit (kos bahan)</i>	<i>= RM 135.60</i>
<i>Kos buruh</i>	<i>= RM30.00/hari</i>
<i>Jumlah jam untuk 1m^3</i>	<i>= 2 jam</i>

[10 marks]
[10 markah]

QUESTION 3
SOALAN 3

CLO2
C1

(a) Indicate or state **THREE (3)** uses of *Bill of Quantities*.

Kenalpasti atau nyatakan TIGA (3) kegunaan Senarai Kuantiti.

[5 marks]

[5 markah]

CLO2
C3

(b) Based on the following **Figure B3(b)** and **Table B3(b)**, calculate the quantity of soil using square method.

Berdasarkan Rajah B3(b) dan Jadual B3(b) berikut, kirakan kuantiti tanah menggunakan kaedah segiempat.

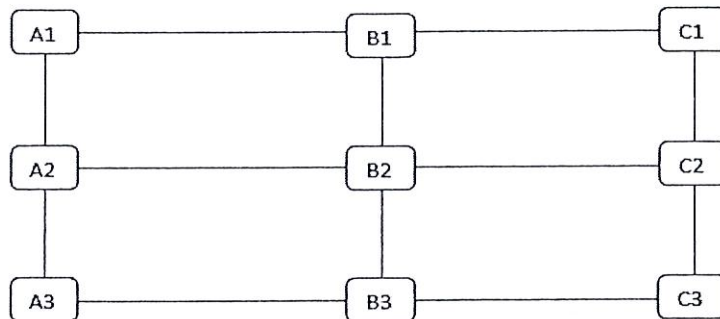


Figure B3(b) / Rajah B3(b)

Table B3(b) / Jadual B3(b)

Point / Titik	Origin Level (m) / Aras Sebenar
A1	87.40
A2	84.30
A3	81.60
B1	86.50
B2	88.40
B3	87.40
C1	90.50
C2	86.70
C3	89.60

Data: i. Interval / Sela = 10 meter

ii. Formation Level / Aras Formasi = 85.5 meter

[10 marks]

[10 markah]

- (c) By referring to Table B3(c) below and data given, calculate the quantity of initial pile and driven depth of pile for the shop lot project.

Dengan merujuk kepada Jadual B3(c) dan data yang diberi, kirakan kuantiti cerucuk permulaan dan kedalaman penusukan cerucuk untuk projek kedai kecil.

Table B3(b) / Jadual B3(b)

Notes :

1. All pile is precast reinforced concrete pile / *Semua cerucuk adalah dari jenis cerucuk konkrit pratuang bertetulang.*
2. All pile should be in 350 x 350mm size / *Semua cerucuk bersaiz 350 x 350mm*
3. Supply length of pile shall be / *Panjang cerucuk yang dibekalkan adalah:*
 - i. Starter pile / *Cerucuk permulaan : 6.00m long*
 - ii. Extension pile / *Cerucuk sambungan : 6.00m long*
4. Estimated penetration depth is 22 meter / *Anggaran kedalaman penembusan tanah ialah 22 meter*

Location	Types of pile cap			
	P1	P2	P3	P4
1/A-D		4	1	1
2/A-D	2		3	
3/A-D		1	1	2
4/A-D	1	1	1	2
5/A-D	2		1	

[10 marks]
[10 markah]

CLO2
C3

QUESTION 4

SOALAN 4

- CLO2
C1 (a) Describe 'structural drawing'.
Huraikan 'lukisan struktur'.

[5 marks]
[5 markah]

- CLO2
C3 (b) **Figure B4(a)** shows a plan view of a floor. Based on the data given, calculate the quantity measurement for external Wall.

Rajah B4(a) menunjukkan pandangan pelan lantai. Berpandukan data yang diberi, kirakan pengukuran kuantiti bagi dinding luar.

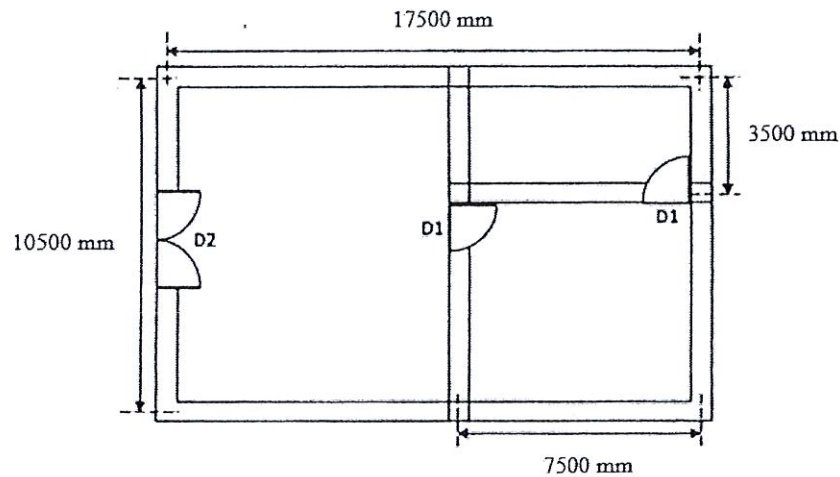


Figure B4(a) / Rajah B4(a)

- i) All brickwall is using $\frac{1}{2}$ brickwork with common brick with 113mm thick
Semua dinding bata adalah $\frac{1}{2}$ kerja bata dengan menggunakan bata biasa dengan tebal 113mm
- ii) D1 = 900mm x 1500mm
- iii) D2 = 1800mm x 1500mm
- iv) W1 = 1000mm x 1000mm
- v) Column / Tiang = 113mm x 113mm x 2600mm
- vi) Height of brickwall / Tinggi tiang bata = 2600mm

[10 marks]
[10 markah]

CLO2
C3

(c) Referring to the following **Figure B4(c)** and the data given, measure the quantity of reinforcement bar for main bars and links of a column stump in a dimension form.

Berpandukan Rajah B4(c) dan data yang diberikan, kirakan kuantiti bar tetulang bagi bar utama dan besi pengikat untuk tiang asas di dalam borang dimensi.

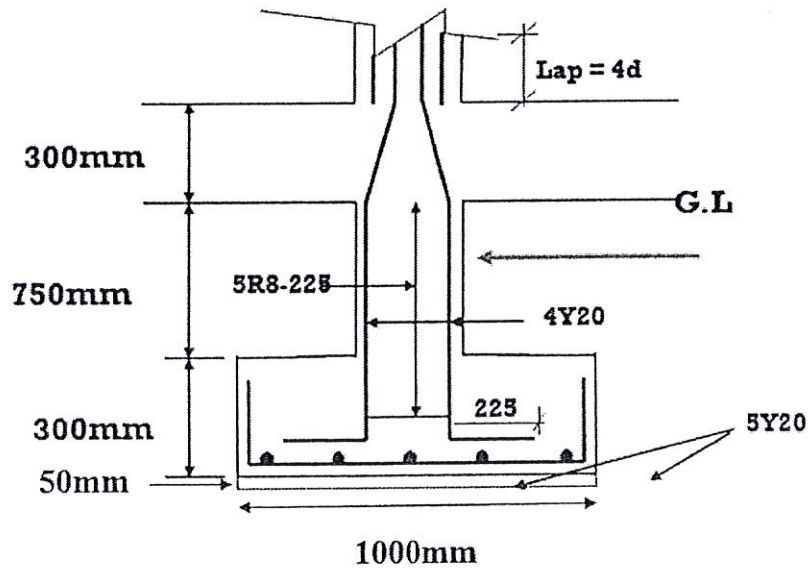


Figure B4(c) / Rajah B4(c)

Data:

- i) Pad Footing Concrete Cover = 40mm
Penutup Konkrit Asas Papak = 40mm
- ii) Concrete Cover (column stump) = 25mm
Penutup Konkrit (Asas tiang) = 25mm
- iii) Number of Pad Footing = 5
Bilangan Asas Papak = 5
- iv) Size of column stump = 300mm x 300mm
Saiz asas tiang = 300mm x 300mm

[10 marks]

[10 markah]

SOALAN TAMAT

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DCC2073-Contract and Estimating

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

DCC2073-Contract and Estimating

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

100



DCC2073-Contract and Estimating

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

100



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