

SULIT



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

JABATAN KEJURUTERAAN AWAM

PEPERIKSAAN AKHIR

SESI II : 2021/2022

DCQ10043: BUILDING WORKS MEASUREMENT 1

TARIKH : 7 JULAI 2022

MASA : 11.30 AM – 1.30 PM (2 JAM)

Kertas ini mengandungi **SEMBILAN (9)** halaman bercetak.

Bahagian A: Struktur (3 soalan)

Bahagian B: Esei (1 soalan)

Dokumen sokongan yang disertakan : 2 Set Lukisan

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

SULIT

Notes:**Nota:**

1. Taking off shall refer to the rules in Standard Method of Measurement of Building Works Second Edition (SMM2).

Pengukuran kuantiti hendaklah merujuk kepada peraturan Kaedah Piawaian Pengukuran Kuantiti untuk Kerja-Kerja Bangunan, Edisi ke-2 (SMM2).

2. Candidate is allowed to make any assumptions if the information given in the drawing is inadequate.

Calon dibenarkan membuat andaian sekiranya maklumat yang diberi tidak mencukupi.

SESI II: 2021/2022

SECTION A : 75 MARKS**BAHAGIAN A : 75 MARKAH****INSTRUCTION:**

This section consists of **THREE (3)** structured question Answer **ALL** questions.

ARAHAN :

Bahagian ini mengandungi **TIGA (3)** soalan struktur. Jawab **SEMUA** soalan.

QUESTION 1**SOALAN 1**

CLO1
C2

- (a) Explain **TWO (2)** general procedures and their sequence in preparing the Bills of Quantities in traditional form.

*Terangkan **DUA (2)** prosedur am dan turutannya di dalam penyediaan Senarai Kuantiti dalam bentuk tradisional.*

[5 marks]
[5 markah]

Types / Jenis	P1	P2
Size of pad foudation <i>Saiz asas pad</i>	1500mm x 800mm x 450mm	1800mm x 950mm x 550mm
Nos of pad foundation <i>Bilangan asas pad</i>	28	53

Figure A1 / Rajah A1

CLO1
C3

- (b) Based on Figure A1, illustrate the usage of Timesing, Dimension, Waste, Squaring and Description Column for measurement for concrete works for P1 (Concrete Works VRC Grade 25 only).

Berdasarkan Rajah A2, ilustrasi penggunaan Ruangan Angkali, Dimensi, Pembaziran, Pendaraban dan Keterangan Kerja bagi item Kerja-kkerja konkrit bagi P1 (Kerja-Kerja Konkrit VRC Gred 25 sahaja).

[10 marks]
[10 markah]

CLO1
C3

- (c) Based on Figure A1, illustrate the usage of Timesing, Dimension, Waste, Squaring and Description Column for measurement for concrete works for P2 (Concrete Works VRC Grade 25 only).

Berdasarkan Rajah A2, ilustrasi penggunaan Ruangan Angkali, Dimensi, Pembaziran, Pendaraban dan Keterangan Kerja bagi item Kerja-kerja konkrit bagi P2 (Kerja-Kerja Konkrit VRC Gred 25 sahaja).

[10 marks]
[10 markah]

QUESTION 2

SOALAN 2

CLO1
C2

- (a) By referring to the SMM2, explain the following item in Table A2(i).
Dengan merujuk kepada SMM2, terangkan item berikut di dalam Jadual A2(i).

Table A2(i) / Jadual A2(i)

Item / Item	Description / Keterangan
1	Subsections which refer to the excavation work for topsoil <i>Sub-seksyen merujuk kepada kerja-kerja pengorekan bagi tanah atas</i>
2	Subsections which refer to the excavation work for classification of depth <i>Sub-seksyen merujuk kepada kerja-kerja pengorekan bagi pengkelasan kedalaman</i>

[5 marks]
[5 markah]

CLO1
C3

- (b) Based on the **DRAWING NO. DCQ10043/001-002**, prepare the quantities measurement for Work Below Lowest Floor Finish for the item concrete for pad foundation for F1 and F2.

Berdasarkan kepada LUKISAN NO. DCQ10043/001-002, sediakan pengukuran kuantiti bagi Kerja-Kerja Di Bawah Aras Lantai Terbawah seperti kerja konkrit bagi tapak asas pad untuk F1 dan F2.

[10 marks]

[10 markah]

CLO1
C3

- (c) Based on the **DRAWING NO. DCQ10043/001-002**, prepare the quantities measurement for Work Below Lowest Floor Finish for the item concrete for ground beam for GB1 until GB4.

Berdasarkan kepada LUKISAN NO. DCQ10043/001-002, sediakan pengukuran kuantiti bagi Kerja-Kerja Di Bawah Aras Lantai Terbawah seperti kerja konkrit bagi rasuk tanah untuk GB1 hingga GB4.

[10 marks]

[10 markah]

QUESTION 3**SOALAN 3**CLO1
C2

- (a) By referring to the SMM2, explain the following item in Table A3(i).
Dengan merujuk kepada SMM2, terangkan item berikut di dalam Jadual A3(i).

Table A3(i) / *Jadual A3(i)*

Item / <i>Item</i>	Description / <i>Keterangan</i>
1	Particulars for in-situ concrete based on subsections F.1.1 <i>Butiran bagi konkrit di-situ berdasarkan sub-seksyen F.1.1</i>
2	TWO (2) subsections which refer to the concrete work for classification of size <i>DUA (2) sub-seksyen merujuk kepada kerja-kerja konkrit bagi pengkelasan saiz</i>

[5 marks]

[5 markah]

CLO1
C3

- (b) Based on the **DRAWING NO. DCQ10043/001-002**, prepare the quantities measurement for Work Below Lowest Floor Finish for the item formwork for pad foundation for F1.

*Berdasarkan kepada **LUKISAN NO. DCQ10043/001-002**, sediakan pengukuran kuantiti bagi Kerja-Kerja Di Bawah Aras Lantai Terbawah seperti kerja acuan bagi tapak asas pad untuk F1.*

[10 marks]

[10 markah]

CLO1
C3

- (c) Based on the **DRAWING NO. DCQ10043/001-002**, prepare the quantities measurement for Work Below Lowest Floor Finish for the item formwork for ground beam for GB1 until GB4.

Berdasarkan kepada LUKISAN NO. DCQ10043/001-002, sediakan pengukuran kuantiti bagi Kerja-Kerja Di Bawah Aras Lantai Terbawah seperti kerja acuan bagi rasuk tanah untuk GB1 hingga GB4.

[10 marks]

[10 markah]

SESI II: 2021/2022

SECTION B : 25 MARKS**BAHAGIAN B : 25 MARKAH****INSTRUCTION:**

This section consists of **ONE (1)** essay question Answer **ALL** question.

ARAHAN :

*Bahagian ini mengandungi **SATU (1)** soalan esei. Jawab **SEMUA** soalan.*

QUESTION 1**SOALAN 1**

CLO1
C2

(a)

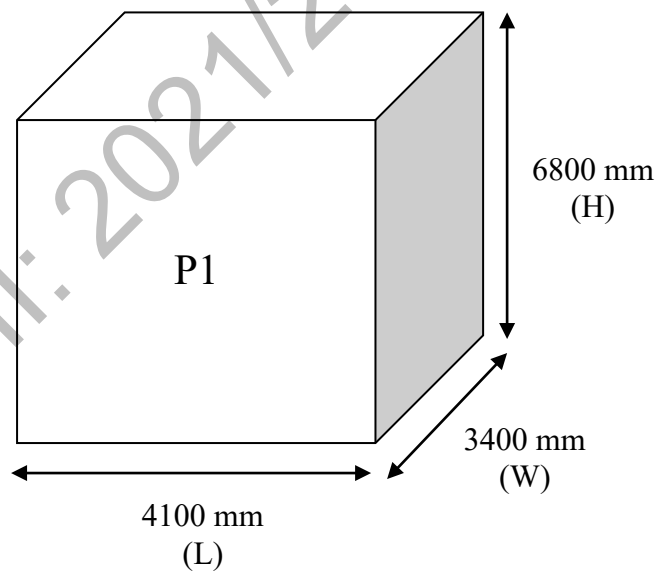


Figure A4 / Rajah A4

Based on Figure A4, give the basic dimension of measurement work for P1 by using the dimension paper for volume and area.

Berdasarkan Rajah A1, berikan dimensi asas pengukuran untuk P1 dengan menggunakan kertas dimensi bagi isipadu dan luas.

[10 marks]
[10 markah]

CLO1
C3

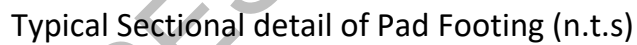
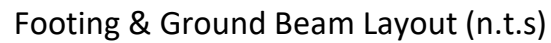
- (b) Based on the **DRAWING NO. DCQ10043/001-002**, prepare the quantities measurement for Work Below Lowest Floor Finish for the item concrete and formwork for all column stump.

Berdasarkan kepada LUKISAN NO. DCQ10043/001-002, sediakan pengukuran kuantiti bagi Kerja-Kerja Di Bawah Aras Lantai Terbawah seperti kerja konkrit dan acuan bagi semua tiang sambut.

[15 marks]

[15 markah]

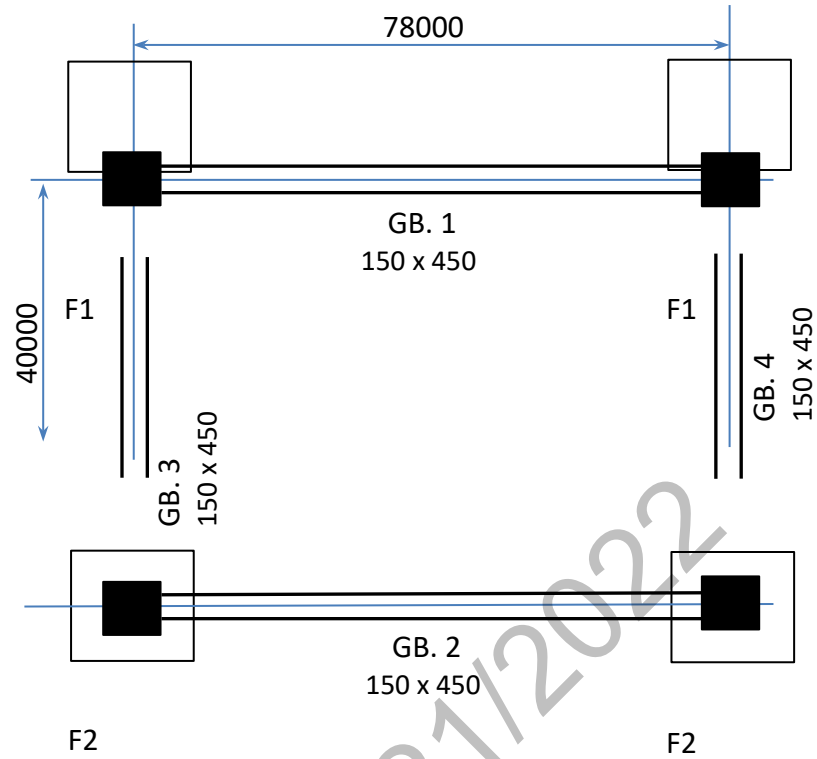
SOALAN TAMAT



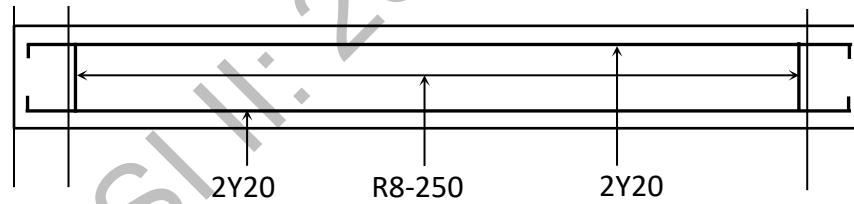
Type	Nos.	Size of Pad Footing			Size of Column Stump
		L	W	D	
F1	3	2000	2000	900	200 x 200mm
F2	3	2500	2500	1200	200 x 200mm

Schedule of Pad Footing & Stump

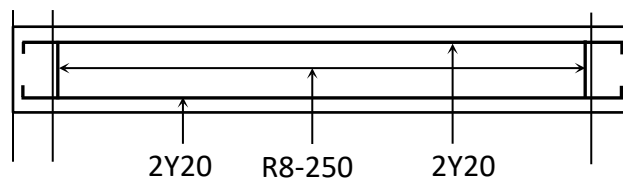
DRAWING NO. DCQ10043/001



Footing & Ground Beam Layout (n.t.s)



Typical Detail of Ground Beam GB. 1 & GB. 2 (n.t.s)



Typical Detail of Ground Beam GB. 3 & GB. 4 (n.t.s)

Diameter of bars		20mm	8mm
Multiplier Factor		2.467	0.395

Reinforcement schedule

- Note : - Size of column stump - 200mm x 200mm
- Conc. cover for pad footing, column stump & ground beam is **40mm** thick

DRAWING NO. DCQ10043/002

SES/II: 2021/2022