

SULIT



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

JABATAN KEJURUTERAAN AWAM

**PEPERIKSAAN AKHIR
SESI DISEMBER 2016**

DCC2073 : CONTRACT AND ESTIMATING

**TARIKH : 05 APRIL 2017
MASA : 2.30 PM - 4.30 PM (2 JAM)**

Kertas ini mengandungi **EMPAT BELAS (14)** halaman bercetak.

Bahagian A: Struktur (2 soalan)

Bahagian B: Struktur (4 soalan)

Dokumen sokongan yang disertakan : Borang Slip Sort

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.

CLO1
C1

QUESTION 1

SOALAN 1

- (a) State **FIVE (5)** stages related to construction.

Nyatakan LIMA (5) aktiviti yang berkaitan dengan pembinaan.

[5 marks]

[5 markah]

CLO1
C2

- (b) Table Tender Document is very important during the tendering process. Identify **FOUR (4)** characteristics of Table Tender Document.

Dokumen Meja Tender sangat penting semasa proses tawaran. Kenalpasti EMPAT (4) ciri-ciri Dokumen Meja Tender.

[8 marks]

[8 markah]

CLO1
C2

- (c) Describe **SIX (6)** criteria that need to be considered by the Board of Tender in the process of selecting a contractor.

Terangkan ENAM (6) perkara yang perlu dipertimbangkan oleh Lembaga Tawaran dalam proses pemilihan kontraktor

[12 marks]

[12 markah]

QUESTION 2

SOALAN 2

CLO1
C1

- (a) State **FIVE (5)** principles of contract according to Contract Act 1950.

Nyatakan LIMA (5) prinsip kontrak berdasarkan Akta Kontrak 1950.

[5 marks]

[5 markah]

CLO1
C2

- (b) A subcontractor is an individual or company that signs a contract to perform a specific work as part of the overall project. Describe **THREE (3)** differences between Domestic Sub-contractor and Nominated Sub-contractor.

Subkontraktor adalah individu atau syarikat yang menandatangani kontrak untuk melaksanakan tugas yang tertentu sebahagian dari keseluruhan projek.

Terangkan TIGA (3) perbezaan diantara Subkontraktor Domestik dan Subkontraktor Dinamakan.

[10 marks]

[10 markah]

CLO1
C2

- (c) Turnkey Contract is one of the contracting methods used in the construction industry. Identify **FIVE (5)** characteristics of the contract.

Kontrak Turnkey merupakan salah satu daripada kaedah kontrak yang digunakan dalam industri pembinaan. Kenalpasti LIMA (5) ciri-ciri kontrak tersebut.

[10 marks]

[10 markah]

SECTION B : 50 MARKS

BAHAGIAN B : 50 MARKAH

INSTRUCTION:

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

ARAHAN:

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

QUESTION 1

SOALAN 1

CLO2
C1

- a) i) Define Preliminary Estimating

Definisikan taksiran awalan

[2 marks]

[2 markah]

- ii) List **THREE (3)** methods that can be used to prepare the Preliminary Estimating.

Senaraikan TIGA (3) kaedah yang biasa digunakan dalam menyediakan taksiran awalan.

[3 marks]

[3 markah]

CLO2
C3

- b) Based on **Table B1**, calculate the cost of construction of Hospital C which can accommodate 6000 patients, taking into consideration that there will be an additional 25% cost for materials.

Berdasarkan Jadual B1, kirakan kos pembinaan untuk Hospital C yang mana boleh memuatkan 6000 orang pesakit, anggaran kos mestilah mengambilkira terhadap penambahan kos sebanyak 25% bagi kos bahan.

Table B1/Jadual B1

Types / Jenis	Construction Cost / Kos Pembinaan (RM)	Total Patients / Jumlah Pesakit
Hospital A	2,800,500.00	3,500
Hospital B	3,500,000.00	4,200

[10 marks]

[10 markah]

CLO2
C3

- c) Based on **Figure B1**, calculate the cost of the building using the Cubic Content Method, assuming that the price rate is RM 550.00 / m³.

Berdasarkan **Rajah B1**, kirakan kos bangunan dengan menggunakan Kaedah Isipadu Bangunan, andai kadar harga adalah RM 550.00 / m³.

[10 marks]

[10 markah]

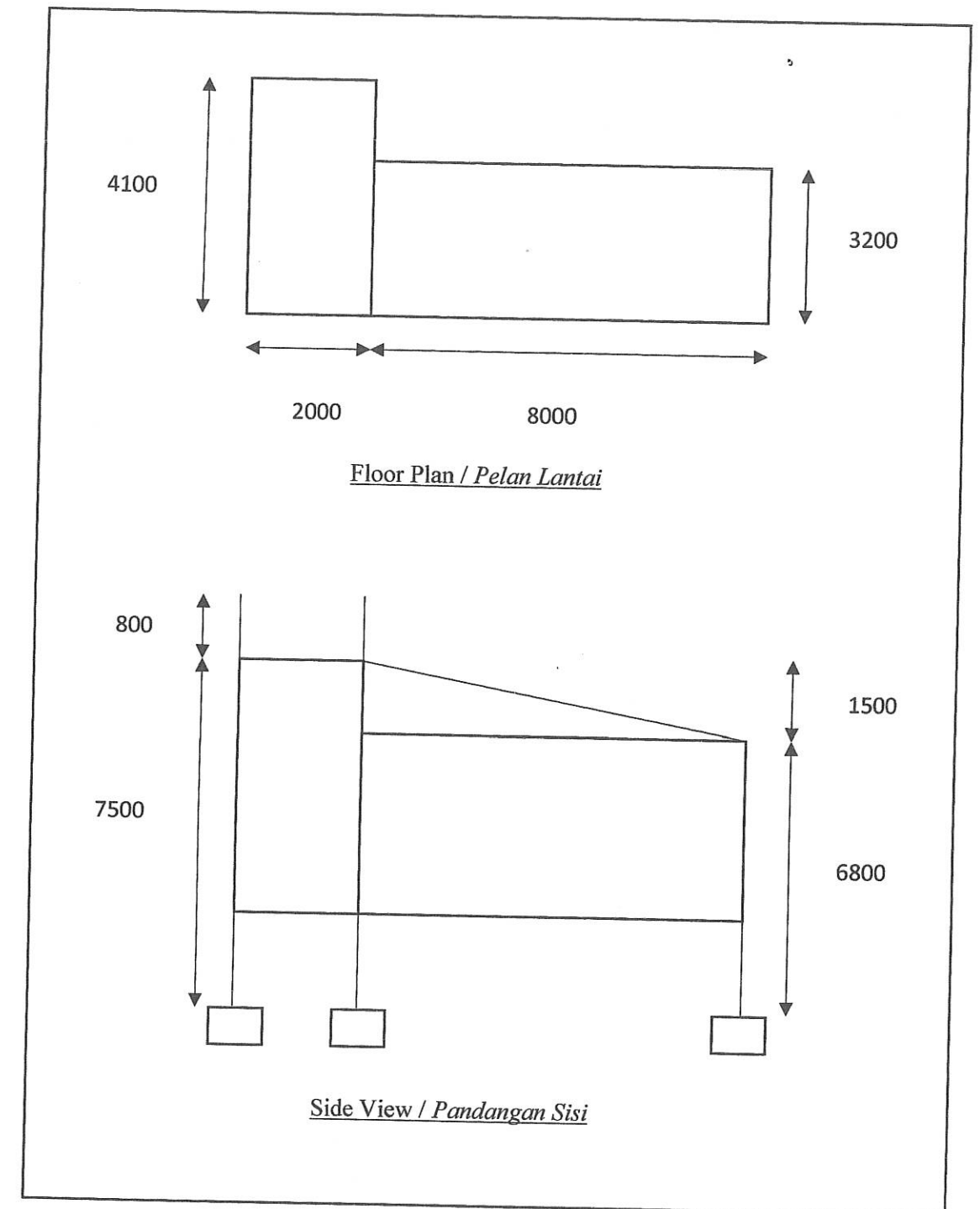


Figure B1/Rajah B1

QUESTION 2
SOALAN 2

CLO2
C1

- (a) List **FIVE (5)** elements to be considered in doing pricing for excavation work
Senaraikan LIMA (5) elemen yang dipertimbangkan dalam membuat kadar harga kerja penggalian.

[5 marks]

[5 markah]

CLO2
C3

- (b) Based on **Table B2(a)**, calculate the cost of 1m^3 for trench excavation work by hand.
Type of soil is ordinary soil.
Berdasarkan Jadual B2(a), hitungkan kos 1m^3 kerja pengorekan parit dengan menggunakan tangan. Jenis tanah adalah tanah biasa.

Table B2(a)/Jadual B2(a)

Labour wage <i>Upah buruh</i>	RM 55.00/ day <i>RM 55.00/sehari</i>
Labour Output:- <i>Angkatap buruh:-</i>	
Excavation soil <i>Pengorekan tanah</i>	2.50 hours/ m^3 <i>2.50 jam/m^3</i>
Removal & transported soil <i>Mengeluarkan dan mengangkut tanah</i>	2.00 hours/ m^3 <i>2.00 jam/m^3</i>
Backfill & soil compacting <i>Tambak & pepadatan tanah</i>	1.50 hours/ m^3 <i>1.50 jam/m^3</i>
Profit & overhead <i>Keuntungan & kos pengurusan</i>	10% 10%

[10 marks]

[10 markah]

CLO2
C3

- (c) Based on **Table B2(b)**, calculate the cost of 1m^3 concrete work (1:2:4 – aggregates 19mm) using hand.
Berdasarkan Jadual B2(b), hitungkan kos 1m^3 kerja konkrit (1:2:4- 19- batu baur dengan menggunakan tangan.

Table B2(b)/Jadual B2(b)

Materials:- <i>Bahan-bahan:-</i>	
Cement./ <i>Simen.</i>	RM 18.00/bag/ <i>RM 18.00/kampit</i>
Sand./ <i>Pasir</i>	RM 30.00/ m^3 / <i>RM 30.00/m^3</i>
Aggregate./ <i>Batu baur</i>	RM 45.00/ m^3 / <i>RM 45.00/m^3</i>
Labour output:- <i>Angkatap buruh:-</i>	
Mixing concrete./ <i>Menggaul konkrit.</i>	2.5 hours./ <i>2.5 jam</i>
Transporting concrete./ <i>Mengangkut konkrit.</i>	2.0 hours./ <i>2.0 jam</i>
Casting and Compacting concrete. <i>Menuang dan memadatkan konkrit.</i>	2.8 hours <i>2.8 jam</i>
Labour wage per day/ <i>Upah buruh sehari</i>	RM 50.00/ <i>Rm 50.00</i>
Profit and overhead <i>Keuntungan dan kos pengurusan</i>	10% 10%
Others:- <i>Lain-lain:-</i>	
1m^3 cement equal to 28 bag./ <i>1m^3 simen bersamaan dengan 28 kampit.</i>	
Shrinkage and wastage – 50%./ <i>Pengecutan dan pembaziran -50%</i>	
Standard working day – 8 hours./ <i>Jam berkerja sehari – 8 jam</i>	

[10 marks]

[10 markah]

QUESTION 3

SOALAN 3

CLO2
C1

(a) Describe cut and fill in earthwork.

Terangkan kerja pemotongan dan tambakan dalam kerja-kerja tanah.

[5 marks]

[5 markah]

CLO2
C3

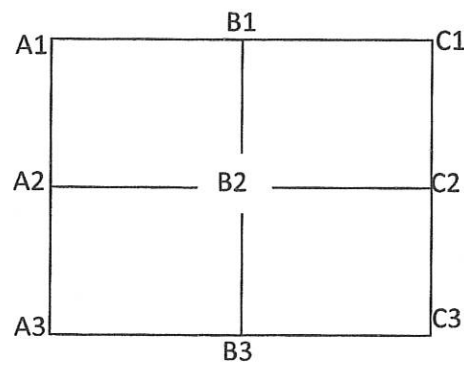
(b) Refer to the grid layout in **Figure B3(a)**, calculate the quantity of soil using Square Method.

*Merujuk kepada susunatur grid pada **Rajah B3(a)**, hitungkan kuantiti tanah dengan menggunakan Kaedah Segi Empat Sama.*

- i. Total area / *Jumlah keluasan*
- ii. Average height of soil / *Purata ketinggian tanah*
- iii. Total volume cut/ fill/ *Jumlah isipadu tanah yang dipotong/ di tambak*

Given / *Diberi:*

- i. Interval / *Selang* = 10 meter
- ii. Formation level / *Aras formasi* = 97.5 meter



Point	Origin Level (m)
A1	99.50
A2	96.20
A3	94.30
B1	98.20
B2	101.80
B3	98.00
C1	102.20

Figure B3(a)/Rajah B3(a)

[10 marks]

[10 markah]

CLO2
C3

(c) By referring to **Figure B3(b)** and **Table B3(b)**, calculate the quantity of:

*Merujuk kepada **Rajah B3(b)** dan **Jadual B3(b)**, kirakan kuantiti bagi:*

- i. Initial pile/cerucuk awalan
- ii. Depth of pile penetration / *kedalaman penusukan*

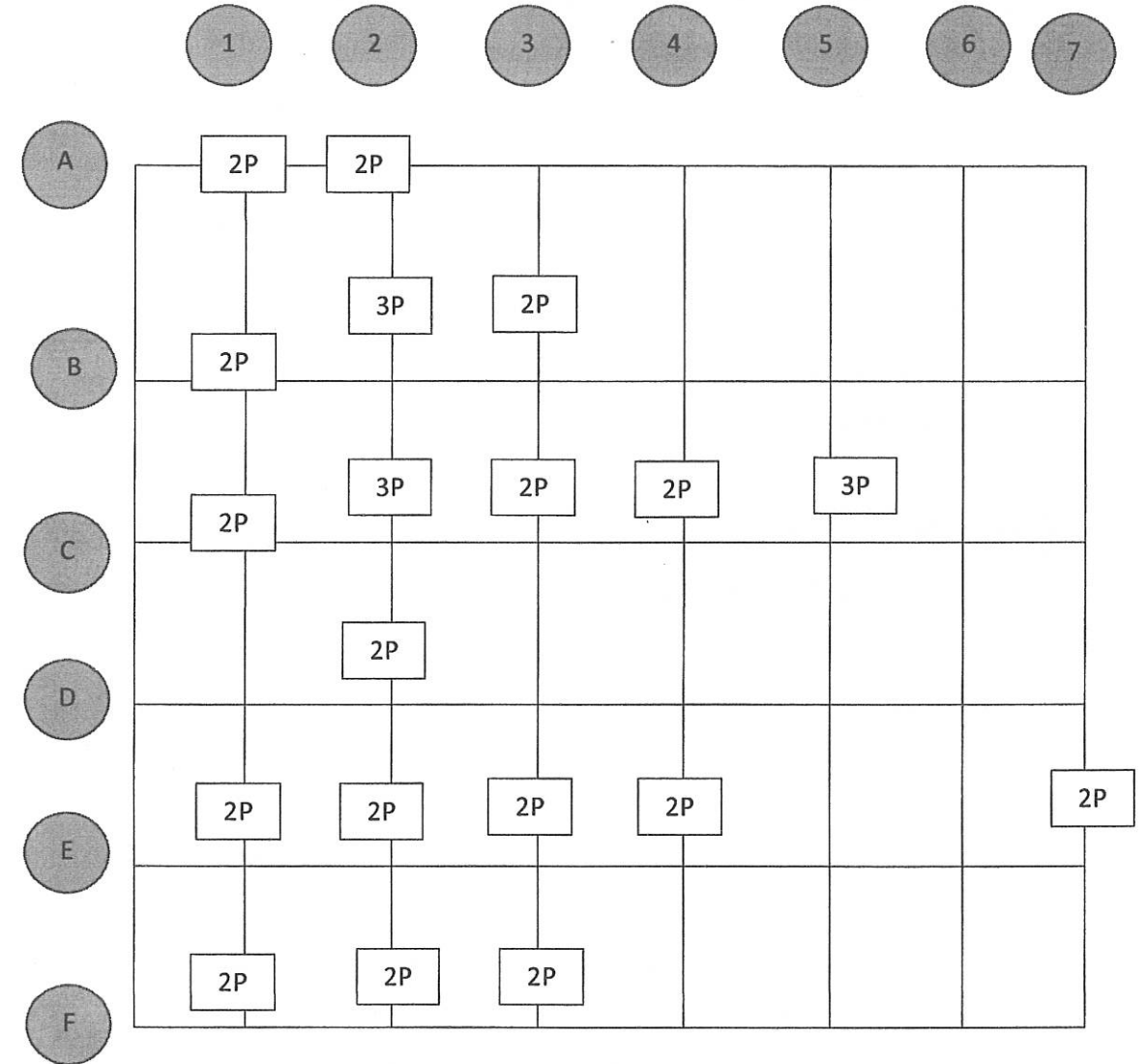


Figure B3(b)/ Rajah B3(b)

Table B3(b)/ *Jadual B3(b)*

ITEMS/ <i>ITEM</i>	DESCRIPTION / <i>KETERANGAN</i>
Type of piles / <i>jenis cerucuk</i>	Reinforced concrete piles , size 200mm x 200mm
Driven Depth / <i>kedalaman</i>	26 m
Starter Piles / <i>cerucuk permulaan</i>	12m long
Extension Piles / <i>cerucuk sambungan</i>	6m , 3m long
Legend / <i>petunjuk</i>	2P refers to pile with 2 pile point 3P refers to pile with 3 pile point

[10 marks]

[10 markah]

QUESTION 4

SOALAN 4

- (a) Identify the taking off list of beam and its units.

Kenalpasti senarai ukur kuantiti dan unit bagi rasuk

[5 marks]

[5 markah]

- (b) By referring to
- Figure B4(a)**
- : Reinforced concrete beam. Carry out taking off the quantity for the following:

- Unsawn timber as formwork for beam 1/A-B
- Reinforced concrete (1:2:4 mm aggregate) for beam 1/A-B
- High yield steel as main reinforcement bar in beam A/1-2
- Mild steel as stirrup in beam A/1-2

*Dengan merujuk pelan susun atur rasuk konkrit bertetulang dalam Rajah B4(a).**Sediakan ukur kuantiti bagi item-item seperti berikut:*

- Kayu tidak berketam sebagai kotak bentuk rasuk 1/A-B*
- Konkrit bertetulang (1:2:4-19 mm aggregate) for beam 1/A-B*
- Keluli tegasan sebagai tetulang utama untuk rasuk A/1-2*
- Keluli lembut sebagai tetulang perangkai pada rasuk A/1-2*

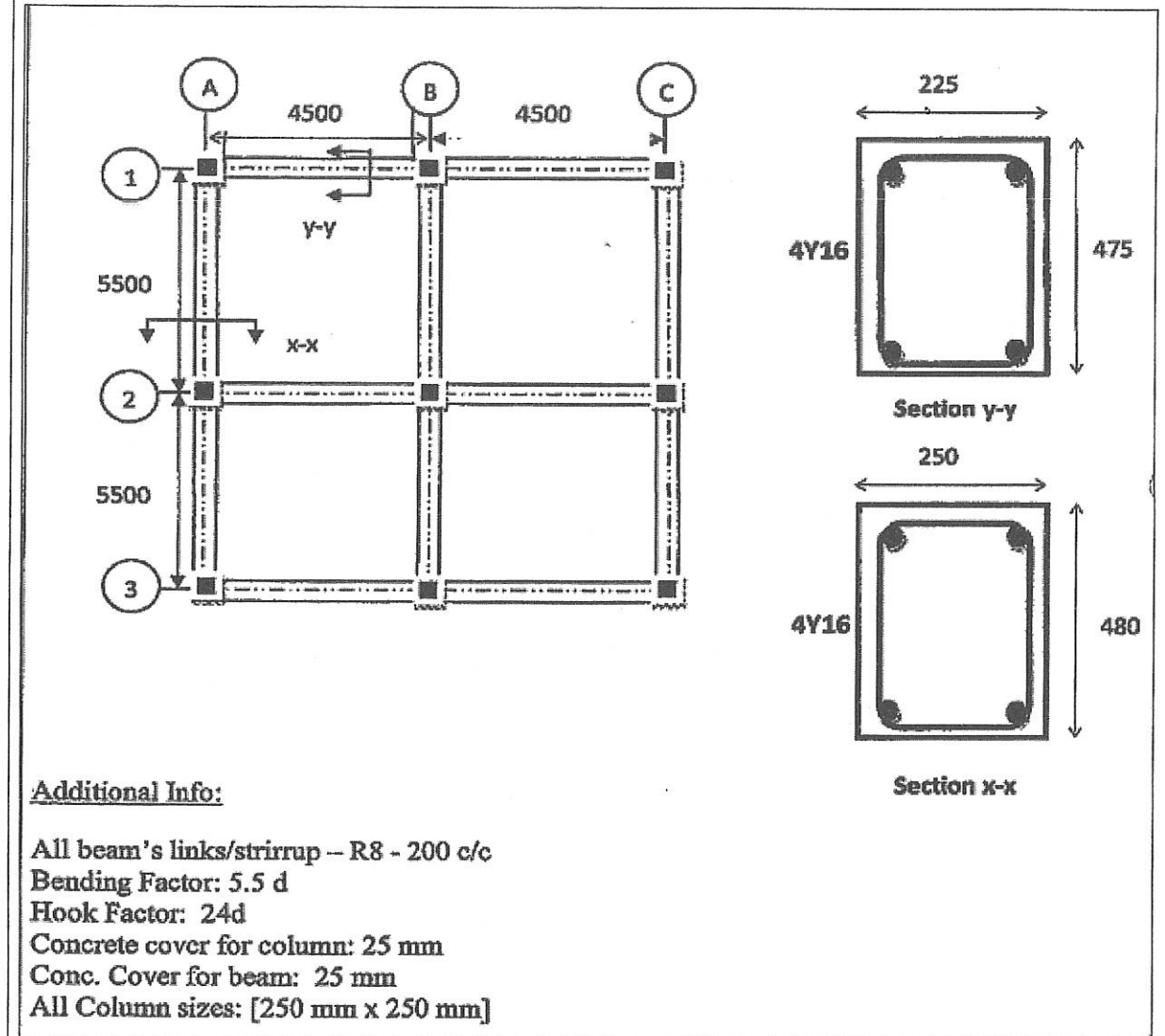


Figure B4(a): Reinforced concrete beam

Rajah B4(a): Rasuk konkrit bertetulang

[10 marks]

[10 markah]

CLO2
C3

(c) By referring to Figure B4(b) and Table B4(b), carry out taking off the quantity of external walls finishes.

Dengan merujuk kepada Rajah B4(b) dan Jadual B4(b), sediakan ukur kuantiti bagi kemasan dinding luar.

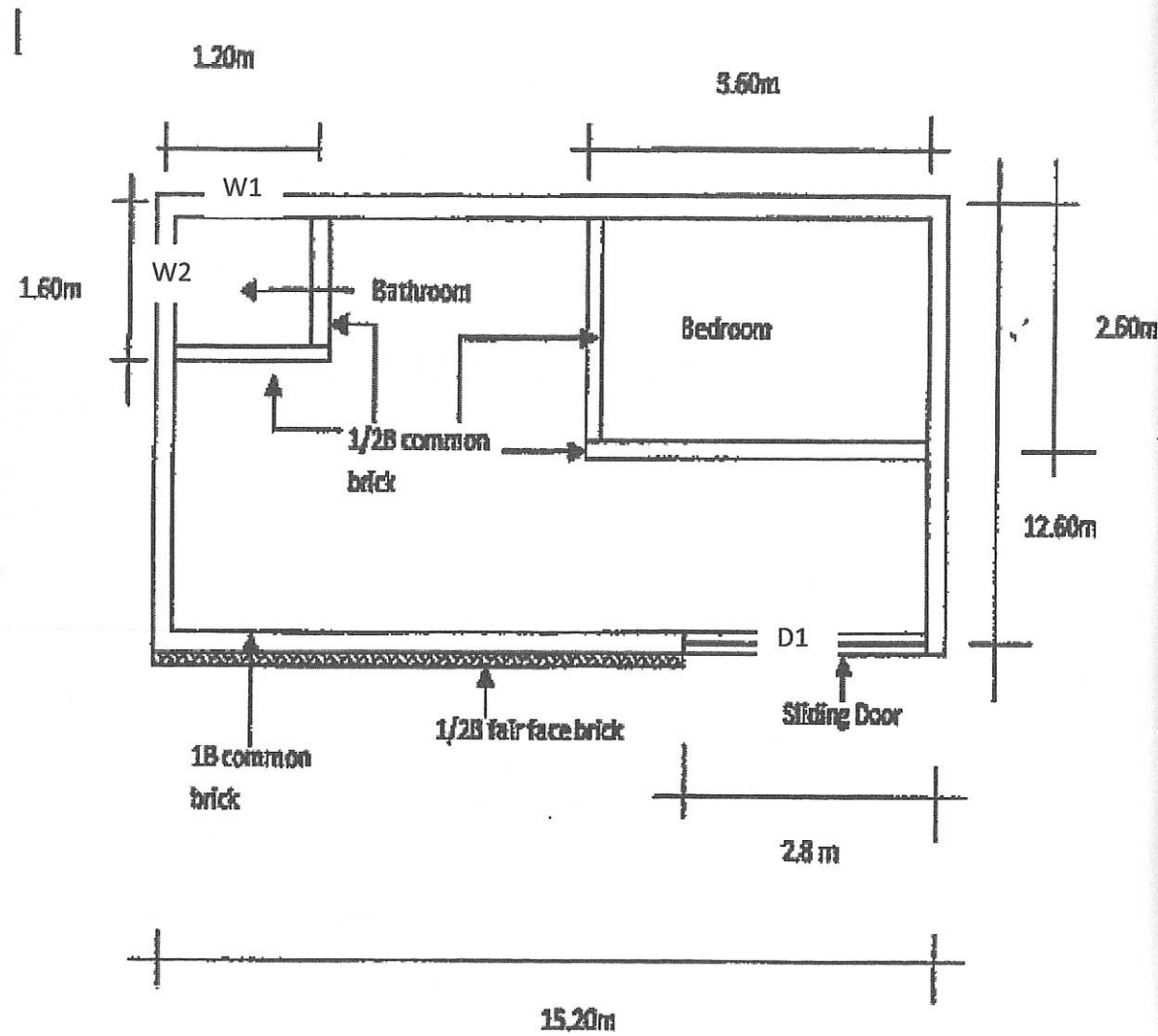


Figure B4(b): Floor Plan of external wall finishes
Rajah B4(b):Pelan lantai kemasan dinding luar

Table B4(b): Door/Window/Column (for deduction)

Jadual B4(b): Pintu/Tingkap/Tiang (untuk kerja-kerja penolakan)

Type Jenis	Size Saiz	Quantity Kuantiti
W1	1200mm x 800mm	1no.
W2	1600mm x 1800mm	1no.
D1	2800mm x 2100mm	1no.
Column	150mm x 150mm	4no.
Building height	2800m	
Wall finishes	English bond with brick reinforcement at every 4 th course	

[10 marks]

[10 markah]

SOALAN TAMAT

DCC2073-Contract & Estimating

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

SLIP SORT FORM

DCC2073-Contract & Estimating

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

SLIP SORT FORM

DCC2073-Contract & Estimating

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

SLIP SORT FORM

DCC2073-Contract & Estimating

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

SLIP SORT FORM

