



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

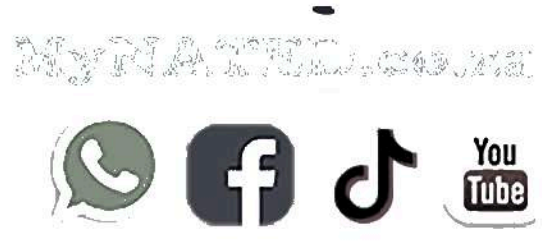
NASIENRIGLYN

NASIONALE SERTIFIKAAT

LOGIKASTESELS N2

1 April 2025

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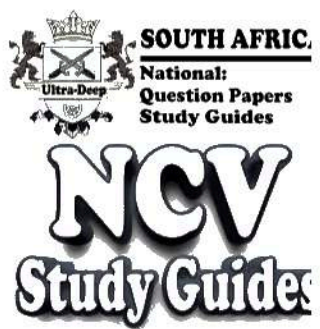
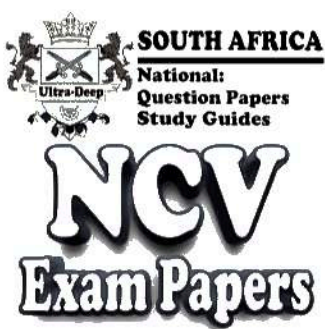


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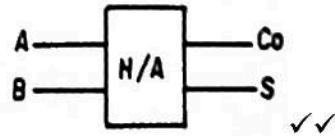
MyNATED.co.za a

e

VRAAG 1

1.1 1.1.1 Halwe opteller✓

1.1.2



1.1.3

A	B	S	Gesamentlik
0	0	0	0
0	1	1	0
1	0	1	0
1	1	0	1
✓	✓	✓	✓

1.2 1.2.1

	1	0	0	0	1	
	1	1	0	0	0	✓
+	0	1	0	0	0	
	1	1	0	0	1	✓

(7)

1.2.2

1	0	0	0	1	1	1	✓
1	1	1	0	0	0	0	✓
1	0	0	0	↓	↓	↓	
0	1	1	0	0	↓	↓	✓
	1	0	0	0	↓	↓	
	0	1	0	0	0	0	✓
		1	0	0	0	0	
		0	0	0	0	0	

(2)

(4)

1.2.3

		1	0	1	0	1	
	X			1	0	1	
		1	0	1	0	1	✓
		0	0	0	0		✓
1		0	1	0	1		✓
1	1	0	1	0	0	1	✓

(4)

1.3 $110001_2 = 2^5 + 2^4 + 2^0$
 $= 32 + 16 + 1 \checkmark$
 $= 49_{10} \checkmark$ (2)

$111_2 = 2^6 + 2^5 + 2^3 + 2^0$
 $= 4 + 2 + 1 \checkmark$
 $= 7_{10} \checkmark$ (2)

$1101001_2 = 2^6 + 2^5 + 2^3 + 2^0$
 $= 64 + 32 + 8 + 1 \checkmark$
 $= 105_{10} \checkmark$ (2)

1.4.1 Waar
 1.4.2 Onwaar

(2 × 1) (2)
[25]

VRAAG 2

2.1 2.1.1 B
 2.1.2 D
 2.1.3 A
 2.1.4 C
 2.1.5 A
 2.1.6 C
 2.1.7 B
 2.1.8 A
 2.1.9 D
 2.1.10 B (10 × 1) (10)

2.2 2.2.1 426 tot sy binêre XS3-ekwivalent.

4	2	6
↓	↓	↓
0100	0010	0110
+11	+11	+11
0111 ✓	0101 ✓	1001 ✓

OF

4	2	6
+3	+3	+3
7	5	9
↓	↓	↓
0111	0101	1001

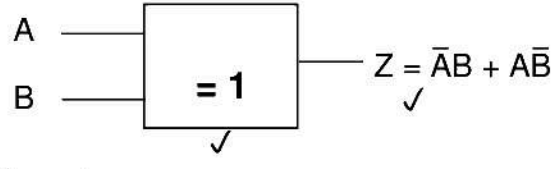
(3)

2.2.2 110011110011 2421 BCD-kode na sy desimale ekwivalent.

2421	2421	2421
1100	1111	0011
↓✓	↓✓	↓✓
6	9	3

(3)

2.3 OF-hek
NEN-hek
XOF-hek (2)

2.4 2.4.1  (2)

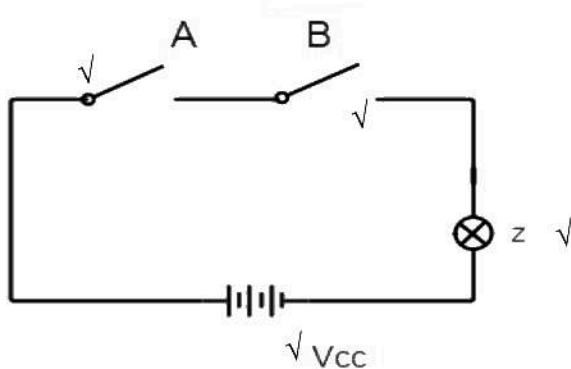
2.4.2

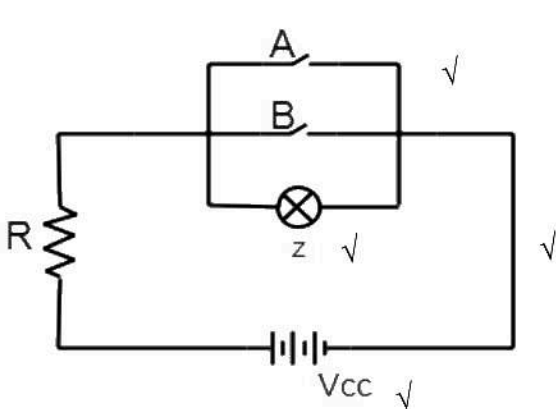
A	B	Z
0	0	0
0	1	0
1	0	0
1	1	1

 (3)

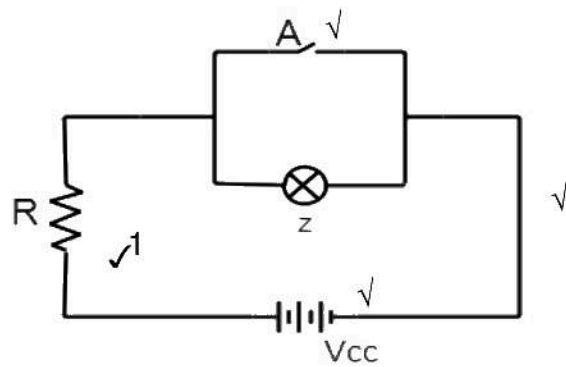
2.5 EN
OF
NOF-hekke (Enige 2 x 1) (2)
[25]

VRAAG 3

3.1 3.1.1 

3.1.2 

3.1.3



(2 × 3) (6)

3.2

A	B	Z
0	0	0
0	1	0
1	0	0
1	1	1

✓
✓

A	B	Z
0	0	1
0	1	0
1	0	0
1	1	0

✓
✓

A	Z
0	1
1	0

✓

(5)

3.3

3.3.1

Hek **C** = OF-hek ✓
 Hek **D** = NOF-hek ✓
 Hek **E** = NIE-hek of omskakelaar ✓

(3 × 1) (3)

3.3.2

$X = 1 + 1 = 1$ ✓
 $Y = 1 + 0 = 1$ ✓
 $Z = 0$ ✓

(3)

3.4

Hoofgeheue – is 'n tydelike of vlugtige geheue ✓ wanneer krag afgeskakel word of rekenaar herbegin, dan kan data nie in die geheue gestoor word nie. ✓

Sekondêre geheue – is 'n permanente of nie-vlugtige geheue ✓ en dit is in staat om data te behou wanneer die krag afgeskakel word. ✓

(4)

3.5 Belangrikste geheue voorbeelde:

- RAM ✓
- Kas ✓
- CMOS

(Enige 2 × 1) (2)

Sekondêre geheue voorbeelde:

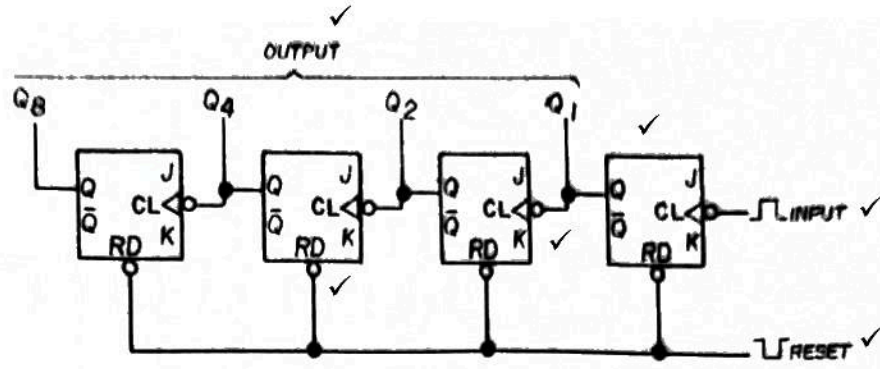
- Ponskaarte ✓
- Magnetiese band ✓
- CD-ROM,
- Stywe skyf
- Diskette-skyf
- Flitsaandrywer
- DVD
- Hardeskyf

(Enige 2 × 1) (2)

VRAAG 4

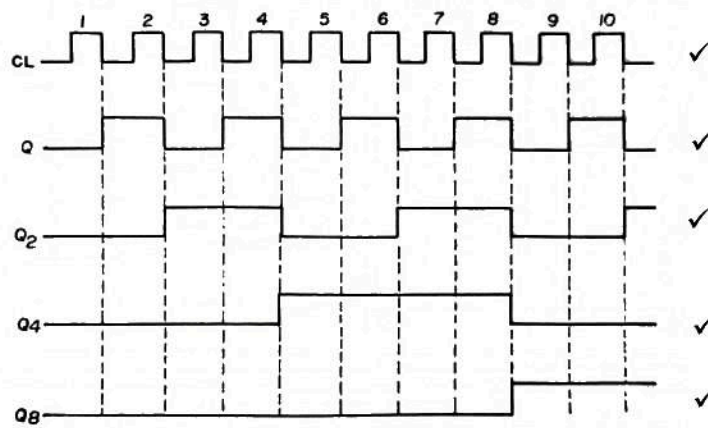
- | | | | |
|-----|--|-----------|-------------|
| 4.1 | 4.1.1 | Oop ✓ | (1) |
| | 4.1.2 | Gesluit ✓ | (1) |
| | 4.1.3 | Gesluit ✓ | (1) |
| | 4.1.4 | Gesluit ✓ | (1) |
| | 4.1.5 | Oop ✓ | (1) |
| | 4.1.6 | Oop ✓ | (1) |
| 4.2 | Waar | | (1) |
| 4.3 | Dit word reeksteller genoem omdat die uitset van die eerste wipkring 'n horlosie van die volgende wipkring is. ✓ | | (1) |
| 4.4 | Op 'n parallel-in-parallele-uit-skuifregister word die insette gelyktydig ingevoer. ✓
In 'n serie-in-parallele-uit verskuiwingsregister word die insette een vir een ingevoer. ✓ | | (1 × 2) (2) |
| 4.5 | <ul style="list-style-type: none"> • 'n JK-wipkring het meer beheeropsies as 'n D-wipkring. ✓ • 'n JK-wipkring kan as 'n D-wipkring funksioneer deur JK saam te bind en die nodus 'D' te noem. ✓ | | (2) |
| 4.6 | Sinchrone tellers is vinniger ✓ omdat wipkringe gelyktydig of parallel geklok word. ✓ | | (2) |

4.7 4.7.1



(6)

4.7.2



(5)

[25]

TOTAAL: 100