CS2100 Computer Organisation

Midterm Test — Answer Sheet (With Answers)

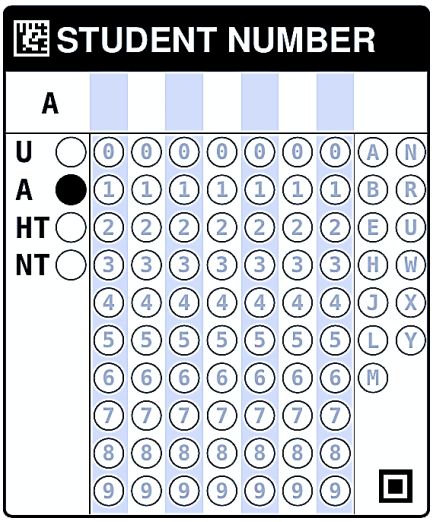
AY2024/25 Semester 2

Time allowed: 1 hour 30 minutes

PLEASE READ THE INSTRUCTIONS IN THE QUESTION PAPER CAREFULLY BEFORE PROCEEDING

Important instructions:

1. Shade and write your Student Number correctly with a pencil (2B or above) on the right.
2. Shade one option for each MCQ in Part A with a pencil (2B or above).
3. For Part B, write your answers within the boxes provided. Anything written outside the boxes will not be graded.
4. You may use pencil to write your answers for Part B.
5. Do not attach any additional sheet to this Answer Sheet; it will be disregarded.



Part A: Multiple Choice Questions (Total: 20 marks)

Q	(A)	(B)	(C)	(D)	(E)
1.	○	○	○	●	○
2.	○	○	○	○	●
3.	●	○	○	○	○
4.	○	○	○	○	●
5.	○	○	●	○	○
6.	○	●	○	○	○
7.	○	○	●	○	○
8.	○	○	○	●	○
9.	○	●	○	○	○
10.	○	●	○	○	○
	(A)	(B)	(C)	(D)	(E)

Q	(A)	(B)	(C)	(D)	(E)
11.	○	○	○	●	○
12.	○	○	●	○	○
13.	○	○	○	○	●
14.	○	○	○	●	○
15.	●	○	○	○	○
16.	○	○	○	●	○
17.	●	○	○	○	○
18.	○	○	○	●	○
19.	○	●	○	○	○
20.	○	○	●	○	○
	(A)	(B)	(C)	(D)	(E)

For Examiner's Use Only

Questions	Marks
PART A	/20
PART B	/20
TOTAL	**/40**

Part B (Total: 20 marks)
Write your answers within the boxes provided. Anything written outside the box will not be graded.

21. [4 marks]

(a) [2]

```
addi $t1 $a0, 40
```

0x **2089 0028**

(b) [2]

```
j label
```

0x **0808 220B**

22. [4 marks]

(a) After executing instruction 2:

$t0 = 0x **FFFFFFF9**
$t1 = 0x **0000000C**

(b) After executing instruction 5:

$t0 = 0x **0000000C**
$t1 = 0x **FFFFFFF9**

23. [6 marks]

❶ (sign-extend output)	0x **FFFF FFE8**
❷ (Add result)	0x **003F FFF4**
❸ (to the PC)	0x **0040 0054**
❹ (Read data 2)	0x **0000 8888**
❺ (ALU result)	0x **1000 FFFC**
❻ (ALU control output)	0b **0010**

24. [6 marks]

$t0 = 0x **FF123456**	(2 marks)
$t1 = 0x **00000034**	(1 mark)
$t2 = 0x **00000078**	(1 mark)
$t3 = 0x **FFFFFFDE**	(1 mark)
$t4 = 0x **FFFFFFF0**	(1 mark)

=== END OF PAPER ===