

CS1231S Discrete Structures Midterm Test — Answer Sheet

AY2023/24 Semester 1

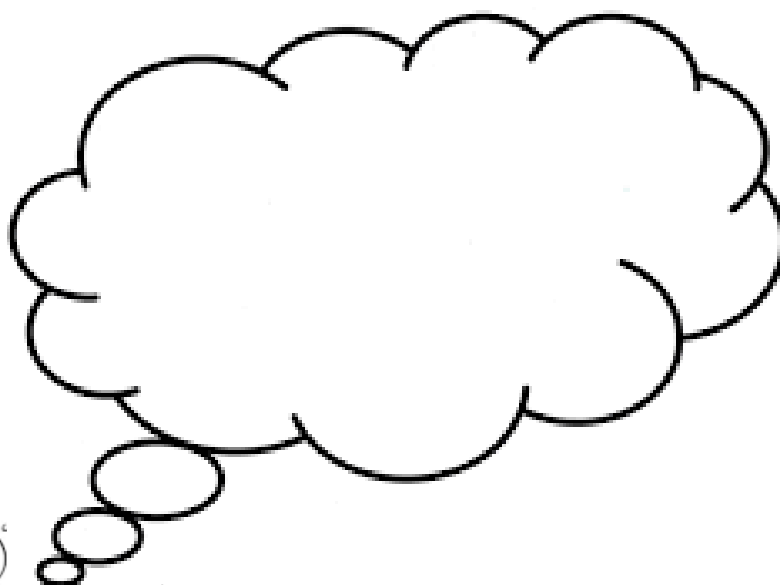
Time allowed: 1 hour 30 minutes

INSTRUCTIONS

1. Write your **Student Number** on the right AND, using pen or pencil, shade the corresponding circle **completely** in the grid for each digit or letter. **DO NOT WRITE YOUR NAME!**
2. Zero mark will be given if you write/shade your Student Number incompletely or incorrectly.
3. Write your Student Number at the top of page 3.
4. This answer sheet comprises **FOUR (4) pages**.
5. All questions must be answered in the space provided; no extra sheets will be accepted as answers.
6. You must submit only this **ANSWER SHEET** and no other documents.
7. An excerpt of the question may be provided to aid you in answering in the correct box. It is not the exact question. You should still refer to the original question in the question paper.
8. You may write your answers using pencil (at least 2B) or pen as long as it is legible (no red ink, please).
9. The maximum mark for this paper is 50.
10. **Marks may be deducted** for (i) illegible handwriting, and/or (ii) excessively long answer.
11. Each multiple choice question is intended to have only one answer. Please shade the appropriate bubble.

STUDENT NUMBER									
A									
U	<input type="radio"/>	0	0	0	0	0	0	0	A N
A	<input checked="" type="radio"/>	1	1	1	1	1	1	1	B R
HT	<input type="radio"/>	2	2	2	2	2	2	2	E U
NT	<input type="radio"/>	3	3	3	3	3	3	3	H W
		4	4	4	4	4	4	4	J X
		5	5	5	5	5	5	5	L Y
		6	6	6	6	6	6	6	M
		7	7	7	7	7	7	7	
		8	8	8	8	8	8	8	
		9	9	9	9	9	9	9	

For Examiner's Use Only		
Question	Marks	Remarks
Q1-15	/ 30	
Q16	/ 6	
Q17	/ 4	
Q18	/ 4	
Q19	/ 6	
Total	/ 50	



Any feeling about this midterm test or CS1231S? This will not be graded! ☺

This page is intentionally left blank.

Student Number: A

--	--	--	--	--	--	--	--	--

Part A: Multiple Choice Questions (Total: 30 marks)Please shade using **pencil** only ONE bubble for each question.

- | | (A) | (B) | (C) | (D) | (E) |
|-------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <hr/> | | | | | |
| 4. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 5. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 6. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <hr/> | | | | | |
| 7. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 8. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 9. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <hr/> | | | | | |
| 10. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 11. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 12. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <hr/> | | | | | |
| 13. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 14. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 15. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <hr/> | | | | | |
| | (A) | (B) | (C) | (D) | (E) |

Part B (Total: 20 marks)

16. [6 marks]

(a)
[2](b)
[2](c)
[2]

17. [4 marks]

(a) $(A_1 \cap A_2) \setminus A_3$
[1](b) $(A_1 \cup A_2) \setminus A_3$
[1](c) $(A_1 \times A_2) \cup A_3$
[1](d) $(A_1 \cup A_2) \times A_3$
[1]

18. [4 marks]

(a) [1] Minimal:

(b) [1] Smallest:

(c) [1] Maximal:

(d) [1] Largest:

19. [6 marks]

(a) [3]

(b) [1]

(c) [2]

=== END OF PAPER ===