

Name: \_\_\_\_\_, ID: \_\_\_\_\_

Q. 1 [3 marks] Show the steps and the final answer in evaluating the following postfix expression using stacks: 2 3 \* 5 4 \* 2 + +

		4		2					
3	*	5	*	20	+	22	+	28	28
2	6	6	6	6	6	6	6	6	28

Q. 2 [3 marks] Show the steps and the final answer in adding numbers 166 and 3,266 using stacks.

6									
6	6	6	6	6	6	6	6	6	6
1	1	1	1	1	1	1	1	1	Stack1
6	6	6	6	6	6	6	6	6	6
2	2	2	2	2	2	2	2	2	Stack2
3	3	3	3	3	3	3	3	3	Stack2
3	3	3	3	3	3	3	3	3	Stack2
3	3	3	3	3	3	3	3	3	Stack2
2	2	2	2	2	2	2	2	2	Result

Q. 3 [4 marks] What are the contents of queue and stack after the following sequence of operations?

- 1) enqueue(30), 2) enqueue(20), 3) push(dequeue()), 4) enqueue(30), 5) push(dequeue()),
- 6) push(20), 7) enqueue(pop())

30	20	30	20	30	20	30	20	30	20	30	20	30	20	30	20	30	20	30	20
F	R	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR	FR
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
(1,2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)

