

ROCHESTER INSTITUTE OF TECHNOLOGY  
DEPARTMENT OF COMPUTER SCIENCE

ADVANCED C++ PROGRAMMING AND DESIGN

FALL 2013

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Score: KEY / 105

KEY

## Long Answers Questions

Answer the questions in the spaces provided on the question sheets. If you run out of room for an answer, continue on the back page.

1. (10 points) Foooo

**Solution:**  
bar

2. What if there were no air?  
(a) (5 points) Describe the effect on the balloon industry

**Solution:** It would be very bad

- (b) (5 points) Describe the effect on the aircraft industry

**Solution:** We would all have to take trains

3. (8 points) Question 1

**Solution:** Solution 1

4. (10 points) If you had to maintain an unsorted collection of data, and you had to insert and remove elements from the middle of the collection, what container would you chose, and why?

**Solution:**

A list would be the container of choice because it efficiently adds elements to the middle of the list. This works because a list actually implements a doubly linked list and no data has to be shifted in order to add elements to the middle

5. (20 points) delete

**Solution:** do I have to

6. (14 points) Complete the following truth table

P	Q	$P \& \& Q$	$P    Q$	$!P$	$!(P \& \& Q)$	$!P    !Q$	$!(P    Q)$	$!P \& \& Q$
T	T							
T	F							
T	T							
F	F							

**Solution:**

P	Q	$P \& \& Q$	$P    Q$	$!P$	$!(P \& \& Q)$	$!P    !Q$	$!(P    Q)$	$!P \& \& Q$
T	T	T	T	F	F	F	F	F
T	F	F	T	F	T	T	F	F
T	T	F	T	T	T	T	F	F
F	F	F	F	T	T	T	T	T

## Short Answer Questions

Write the correct answer in the space provided next to the question. Answers that are not legible or not made in the space provided will result in a 0 for that question.

7. (2 points) In what year did Apollo 11 go to the moon?

7. \_\_\_\_\_ 1969 \_\_\_\_\_

8. (2 points) What... is the air-speed velocity of an unladen swallow?

8. What do you mean? An African or European swallow?

9. (2 points) What is the answer to life, the universe, and everything?

9. \_\_\_\_\_ 42 \_\_\_\_\_

10. (2 points) How long does it take for light to travel from the Sun to the Earth?

10. \_\_\_\_\_ 8 minutes \_\_\_\_\_

11. (2 points) How old do you have to be to drink (legally) in the US? In Canada?

11. \_\_\_\_\_ 21 \_\_\_\_\_

11. \_\_\_\_\_ 18 \_\_\_\_\_

12. (2 points) When did the Cretaceous period end?

12. \_\_\_\_\_ 66 million years ago \_\_\_\_\_

### True/False Questions

Circle either 'True' or 'False' at the begging of the line. If you make an incorrect mark, erase your mark and clearly mark the correct answer. If the intended mark is not clear, you will receive a 0 for that question

13. (1 point) [ **True** / **False** ] A woodchuck CAN chuck wood.
14. (1 point) [ **True** / **False** ] Dogs are better than cats in every way.
15. (1 point) [ **True** / **False** ] The sun appears bigger in the sky because it is closer than the moon.

## Matching Questions

Match the selection on the left with the best answer on the right. Answers that are not legible or not made in the space provided will result in a 0 for that question.

16. (8 points) Match the captical city to the state

- |               |              |               |
|---------------|--------------|---------------|
| A. Harrisburg | <u>  C  </u> | Massachusetts |
| B. Albany     | <u>  D  </u> | New Jersey    |
| C. Boston     | <u>  B  </u> | New York      |
| D. Trenton    | <u>  A  </u> | Pennsylvania  |

## Multiple Choice Questions

Write the *best* answer in the space provided next to the question. Answer that are not legible or not made in the space provided will result in a 0 for that question.

17. (2 points) What class would you use to write data from stderr?

- A. ostream
- B. ifstream
- C. istream
- D. ofstream
- E. fstream

17. \_\_\_\_\_ **A** \_\_\_\_\_

18. (2 points) What class would you use to write data to a file?

- A. ofstream
- B. ifstream
- C. fstream
- D. ostream
- E. istream

18. \_\_\_\_\_ **A** \_\_\_\_\_

19. (2 points) When is it ok to use friends functions in a class definition?

- A. not right
- B. Never
- C. still wrong
- D. other
- E. wrong

19. \_\_\_\_\_ **B** \_\_\_\_\_

20. (2 points) What class would you use to read data from stdin?

- A. istream
- B. ifstream
- C. ofstream
- D. ostream
- E. fstream

20. \_\_\_\_\_ **A** \_\_\_\_\_

21. (2 points) When is it ok to use enemy functions in a class definition?

- A. when you feel like it
- B. sometimes
- C. when the moon is full
- D. on occasion
- E. always

21. E



## Bonus Questions

22. (2 bonus points) A library gained fame by moving which celebrity's book from non-fiction to fiction in 2012?

- A. Lance Armstrong
- B. Beyonce
- C. Mitt Romney
- D. Crocodile Dundee
- E. Rupert Murdoch

22. \_\_\_\_\_ **A** \_\_\_\_\_

23. (2 bonus points) The city of Tumbuktu is in what country?

- A. There is no such city
- B. Mali
- C. France
- D. Mauritania
- E. Morocco

23. \_\_\_\_\_ **B** \_\_\_\_\_

24. (2 bonus points) What is the answer to life, the universe and everything?

24. \_\_\_\_\_ **42** \_\_\_\_\_