The University of Melbourne
Department of Computing and Information Systems

ISYS90088 – Introduction to Application Development
Sample Mid-semester test: Semester 2, 2016

Identical examination papers: None

Exam duration: Forty-five (45) minutes

Reading time: Five (5) minutes

Length: This paper has TWO (2) pages including this cover page (double sided).

Authorized materials: No materials are authorized. Calculators are not permitted.

Instructions to invigilators: Students may not remove any part of the examination paper from the examination room. Students should be supplied with the exam paper and a script book, and with additional script books on request.

Instructions to students: *All questions should be answered* by writing a brief response or explanation on the lined pages in the script book. The reverse side of any page may be used to make rough notes, or prepare draft answers. Please write your student ID below and on your script book. When you are finished, place the exam paper inside the front cover of the script book.

- This test is worth 10 marks, which will count as 10% of your final grade.
- Unreadable answers will be deemed wrong.
- Start your answer to each question on a new page.
- Be sure to clearly number your answers.
- Use a blue or black pen (not a pencil).

Students ID number:

Examiners' use only:

Total [10]

Answer all the questions (10 marks)

Q1 (2 marks): Evaluate each of the following expressions; what is the output in each case?

a. `'{:#^10s}'.format('test')` *(0.5 mark)*
b. `"abcde"[-4:-6:-1]` *(1 mark)*
c. `1==1 or 2>1 and 1>2` *(0.5marks)*

Q2 (3 marks): Rewrite the following program code, replacing the two **while** loops with **for** loops, but preserving the remainder of the original code structure:

```
i = 1
while(i <= 20):
     j = 2
     while(j <= (i/j)):
          if not(i % j): break
          j = j + 1
     if (j > i/j) :
               print (i, "is prime")
     i = i + 1

print ("Good bye!")
```

Q3 (2 marks): You are given a program segment in Python as follows:

```
string = 'this is a test case'
tag = 0
for count in range(len(string)):
    if string[count] in "aeiou":
      tag +=1
print(tag)
```

What does this Python program compute? Explain your answer briefly in a sentence or two. What is the final value of the variable *tag*?

Q4 (3 marks): A word is said to be a palindrome if it can be read the same way from either direction, be it forwards or backwards. Punctuation and spaces between the words or lettering are not allowed For example, 'madam' and 'abba' are palindromes. Write a program in Python that accepts a word as input. Your program must print "True" if the word is a palindrome and "False" if not. To receive full marks, your code must be correct. Make sure that your program is appropriately commented. For example:

```
Enter a word: 'madam'
True

Enter a word: 'abba'
True

Enter a word: 'father'
False
```
