



UTHM

Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2013/2014**

COURSE NAME : C++ PROGRAMMING
COURSE CODE : BWB 10203
PROGRAMME : 1 BWQ
EXAMINATION DATE : JUNE 2014
DURATION : 3 HOURS
INSTRUCTION : ANSWER **FIVE (5)** QUESTIONS IN
PART A AND ALL QUESTIONS IN
PART B

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

PART A

- Q1** What are the difference between machine language and high-level language? (4 marks)
- Q2** Given the radius in inches and price of a pizza, design an algorithm to find the price of the pizza per square inch. (4 marks)
- Q3** Write a statement or a set of statements to accomplish the following task: Sum of odd integers between 1 and 99 using a for statement. Assume the integer variables sum and count have been defined. (4 marks)
- Q4** List the different types of parameter passing techniques. (4 marks)
- Q5** Define operator overloading and function overloading? (4 marks)
- Q6** Differentiate between merge sort and quick sort? (4 marks)
- Q7** How two dimensional arrays are initialized? (4 marks)
- Q8** What is function prototype? Give the syntax of a function prototype with one example. (4 marks)

PART B

- Q9** (a) Explain the Binary search algorithm. (5 marks)
- (b) Assume the following list of keys:

85, 49, 55, 110, 2, 17, 45, 10, 98, 68, 92

This list is to be sorted using the Selection Sort algorithm and using the binary search, how many comparisons are required to find whether the following items are in the list? Show the values of first, last and middle and the number of comparisons of 15, 49, and 98 after the iteration of the loop.

(10 marks)

- Q10** (a) What are the two methods of opening a file? Explain with examples. What is the difference between the two methods? (10 marks)

- (b) What is the output of the following code?

```
#include<iostream>
using namespace std;

void main ()
{
    int arr[] = {10, 20, 30, 40, 50};
    int x, *ptr1= arr; *ptr2=&arr[3];
    x= ptr2 - ptr1;
    cout << x;
}
```

(5 marks)

- Q11** (a) Write a template function that swaps the values of two arguments passed to it. In main (), use the function with integers and characters. (10 marks)

- (b) What is the output of the following C++ code?

```
double salary[5] = {25000, 36500, 85000, 62500, 97000};
double raise = 0.03;

cout<< fixed <<showpoint<<setprecision(2);

for (int i = 0; i<5 ; i++)
    cout<< (i+1)<<" " <<salary[i]<<" " <<salary[i]* raise << endl;
```

(5 marks)

- Q12** An online retailer sells five different products whose retail prices are shown in the following table:

Retail price	Product Number
RM 2.98	1
RM 4.50	2
RM 9.98	3
RM 4.49	4
RM 6.87	5

Write a program that reads a series of pairs of numbers as follows:

- (i) Product number
- (ii) Quantity sold for one day

Your program should use a `switch` statement to help determine the retail price for each product. Your program should calculate and display the total retail value of all products sold last week.

(15 marks)

---END OF QUESTION---