



**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

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

COURSE NAME : COMPUTER TECHNOLOGY  
COURSE CODE : BNR 12103  
PROGRAMME : BNE  
EXAMINATION DATE : DECEMBER 2013 / JANUARY 2014  
DURATION : 3 HOURS  
INSTRUCTION : ANSWER ALL QUESTIONS

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

- Q1** (a) You are an engineer technologist trainee in a computer company. Your supervisor has asked you to explore about the computer and networking.
- (i) Briefly explain the differences between software and hardware in computer. (4 marks)
  - (ii) Briefly explain on Client/Server network. (6 marks)
- (b) A computer network is a group of interconnected computers. There are two topologies to be considered for computer networking setup in a laboratory which are Bus Topology and Mesh Topology. Explain which topology is suitable for the setup. Provide your answer with reasons and suitable diagrams. (9 marks)
- (c) Choose any two (2) of the following computer units and brief each of them.
- (i) Central processing unit (CPU)
  - (ii) Memory unit
  - (iii) Input/Output
- (6 marks)
- Q2** (a) In computer programming, there are terms called *assembler* and *compiler*. Briefly explain each of them. (6 marks)
- (b) C++ programming is an example of high level programming.
- (i) Draw the flowchart for translation process from high level language to machine language (7 marks)
  - (ii) Briefly explain the differences between assembly language and machine language (6 marks)
- (c) Briefly explain the following computer programming terms.
- (i) *A program*
  - (ii) *Programming language*
  - (iii) *Programmer*
- (6 marks)

- Q3** (a) (i) The following computer program has some errors. Identify the errors and rewrite the program.

```

/*
Calculate and display the product of two input values
*/
include <iostream>;
using namespace std;

int main(
{
    int p, /* first input value */
        q, /* second input value */
        multiply /* product of two inputs */

    cout>>"Enter two integer numbers"
    cin>>p
    cin>>q
    cout<< "Multiply = " >>p * q;

    return 0.

```

(8 marks)

- (ii) Draw a full flowchart for the program in question 3(a)(i).

(7 marks)

- (b) Construct C++ code that can give grade based on the given requirements:

```

if student's grade is greater than or equal to 85
    Print "A"
else
    if student's grade is greater than or equal to 70
        Print "B"
    else
        if student's grade is greater than or equal to 60
            Print "C"
        else
            if student's grade is greater than or equal to 40
                Print "D"
            else
                Print "F"

```

(10 marks)

- Q4** (a) You are required by your supervisor to develop C++ based program that may calculate *power* and *voltage* based on the equation below:

$$\text{voltage} = \text{energy} / \text{charge}$$

$$\text{power} = \text{voltage} \times \text{current}$$

*power* – watts, *voltage* – volts, *current* – amperes, *charge* – coulombs, *energy* – joules

- (i) Draw a flowchart for the program based on the given descriptions. (7 marks)
- (i) Develop the program using C++ language. (11 marks)
- (b) Construct sub C++ code that may give output as below: (Hint: Use C++ string)

Output :

z= secondaryschool

z= secondaryschool was fun

(4 marks)

- (c) Construct sub C++ code that may give output as below: (Hint: Use C++ arrays)

Output :

Distance 1: 10

Distance 2: 24

Distance 3: 38

(3 marks)

**END OF QUESTIONS**