UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION

SEMESTER I

SESSION 2012/2013

COURSE NAME	:	OBJECT-ORIENTED PROGRAMMING
COURSE CODE	:	BIC20904
PROGRAMME	:	2 BIS/BIP/BIW/BIM
EXAMINATION DATE	:	DECEMBER 2012 / JANUARY 2013
DURATION	:	2 HOURS 30 MINUTES
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

THIS QUESTION PAPER CONSISTS OF **FIVE (5)** PAGES

SECTION A

Instruction: Answer **ALL** questions.

Q1. Give **THREE (3)** advantages of using object oriented programming.

(6 marks)

Q2. Name and explain **THREE (3)** types of visibility in classes.

(6 marks)

Q3. Derive the output for the program in **FIGURE Q3**

(8 marks)

```
#include<iostream.h>                  void A::Mat1()
class A                                   {
    {                                     cout<<"Result"<<(y+x)<<endl;
    private:                              };
        int x,y;                  void A::Mit2(){
    public:                       cout<<"Result"<<(x-y)<<endl;};
        A();                      void A::Mut3()
        A(int,int);                   {
        void Mat1();                  cout<<"Result"<<(y*x)<<endl;
        void Mit2();                  };
        void Mut3();
    ~A();
    };                            void main ()
                                  {
A::A()                                A a;
    {y=10;x=25;}    ;                 A b(30,15);

A::A(int a,int b)                     a.Mut3();
    {y=a;x=b;}    ;                   a.Mat1();
                                      a.Mit2();
A::~A()                               b.Mat1();
    {cout<<"Delete object.";};        b.Mit2();
                                      b.Mut3();
                                  }
```

FIGURE Q3

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Q4. Define the following terms:
  a) Constructor
  b) Destructor
  c) Encapsulation
  d) Inheritance
  e) Polymorphism

(5 marks)

Q5. Find the error in the program below and rewrite it.

```
//include <iostream.s>
class Student {
      char*name;
      char age;
private:
      Student(int *n, int a) name(n), age(a) { }
      char *getName() { return age; }
      int getAge() { return age; }
}

void class ForeignStudent : public Student {
char *country;
public:
ForeignCountry(int *n, int a, char *c) : Student(n, a),
country(c) { }
char *getCountry() { return country; }
};
bool sameAge(Student s1, Student s2) {
return s1.getAge() == s2.getAge();
}

int main(int argc, char **argv) {
student s1("Jack", 21);
ForeignStudent s2("Steven", 21, "UK");
bool same = sameAge(s1, s2);
}
```

(10 marks)

Q6. Implement class Person with its attributes and methods using C++ programming language, based on **FIGURE Q6.**

(Note: You only have to write the specification of the class.)

(15 marks)

Person
• Name • DateofBirth • Age
• SetName • GetName • SetDateofBirth • GetDateofBirth • FindAge

FIGURE Q6

SECTION B

Q7.   Based on the requirements as stated in **FIGURE Q7,** answer the following questions.

A class is required to print the details of a Valentine Card. To print the card, a user has to key-in the sender and the receiver of the card. The card should consist of the following items:
- The name and address for the Sender and Receiver
- The date of the card is printed
- The message

FIGURE Q7

From the requirements statement above, answer the following questions:

(a)   Produce a diagram for class Card and include the appropriate attributes and methods.

(10 marks)

(b)   Implement the class Card using the C++ programming language.
(Hint: One of the methods in your class Card is Menu.)

(30 marks)

(c)   Implement the driver (main) that will instantiate the object and send the messages.

(10 marks)

- END OF QUESTION -