



UNIVERSITY OF THE PUNJAB

Third Semester – 2019

Examination: B.S. 4 Years Program

Roll No. in Fig.

Roll No. in Words.

PAPER: Object Oriented Programming
Course Code: IT-201/21400 Part-I (Compulsory)

MAX. TIME: 15 Min.
MAX. MARKS: 10

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Signature of Supdt.:

Attempt this Paper on this Question Sheet only.

Please encircle the correct option. Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

Q.1. Encircle the right answer, cutting and overwriting is not allowed. (1x10=10)

1. A class must have a constructor.
 - a) True
 - b) False
2. Class level variable can be accessed without class object.
 - a) True
 - b) False
3. If *ptr* is a pointer than `cout << ptr` will display the address of *ptr*.
 - a) True
 - b) False
4. We can store a double pointer address in a double pointer.
 - a) True
 - b) False
5. An entire structure may not be passed to a function as an argument.
 - a) True
 - b) False
6. A class object consist of
 - a) Private/public members
 - b) Attributes and functions
 - c) Either a or b
 - d) one of them
7. Encapsulation refers to the combining of data and code into a
 - a) Class
 - b) Program
 - c) Object
 - d) None of them
8. If class has only parametrize constructor. Then what will be its default constructor?
 - a) Same parametrize constructor
 - b) A constructor which takes no parameter
 - c) No default constructor.
 - d) None of them.
9. It is good to make getter function
 - a) Const
 - b) Public
 - c) public and const
 - d) None of these
10. We can have multiple
 - a) Default constructor
 - b) Parameterized constructor
 - c) Destructor
 - d) None of these



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PAPER: Object Oriented Programming

Course Code: IT-201/21400 Part – II

MAX. TIME: 2 Hrs. 45 Min.

MAX. MARKS: 50

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q.2. Write short answers to the following questions.

(5x4=20)

I. Write down the output of the following code.

```
#include<iostream>
using namespace std;
class A{
    int i_A;
public:
    A(int x){ i_A = x; }
};

int main(){
    A a;
    cout<<"Hello"<<endl;
    return 0;
}
```

II. What is difference between a Class and Object?

III. Why Operator overloading is used?

IV. Write the output of the following code

```
#include<iostream>
using namespace std;
class A{
public:
    A(){
        cout << "A" << endl;
    }
    ~A(){
        cout << "~A" << endl;
    }
};
class B : A{
public:
    B(){
        cout << "B" << endl;
    }
    ~B(){
        cout << "~B" << endl;
    }
};
int main(){
    B b;
    return 0;
}
```

P.T.O.

Q.3. Long questions.

(7+7+7+9=30)

We are going to create class of Matrix. You have to write the definition of the following function given below in the Matrix class.

```
class Matrix{
private:
    int noOfRows; //Total number of rows
    int noOfColumns //Total number of columns
    int ** data; //Matrix data
public:
    Matrix(int noOfRows, int noOfColumns); // If noOfRows > 0 and noOfColumns
    then assign it and allocate the rows in the heap. Otherwise assign 0 to all.

    void displayData(); // Display all records present in data.

    ~Matrix(); // Deallocate the memory allocated by Matrix.

    Matrix(const Matrix & ref) // copy constructor
};
```

You have to write down the definition of following functions.

1. **Matrix(int noOfRows, int noOfColumns)**
2. **void displayData();** // Display all records present in data.
3. **~Matrix();** // Deallocate the memory allocated by Matrix.
4. **Matrix(const Matrix & ref)** // copy constructor