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Roll Number:

Thapar Institute of Engineering and Technology, Patiala

BE COE/CSE/EC/EI/EE/EM/NC (II Semester) EST
6th June 2022

UTA018: Object Oriented Programming
Time: 02 Hours; MM: 35 (7 marks each)

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★ **NOTE: Solve all the problems in order, otherwise they will not be checked.** New problem, new page. Write the page number of the question attempted on the front of answer sheet. Partially cut answers will not be given partial credit. Plan on the last page before attempting to avoid cutting. Assume all header libraries, *namespace std* are included in all the codes. Assume any missing data.

Q.1 Given 2 classes Fahrenheit and Celsius, their data members and member functions as given below. You need to write code for accomplishing Task 1 and Task 2. *Do not write the entire program but just Task 1 and Task 2. Hint: F = (9C/5) + 32 for conversion.*

```
class Fahrenheit {
  float f;
public:
   Fahrenheit (){}
   Fahrenheit (float x){ f = x;}
   float get_f (){return f;}
   void set_f(float y){f = y;}
};
```

```
class Celsius{
   float c;
 public:
   Celsius () {}
   Celsius (float x){c = x;}
   float get_c(){return c;}
   void set_c(float y){c = y;}
};
```

```
int main(){
        Fahrenheit f1(45), f2;
        Celsius c1(34);
        f2 = c1;          //Task 1: Convert c1 to f2 using type casting operator
        if (f1 < f2)      //Task 2: Overload < operator
                cout<<"f1 is smaller than f2";
        else
                cout<<"f1 is not smaller than f2";}
```

Q.2 Explain the following terms in context to C++ file handling in one line only.

a) ios::out
b) ios::in
c) ios::app
d) ios::ate
e) ios::binary
f) ios::trunc
g) ios::cur

P.T.O

Q.3 Design the int main() function according to *throw* statements given in checkcgpa(intcgpa) function. ***Note**: Generic catch block [catch (...)] should not be the part of the program. Do not rewrite the whole program but just the main().*

```
void checkcgpa(intcgpa)
{
        if(cgpa >= 8)
        throw "very good";
        if(cgpa >=6 && cgpa < 8)
        throw 'h';
        if(cgpa >= 4 && cgpa < 6)
        throw 1.0;
        if(cgpa < 4)
        throw 1;
}
int main()
{ _____ }
```

Q.4 Fill in the blanks in the code of template given below. *Do not re-write the entire code just provide the answers to the blanks 1-7.*

(7 marks)

```
template ___1___
class exam2
{
H a;
X b;
public:
void getdata(___2__ m, ___3___ n){
                a=m;
                b=n;}
void show();
};
template ___4__
void ___5____show(){cout<<a<<endl<<b;}
```

```
int main()
{
   exam2 __6___e1;
   e1.getdata(10, 20.4);
   exam2 __7___e2;
   e2.getdata("hello", 20);
}
```

Q.5 This C++ code is intended to write data to a file "*MyExam.txt*" and then read the content from the same file and display the content on the screen. Assume the text file exists in your system. Find and list all the errors in the given code. *Do not re-write the entire code just specify the errors.*

```
int main(){
   string est;
   fstream iofile("MyExam.txt", ios:out || ios:in);
   iofile<<"UTA018 Object Oriented Programming";
   iofile.seekp(ios::beg,0);
   cin>>est;
   cout<<est;
   close.iofile(); }
```

Roll Number: _____ Group: _____ Name: _____

Thapar Institute of Engineering and Technology, Patiala

BE COE/CSE/EC/EI/EE/EM/NC (II Semester) Quiz-2
6th June 2022

UTA018: Object Oriented Programming
Time: 10 Min; MM: 10

Note: Write the correct option in the box using capital letters only. Answers written inside the box will only be evaluated. Over written answers will not be considered. Do rough work in your answer sheets. Each question is of 2 marks.

Q1	Q2	Q3	Q4	Q5

Q1 What will be the output of the following code?

```
#include <iostream>
using namespace std;
class Exam {
    public:
    virtual void display()=0;
    virtual void show1(){cout<<"Exam is going on ";}
    void show2(){cout<<"I like C++ ";}
};
class EST: public Exam {
    public:
    void display(){cout<<"UTA018 ";}
    void show1() {cout<<"EST is going on ";}
    void show2() {cout<<"I don't like C++ ";}
};

int main() {
    Exam *e1 = new EST;
    e1->display();
    e1->show1();
    e1->show2();
}
```

A. UTA018 Exam is going on Quiz is going on
B. UTA018 EST is going on I like C++
C. UTA018 EST is going on I don't like C++
D. Compile time error

Q2 What will be the output of the following code?

```
#include <iostream>
using namespace std;
class Exam {
    public:
    virtual void display()=0;
    virtual void show1(){cout<<"Exam is going on ";}
    void show2(){cout<<"I like C++ ";}
};
class EST: public Exam {
    public:
    void display(){cout<<"UTA018 ";}
    void show1() {cout<<"EST is going on ";}
    void show2() {cout<<"I don't like C++ ";}
};
class quiz: public Exam {
    public:
    void show1() {cout<<"Quiz is going on ";}
    void show2() {cout<<"I don't like C++ ";}
};

int main() {
    Exam *e1 = new quiz;
    e1->display();
    e1->show1();
    e1->show2();
}
```

A. Quiz is going on I don't like C++
B. Quiz is going on I like C++
C. UTA018 Quiz is going on I don't like C++
D. Compile time error

PTO

Q3 What will be the output of the following code?

```
#include <iostream>
using namespace std;
int main()
{
int x = -1;
try {
        cout << "Inside try, ";
        if (x < 0)
        {
                throw x;
                cout << "After throw, ";
        }
}
catch (int x ) {
        cout << "Exception Caught, ";
}

cout << "After catch, ";
return 0;
}
```

A. Inside try, Exception Caught, After throw, After catch,

B. Inside try, Exception Caught, After catch,

C. Inside try, Exception Caught,

D. Inside try, After throw, After catch,

Q4 What will be the output of the following code?

```
#include <iostream>
using namespace std;
class student{
    public:
        student(){cout<<"student ";}};
class exam: public student {
    public:
        exam(){cout<<"exam ";}};
class project: public exam {
    public:
        project(){cout<<"project ";}};
class result: public exam, public project{
    public:
        result(){cout<<"result ";}};
int main()
{
    result r;
    return 0;
}
```

A. exam project result

B. student exam project result

C. student exam student exam project result

D. None of the above

Q5. What is the validity of template parameters?

A. inside that block only

B. inside the class

C. whole program

D. inside the main class