



UNIVERSITY OF RUHUNA

Faculty of Engineering

End-Semester 2 Examination: March 2026

Module No: EE2201

Module Name: Computer Programming II
Part-A

C-18 (Repeat)

[Part-A + Part-B = 2 hours]

Instructions for candidates

- Answer in the Sheet Provided by putting X mark on the letter: (a), (b), (c), or (d) which corresponds to the correct answer, by using a black or blue pen.
- Question paper contains 40 multiple choice questions.
- Answer all questions. Each question has only one answer.
- Each correct answer carries 0.5 marks.

1. Given the variable `double distance = 42.75;` and assuming `#include <iostream>`, which C++ code produces the console output `Distance: 42.75?`

- (a) `std::cout << "Distance: {distance}";`
- (b) `printf("Distance: %d", distance);`
- (c) `std::cout << "Distance: " << distance;`
- (d) `std::cout << "Distance: " + distance;`

2. What is the exact output of the following C++ code snippet?

```
#include <iostream>
#include <string>

using namespace std;

int main() {
    string title = "Dune";
    string author = "Herbert";
    cout << "Book: {title} by {author}";
    return 0;
}
```

- (a) Book: Dune by Herbert
- (b) The code will not compile.
- (c) Book: DunebyHerbert
- (d) Book: {title} by {author}

3. What will happen if the user inputs "fifty" when the following C++ code is executed?

```
#include <iostream>

using namespace std;

int main() {
    int speed;
    cout << "Enter the speed: ";
    cin >> speed;
    return 0;
}
```

- (a) The program will implicitly convert "fifty" to the integer 50.
 - (b) A compile-time error will prevent the code from executing.
 - (c) The program will crash with a runtime exception.
 - (d) The input stream cin will enter a fail state.
4. What is the output of the following C++ code?

```
#include <iostream>
using namespace std;
int main() {
    double weight = 1.5;
    int items = 6;
    cout << "Total weight: " << weight * items;
    return 0;
}
```

- (a) Total weight: 9.0
 - (b) The code will not compile.
 - (c) Total weight: 9
 - (d) Total weight: weight * items
5. What is the output of the following C++ code?

```
#include <iostream>
using namespace std;
int main() {
    int total_distance = 10;
    int hours = 4;
    cout << "Average speed: " << total_distance * 1.0 / hours;
    return 0;
}
```

- (a) Average speed: 2
- (b) The code will result in a runtime error.
- (c) Average speed: 2.5
- (d) Average speed: 3

6. Which of the following is NOT a fundamental principle of Object-Oriented Programming (OOP)?

- (a) Encapsulation
- (b) Inheritance
- (c) Polymorphism
- (d) Exception Handling

7. What is the primary purpose of a constructor in a class?

- (a) To destroy an object.
- (b) To initialize an object's state when it is created.
- (c) To perform a calculation.
- (d) To define the class's public methods.

8. Which data type is most suitable for storing a value like 'A'?

- (a) string
- (b) int
- (c) char
- (d) bool

9. What value will be assigned to the result variable?

```
int a = 29;  
int b = 4;  
int result = a / b;
```

- (a) 8
- (b) 7.25
- (c) 1
- (d) 7

10. What is the output of the following code snippet?

```
int total = 0;  
for (int j = 1; j < 4; j++)  
{  
    total += j;  
}  
cout << total;
```

- (a) 3
- (b) 10
- (c) 6
- (d) 4

11. What is the output of the following code snippet?

```
int count = 4;
if (count % 2 != 0)
{
    cout << "Odd";
}
else if (count < 5)
{
    cout << "Even and Low";
}
else
{
    cout << "Even and High";
}
```

- (a) Odd
- (b) Even and High
- (c) No output
- (d) Even and Low

12. What value will be assigned to the status variable?

```
#include <string>
bool hasID = false;
bool hasTicket = true;
string status = (hasID && hasTicket) ? "Enter" : "Wait";
```

- (a) true
- (b) "Enter"
- (c) false
- (d) "Wait"

13. What is the output of this code snippet?

```
char grade = 'B';
switch (grade)
{
    case 'A': cout << "Excellent"; break;
    case 'B': out << "Good"; break;
    case 'C': cout << "Average"; break;
    default: cout << "Fail"; break;
}
```

- (a) Excellent
- (b) Compile Error
- (c) Good
- (d) Average

14. What is the output of the following code snippet?

```
for (int k = 2; k < 5; k++)
{
    cout << k;
}
```

- (a) 2345
- (b) 1234
- (c) 234
- (d) The code produces a compile error.

15. How many times will the following loop print "Hello"?

```
int attempts = 5;
while (attempts > 10)
{
    cout << "Hello\n";
    attempts++;
}
```

- (a) 1 time
- (b) 5 times
- (c) 0 times
- (d) Infinitely

16. What is the output of this code that uses a do-while loop?

```
int value = 8;
do
{
    cout << value;
    value++;
} while (value < 8);
```

- (a) Nothing
- (b) 8
- (c) 9
- (d) The code produces a compile error.

17. What is the final value of sum after the range-based for loop?

```
int scores[] = { 3, 5, 7 };
int sum = 0;
for (int s : scores)
{
    sum += s;
}
```

- (a) 0
- (b) 15
- (c) 357

(d) 12

18. What is the output of the code below, which uses a continue statement?

```
for (int n = 0; n < 4; n++)  
{  
    if (n == 1) continue;  
    cout << n;  
}
```

(a) 0123

(b) 023

(c) 0

(d) 123

19. What is the output of the following code snippet?

```
for (int m = 1; m <= 5; m++)  
{  
    if (m == 4)  
    {  
        break;  
    }  
    cout << m;  
}
```

(a) 1234

(b) 45

(c) 12345

(d) 123

20. What is the output of the following code snippet?

```
#include <vector>  
#include <iostream>  
vector<int> data = { 10, 20, 30, 40 };  
cout << data[data.size() - 1];
```

(a) 30

(b) 40

(c) 10

(d) An exception is thrown.

21. What will be the final value of total?

```
#include <vector>  
vector<int> prices = { 15, 35 };  
int total = 0;  
for (size_t idx = 0; idx < prices.size(); idx++)  
{  
    total += prices[idx];  
}
```

- (a) 15
- (b) 50
- (c) 0
- (d) 35

22. What is the output of the following C++ code snippet?

```
#include <iostream>
int main() {
    int base = 10;
    int height;
    int area = base * height;
    cout << area;
    return 0;
}
```

- (a) 0
- (b) 10
- (c) Undefined or unpredictable behavior
- (d) The code will not compile.

23. Which of the following lines correctly initializes a C-style integer array named temps with the values 28, 30, and 32?

- (a) `int temps = {28, 30, 32};`
- (b) `int[] temps = {28, 30, 32};`
- (c) `int temps[] = {28, 30, 32};`
- (d) `int temps[3] = (28, 30, 32);`

24. What is the output of the following code snippet?

```
class Laptop
{
public:
    int ram = 16;
};

// Inside main()
Laptop myLaptop;
cout << myLaptop.ram;
```

- (a) 0
- (b) 16
- (c) Nothing is printed.
- (d) Compile-time error

25. What is the output of the following code snippet?

```

class Gadget
{
public:
    string type;
    Gadget(string t) : type(t) {}
};

// Inside main()
Gadget g1("Phone");
cout << g1.type;

```

- (a) null
- (b) "" (empty string)
- (c) Phone
- (d) Compile-time error

26. What is the output of the following C++ code snippet?

```

class Ticket
{
private:
    double cost;
public:
    void setCost(double c) { cost = c; }
    double getCost() const { return cost; }
};

// Inside main()
Ticket t;
t.setCost(45.50);
cout << t.getCost();

```

- (a) null
- (b) 45.50
- (c) An error occurs
- (d) 0.0

27. What happens when you try to compile the following C++ code?

```

class Vault
{
private:
    double balance = 1000.0;
};

// Inside main()
Vault myVault;
cout << myVault.balance;

```

- (a) It prints 0.
- (b) It causes a compile-time error.

- (c) It prints 1000.0.
- (d) It throws a runtime exception.

28. What is the output of the following C++ code snippet?

```
class Notifier
{
public:
    string Alert(string msg)
    {
        return "Alert: " + msg;
    }
};
```

```
// Inside main()
Notifier n;
cout << n.Alert("System");
```

- (a) Alert: System
- (b) System
- (c) Alert System
- (d) The code will not compile.

29. What is the output of the following code snippet, demonstrating pass-by-value?

```
struct Circle { int radius; };
void UpdateRadius(Circle c) { c.radius = 20; }
```

```
// Inside main()
Circle myCircle = { 8 };
UpdateRadius(myCircle);
cout << myCircle.radius;
```

- (a) 20
- (b) 0
- (c) 8
- (d) Compile-time error

30. What is the output of the following code snippet, demonstrating pass-by-reference?

```
void TripleValue(int& val) { val *= 3; }
```

```
// Inside main()
int score = 4;
TripleValue(score);
cout << score;
```

- (a) 4
- (b) 0
- (c) 12

(d) Compile-time error

31. What is the output of the following C++ code snippet using pass-by-reference?

```
void GetSensorData(string& sensor, int& reading)
{
    sensor = "Pressure";
    reading = 105;
}

// Inside main()
string sensorName;
int sensorValue;
GetSensorData(sensorName, sensorValue);
cout << sensorName << ": " << sensorValue;
```

- (a) : 0
- (b) Pressure: 105
- (c) Compile-time error
- (d) Runtime error

32. What is the output of the following C++ code snippet involving pointers?

```
int alpha = 45;
int* p = &alpha;
*p = 90;
cout << alpha;
```

- (a) 45
- (b) 0
- (c) 90
- (d) The memory address of alpha

33. What will be the final value of myAcc.getBalance() after the following code executes?

```
class Account
{
private:
    int balance;
public:
    Account() : balance(0) {}
    int getBalance() const { return balance; }
    void deposit(int amount) {
        if (amount > 0) balance = amount;
    }
};

// Inside main()
Account myAcc;
myAcc.deposit(100);
myAcc.deposit(-50);
cout << myAcc.getBalance();
```

- (a) -50
- (b) 100
- (c) 0
- (d) 50

34. In C++, what is the primary purpose of a pointer variable?

- (a) To store a duplicate copy of another variable's value.
- (b) To hold the memory address of another variable.
- (c) To keep track of how many times a variable is accessed.
- (d) To store the name of a variable as a string.

35. What is the output of the following nested loop?

```
for (int x = 1; x <= 2; x++) {
    for (int y = 0; y < 2; y++) {
        cout << x << y << " ";
    }
}
```

- (a) 10 11 20 21
- (b) 11 12 21 22
- (c) 01 02 11 12
- (d) 10 20 11 21

36. What is the output of the following C++ code snippet involving pointer arithmetic?

```
int values[] = {5, 15, 25};
int* p = values;
p++;
cout << *p;
```

- (a) 5
- (b) 25
- (c) 15
- (d) A memory address

37. The principle of hiding the internal implementation details of a class from the outside world is known as:

- (a) Inheritance
- (b) Polymorphism
- (c) Encapsulation
- (d) Abstraction

38. Which of the following is a fundamental rule for using references in C++?

- (a) They can be declared and then assigned a value later in the code.

- (b) They must be initialized at the time of declaration.
- (c) They use the `->` operator to access members.
- (d) They can be reassigned to a different variable after being initialized.

39. What is the output of the following C++ code snippet, which demonstrates "object slicing"?

```
class Animal {
public:
    void makeSound() {cout << "Generic Sound"; }
};

class Dog : public Animal {
public:
    void makeSound() {cout << "Woof"; }
};

// Inside main()
Dog myDog;
Animal myAnimal = myDog; // Object is copied by value
myAnimal.makeSound();
```

- (a) Woof
- (b) Generic Sound
- (c) A compile-time error occurs.
- (d) A runtime error occurs.

40. What is the output of the following C++ code snippet, which demonstrates polymorphism?

```
class Employee {
public:
    virtual string getRole() { return "Staff"; }
    virtual ~Employee() {} // Good practice for base classes
};

class Manager : public Employee {
public:
    string getRole() override { return "Director"; }
};

// Inside main()
Employee* e = new Manager();
cout << e->getRole();
delete e;
```

- (a) Staff
- (b) StaffDirector
- (c) Director
- (d) A compile-time error.