



BRAINWARE UNIVERSITY

Term End Examination 2023-2024

Programme – M.Sc.(MATH)-2023

Course Name – Computer Programming

Course Code - MSCM(CS)201

(Semester II)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

(i) Select the correct option from the following. _____ are tokens in C.

- a) Keywords
- b) Variables
- c) Constants
- d) All of these

(ii) Identify the output of the following code:

```
void main()  
{  
int num1 = 8;  
int num2 = 7;  
int result = num1 - num2;  
printf("%d", result);  
}
```

- a) 15
- b) 0
- c) 1
- d) -1

(iii) Identify the correct example of exit control loop from the following:

- a) for
- b) while
- c) do-while
- d) continue

(iv) Identify the correct output of the following C code: `int main() {
int array[4]={1,2,3,4};
printf("%d",*array);
}`

- a) 1
- b) Compile time error
- c) Some garbage value
- d) Undefined variable

(v) Select the correct answer. The size of data type float in bytes is ____

- a) 1
- b) 2


```
    printf(" %d ",(a<b)?1:0);  
}
```

3. Describe about the character set with examples. (3)
4. Describe the increment and decrement operator shortly. (3)
5. Evaluate the value of $\int_1^2 x dx$ by trapezoidal rule for $n = 8$ using MATLAB programming. (3)
6. Recommend a MATLAB program to solve the following ODE: (3)

$$\frac{dy}{dx} = \cos x + \sin x, \quad y(0) = -1.$$

OR

Evaluate a program in C to read three values using scanf statement and print the average of them. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Write down about formatted input functions. (5)
8. Write a program in C to check whether a year is leap year or not. (5)
9. Analyse about the components MATLAB language. (5)
10. Evaluate a program to find the reverse of a given number (e.g. 2365 is reverse of 5632). (5)
11. Conclude about the implicit type conversion in expression. (5)
12. Evaluate a program using the syntax of nesting of if-else statement. (5)

OR

Conclude about single character constants. (5)

11. Write an example of a left ideal which is not an ideal of a ring. (5)

12. If G be a group of order p^r where p is a prime and r is a positive integer, then justify that G has a non-trivial center. (5)

OR

If $(\mathbb{R}, +, \cdot)$ be a ring such that $(\mathbb{R}, +)$ is a cyclic group, justify that the ring is commutative. (5)
