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4 SEM TDC MTH M 1 (A)

2022

(June/July)

MATHEMATICS

(Major)

Course : 401

(A : Computer Programming)

Full Marks : 50

Pass Marks : 15

Time : 2½ hours

*The figures in the margin indicate full marks
for the questions*

- | | | |
|--------|--|---|
| 1. (a) | Define algorithm. | 2 |
| (b) | Write any one key word. | 1 |
| (c) | Blank space is a character. State true or false. | 1 |
| (d) | Describe primary data type. | 3 |
| (e) | Write three rules for defining a variable. | 3 |

Or

Draw the flowchart to solve a linear equation.

2. (a) Write the complement of $>$. 1
(b) Write the equivalent form of $x > y$. 1
(c) Describe conditional operator. 2
(d) Write all relational operators with their meaning. 3

Or

Describe bitwise operators.

3. (a) State the error(s) if any in the input statement
`scanf (\n"%f, boof)` 2
(b) Distinguish between %f and %e. 2
(c) Describe the header file stdio.h. 3

Or

Write a program to calculate the area of a circle.

4. (a) Simplify the logical expression
`!(x + y == z) && !(z > 6)` 2
(b) Write the value of x when the following segment is executed : 3

```
int x = 10, y = 15;  
x = (x < y) ? (y + x) : (y - x);
```

- (c) Describe nested if...else statement. 3

Or

Write a program which reads a student's marks in 3 tests and then prints 1 if the student is passed, otherwise zero.

5. (a) Find the error(s) in the statement

```
int num[3]={1; 2; 3} 1
```

- (b) Write about the type of error if $x[i][j]$ is written as $x[i, j]$. 1

- (c) Write the output of the following program : 4

```
main ()
{
    int m[] = {1, 2, 3, 4, 5}
    int x, y = 0;
    for (x = 0; x < 5; x++)
        y = y + m[x];
    print ("%d", y);
}
```

- (d) Write a program to read a matrix and print it. 4

Or

Write a program to compute scalar product of two vectors.

6. (a) Describe return statement. 2
- (b) Write the three elements of user-defined functions. 3
- (c) Describe function call of various forms. 3

Or

Write a program to solve a quadratic equation.
