

Total No. of Printed Pages—4

4 SEM TDC MTH M 1 (A)

2018

(May)

MATHEMATICS

(Major)

Course : 401

(A : Computer Programming)

Full Marks : 50

Pass Marks : 20/15

Time : 2½ hours

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

1. (a) State True or False : 1
An identifier may be a keyword.
- (b) Find the error in the variable name
'num\$k', if any. 1
- (c) Write the names of different data types. 1
- (d) Write an algorithm to solve the equation
 $ax + b = 0$, $a, b \in R$. 2

(2)

- (e) Define floating-point constant.
- (f) Write the results of the variables c , d and x in C program of the following :

float a , b ; int c , d ; float x ;

$a = 23.0$; $b = 7.0$;

$c = a / b$;

$d = a * b$;

$x = a / b$;

Or

Draw the flowchart to compute simple interest.

2. (a) Write the value of the relational expression $(8.7 <= 6)$.
- (b) Write the equivalent relational operator for $!(x == y)$.
- (c) Write the difference between prefix operator $++m$ and postfix operator $m++$.
- (d) Describe the logical operators $\&\&$, $||$ and $!$.

Or

Write a program to compute the surface area of a cube.

8P/515

(Continue)

(3)

3. (a) Write the printf statement to get print 'my college'. 1
- (b) Write the general form of scanf function and explain various format string of it. 1+2=3

- (c) Write a program to compute the volume of a sphere. 3

Or

Write a program to sum the digits of a four-digit number.

4. (a) Write the C programming statements using if ... else to compute : 2

$$y = 2x^2 + 3x + 4, \text{ if } D \neq 0$$

$$= 0, \text{ if } D = 0$$

- (b) Explain 'for' construct. 3

Or

Write a program to check whether a number is prime or not.

- (c) Write a program which reads n students' marks in a test and then calculates the average of the passed students. Pass mark is 30. 3

Or

Write a program to evaluate the sum of the series $1 + x + x^2 + \dots + x^{19}$.

8P/515

(Turn Over)

5. (a) Find out the errors in
- (i) `int a [1.972];`
 - (ii) `int a ['ROM'];`
- (b) Write the various ways of initialization of one-dimensional arrays.
- (c) Write a program to compute dot product of two vectors.

Or

Write a program to obtain the transpose of a matrix.

6. (a) Write one advantage of the use of function.
- (b) Write one difference between global and local variables.
- (c) Write two rules for defining function.
- (d) Write a program to find the maximum of three integers using functions.

Or

Write a program to calculate factorial of an integer using function.
