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Paper Id: | 1 | 4 | 0 | 1 | **Roll No.** | | | | | | | | | | | |

M.C.A.
(SEM I) THEORY EXAMINATION 2017-18
COMPUTER CONCEPTS & PRINCIPLES OF PROGRAMMING

Time: 3 Hours ***Total Marks: 70***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.
2. Any special paper specific instruction.

SECTION A

1. Attempt *all* questions in brief. 2 x 7 = 14

a) Differentiate between constant and variable.
b) Arrange the following operators in the increasing order of precedence
++ , && , == , %
c) Discuss = and == operator with example.
d) Give the output of following code

```
Inta,b=10;
a=++b+b++;
printf("%d,%d",a,b) ;
```

e) How while and do while loops are different? Discuss with example.
f) What do you understand by return type of a function?
g) Write short note on truncation.

SECTION B

2. Attempt any *three* of the following: 7 x 3 = 21

a. Differentiate primitive, derived and user defined data types in C. Draw a table of different data types used in C along with their size, range, format specifier and use.
b. What are the features of a good algorithm? How an algorithm is differ from program? Write an algorithm to find the root of a quadratic equation.
c. Categorize the operators used in C in unary. Binary and ternary along with suitable examples. Also discuss operator precedence and associativity of different operators.
d. Give the restriction of switch case. Write a program in C for calculator using switch case.
e. Discuss various parameter passing strategies along with example.

SECTION C

3. Attempt any *one* part of the following: 7 x 1 = 7

(a) Explain in detail different generations of computer languages.

(b) Write short notes on
I) Assembler
II) Interpreter
III) Compiler
IV) Linker
V) Loader

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4. Attempt any *one* part of the following: 7 x 1 = 7

(a) Differentiate between bottom up and top down design. Also differentiate between system software and application software.

(b) Write short notes on

I) Header files
II) C – token
III) Format specifier
IV) Keywords
V) Identifiers

5. Attempt any *one* part of the following: 7 x 1 = 7

(a) Write a program in C to find the greater number between two given numbers using conditional operator.

(b) What do you understand by bitwise shift operator.Discuss bitwise left shift and right shift operators with example.

6. Attempt any *one* part of the following: 7 x 1 = 7

(a) Write a program in C to print Fibonacci series up to given number of steps.

(b) Write a program in C to calculate sum of digits of a given number.

7. Attempt any *one* part of the following: 7 x 1 = 7

(a) Write a program in C to find the greatest common deviser (GCD) of two given numbers.

(b) Discuss different storage classes used in C.

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