

M. G. K. V. P. University, Varanasi
B.C.A. (Ist – Semester) Examination, 2017

Paper II : Programming Principles of Algorithm (BCA 102)

Note : Attempt any five questions. All questions carry equal marks.

Note : The answer to short questions should not exceed 200 words and the answer to long questions should not exceed 500 words.

1. Define the following with examples : 3 × 5 = 15
 - (a) Tokens
 - (b) Bitwise Operators
 - (c) Escape Sequences
 - (d) Switch Statement
 - (e) Size of Operator
2. Write a C program to compute upto n terms the sum of the AP consisting of the first N natural numbers. The value of n is to be accepted by the user at runtime. 15
3. Write a C language program for computing the GCD of two integers (m, n) by : 7 + 8
 - (a) Recursion Technique
 - (b) Iteration Technique
4. (a) For each statement below, assume that $y = 100$ before the execution of the statement. In each case, what is the value of x after execution : 6
 - (i) $x = --y * 4$
 - (ii) $x = y = y++$
 - (iii) $x = y == y++$
 - (b) Create variables capable of storing the following : 6
 - (i) 15
 - (ii) 15.899
 - (iii) "O"
 - (iv) 1000
 - (v) Scooter Price
 - (vi) 22.3497736
 - (c) What is the difference between floating point numbers and double precision numbers ? Explain with examples where each may be used.
5. (a) Define the SCANF function with examples. 5 + 10
 - (b) What are the different arithmetic, logical and shorthand operators present in C language ? Enumerate with examples.
6. (a) Write a C Program to print out the sum of the fibonacci sequence upto N terms. 7 + 8
 - (b) Write a C program to print out the multiplication Table in the following format :

MULTIPLICATION TABLE

2	3	4	5	6	—	20
4	6	8	10	12	—	40
6	9	12	15	18	—	60
8	12	16	20	24	—	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:
20	30	40	50	60	—	200

7. (a) In a program, store the five vowels 'a', 'e', 'i', 'o', & 'u' in five suitably declared variables. Then print out the contents of the variables in a single line, separated by commas. 8
- (b) What do you understand by the nested IF statement ? How is it different from switch ? Explain with example. 7
8. (a) What is the output from the following program : 8
- ```
main ()
{ int; i,j;
 i=7;
 j=++i;
 print f("i=%d,j=%d/n", i,j);}
```
- (b) Write as C program that repeatedly asks the user to input a negative or positive number and then echoes it, when the value of 0 is entered, the program should terminate.
9. (a) Write a C program to convert a given octal number into hexadecimal. 8 + 7
- (b) Describe and explain the different types of errors that are encountered during the compilation and execution of a C program.

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