Printed Pages: 02   **Sub Code: NAG 205**

Paper Id: | 1 | 8 | 0 | 2 | 2 | 5 | **Roll No.** | | | | | | | | | | |

B TECH
(SEM-II) THEORY EXAMINATION 2017-18
FUNDAMENTALS OF COMPUTER PROGRAMMING

Time: 3 Hours   *Total Marks: 100*

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION – A

1. You are required to answer **all** the parts of this question.   (10 X 1=20)

   (a) What is software? List any 2 application software.
   (b) What is the difference between entry control and exit control loop.
   (c) Evaluate : i) 15^6 ii) 18>>2
   (d) What will be the output of following if i = 5 :: printf("%d%d%d",++i,i++,i++);
   (e) What is union? Explain with syntax.
   (f) What is pointer? How it is initialized?
   (g) What is the difference between loader and compiler?
   (h) List various data type modifier and qualifier.
   (i) What is macro?
   (j) What is the difference between scanf with %S and gets statement.

SECTION – B

2. Attempt any **three** parts of the following: (10×3=30)

   (a) What is Operating system? Explain its services and functions. Discuss any one in detail.
   (b) What is Array? Explain its types.WAP to multiply 2 float matrixes A and B of given order and save the resultant in matrix R
   (c) Convert the following:
       i) $(101101010.1011)_2$ =   (   )$_{10}$
       ii) $(3142.28)_{10}$ =   (   )$_2$
       iii)   2's compliment of 10101101
       iv) $(AC01.B2)_{16}$ =   (   )$_2$
       v) $(10110111.01011)_2$ =   (   )$_{16}$
   (d) WAP to find sum of series $S = x^1 - x^3 + x^5 - x^7$ ….
   (e) Attempt **both** parts:
       i)   Write a program to find the maximum and minimum element of a given array.
       ii)   Explain Classification of computer in detail.

SECTION – C

3. Attempt any **one** part of the following: (10×1=10)

   (a) Explain the difference between nested if, ladder and switch case statement.WAP to find largest of three numbers in C.
   (b) What is Storage class? Explain in detail. Differentiate between auto and static storage class with example.

4. Attempt any **one** part of the following: (10×1=10)

(a) Discuss various calling conventions in C. WAP to swap two values using pointers.
(b) What is data type? List its types. Explain type conversion in detail.

5. Attempt any **one** part of the following: (10×1=10)

(a) What is operator? Explain Bitwise operator in detail.
(b) What is recursion? WAP to print factorial of a given number using recursion.

6. Attempt any **one** part of the following: (10×1=10)

(a) Explain C preprocessor? Define conditional compilation in detail with example.
(b) Create a suitable structure in C language for keeping the records of 200 employees of an organization about their Code, Name, Salary and Department. The program must display the name of employees who earn more than 50,000.

7. Attempt any **one** part of the following: (10×1=10)

(a) Explain dynamic memory allocation? Explain all its functions in detail.
(b) Explain any 5 string handling functions in detail. Give examples of each.