

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: MCA/MSC
BRANCH: MCA/MATHS

SEMESTER : I
SESSION : MO/19

SUBJECT: CA401 PROGRAMMING WITH C

TIME: 3:00 HOURS

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) What is Computer Software and software development method? Write a Problem Analysis Chart (PAC) to find an area of a rectangle where $\text{area} = (1/2) * \text{height} * \text{length}$. Also create IC and IPO. [5]
- Q.1(b) Write down the difference between Algorithm and Flowchart. Write an Algorithm and draw a Flowchart to find Roots of Quadratic Equations $AX^2+BX+C=0$. [5]
- Q.2(a) Compare between Switch statements with nested if statements. Which is more convenient? Justify. Also find the output of following C program fragment. [5]
Int a=1; int b=1;
Int c= ++a || b++;
Int d= b-- & --a; printf ("%d %d %d %d", d, c, b, a);
- Q.2(b) Explain working of Bit-wise exclusive OR and Left Shift operators in C with example. Write a program to print all Prime numbers from 1 to 100. [5]
- Q.3(a) List out the advantages of Functions in C. Also write a function to find second largest number from 1D array of n numbers. [5]
- Q.3(b) Differentiate between the Following with example: [5]
i. Function Definition and Function Declaration.
ii. Actual parameter and Formal parameter.
Call by Value and Call by Reference
- Q.4(a) What is the difference between Character array and String Literal? Write a C program to find the frequency of characters in String. [5]
- Q.4(b) What is Recursive Function? List out their merits and demerits also write a C program to calculate factorial of a number using recursion. [5]
- Q.5(a) Define the Storage classes in C language and compare the lifetime, scope, initial value and storage place of all storage classes. [5]
- Q.5(b) Write down the difference between Structure and Union. Write C program to write a line of String in a text file. [5]

::::::25/11/2019::::::E