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| **Name of the Program:** | B.Tech | **Semester:** | 1 |
| **Paper Title:** | Introduction to Programming | **Paper Code:** | ECS41101 |
| **Maximum Marks:** | 50 | **Time Duration:** | 3 Hrs |
| **Total No. of Questions:** | 17 | **Total No of Pages:** | 03 |
| *(Any other information for the student may be mentioned here)* | 1. At top sheet, clearly mention Name, Univ. Roll No., Enrolment No., Paper Name & Code, Date of Exam. 2. All parts of a Question should be answered consecutively. Each Answer should start from a fresh page. 3. Assumptions made if any, should be stated clearly at the beginning of your answer. | | |

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| **Group A**  **Answer All the Questions (5 x 1 = 5)** | | | |
| 1 | What is the role of curly barces {} in C program. | **Knowledge Level** | **CO1** |
| 2 | What is the output of below program?  int main()  {  int i;  for(i = 0,i<5,i++)  {  printf("Hello");  }  } | Remembering | **CO2** |
| 3 | Which are the standard directories? Where are .h files kept. | Remembering | **CO3** |
| 4 | What is the difference between the functions strcmp() and strcimp(). | Remembering | **CO4** |
| 5 | What is the use of dot(.) and arrow (->) operator in structure. | Remembering | **CO5** |
| **Group B**  **Answer All the Questions (5 x 2 = 10)** | | | |
| 6 a) | i) Tell about space requirement for variables of different data types.  ii) What do you mean by type conversion? Why is it necessary? | Remembering | **CO1** |
| **(OR)** | | | |
| 6 b) | i) Demonstrate a C program to find the greater among three numbers using conditional operator  ii) Explain the rules for writing a C program. | Understanding | **CO1** |
| 7 a) | Explain the limitations of using getchar() and scanf() functions for reading strings with example. | Evaluating | **CO2** |
| **(OR)** | | | |
| 7 b) | What is meant by compilation? Explain in detail. | Understanding | **CO2** |
| 8 a) | Demonstrate a C program to find the average temperature of five sunny days. Assume the temperature in Celsius. | Understanding | **CO3** |
| **(OR)** | | | |
| 8 b) | Classify the different types of decision making statements. | Analyzing | **CO3** |
| 9 a) | Build a program to check whether the person is eligible to vote. | Creating | **CO4** |
| **(OR)** | | | |
| 9 b) | Explain how to access a value using pointer? Give a suitable example. | Evaluating | **CO4** |
| 10 a) | Explain the operation of each of the following for loops:  (a). for(n=1;n!=10; n+=2)  Sum= sum+n;  (b). for(n=5; n<=5; n - =1)  Sum=sum+n;  (c ). for(n=1; n<=5;)  Sum=sum+n  (d). for(n=5; ; n=n+1)  Sum=sum+ n; | Evaluating | **CO5** |
| **(OR)** | | | |
| 10 b) | How would you decide the use of one of the three loops in C for a given problem? | Remembering | **CO5** |
| **Group C**  **Answer All the Questions (7 x 5 = 35)** | | | |
| 11 a) | i) Explain with example how to create a structure using “typedef”.  ii) Build a C program using array to compute the Sum, Mean and Standard deviation of all elements stored in an array of ‘n’ real numbers. | Evaluating | **CO1** |
| **(OR)** | | | |
| 11 b) | i) How to declare and initialize a Two-dimensional array? Discuss with examples.  ii) Demonstrate a C program to print the sum of all elements except diagonal elements of 2-D matrix. | Remembering | **CO1** |
| 12 a) | Build a program to encrypt the text “INDIA”. The output should be “KPFKC”. (‘A’ is to be replaced with ‘C, ‘B’ with ‘D’ and ‘C’ with ‘E’ and so on.) | Evaluating | **CO2** |
| **(OR)** | | | |
| 12 b) | Explain with example the concept of “**overflow and underflow**” in **array**. | Evaluating | **CO2** |
| 13 a) | Construct a C program that defines a structure **employee** containing the details such as **empno, empname, department name and salary**. The structure has to store 20 employees in an organization. Use the appropriate method to define the above details and define a function that will display the contents? | Applying | **CO3** |
| **(OR)** | | | |
| 13 b) | Utilize the given marks ranging from 0 to 100, write a program to compute and print the number of student:   1. Who have obtained more than 80 marks 2. Who have obtained more than 60 marks 3. Who have obtained more than 40 marks 4. Who have obtained 40 or less marks   The program should use a minimum number of if statement. | Applying | **CO3** |
| 14 a) | Utilize the following declarations:  int x=10,y=10;  int \*p1=&x, \*p2=&y;  What is the value of each of the following expressions?   1. (\*p1)++ 2. - - (\*p2) 3. \*p1 + (\*p2)- - 4. ++(\*p2)- \*p1 | Applying | **CO4** |
| **(OR)** | | | |
| 14 b) | Develop a function that receives a character string and a character as argument and deletes all occurrences of this character in the string. The function should return the corrected string after deletions. | Creating | **CO4** |
| 15 a) | What is **Recursion**? Write a C program to compute polynomial co-efficient **nCr** using recursion | Remembering | **CO4** |
| **(OR)** | | | |
| 15 b) | What is meant by call-by value and call-by reference? Write the advantage of call-by reference over call-by value | Remembering | **CO4** |
| 16 a) | Design a C program to replace each constant in a string with the text one except letter **‘z’ ‘Z’ and ‘a’ ‘A’**. Thus the string **“Programming in C is fun” should be modified as “Qsphsannjoh jo D jt gvo”.** | Creating | **CO5** |
| **(OR)** | | | |
| 16 b) | Develop a program in C that reads the name of a file and displays the contents of the file on the user screen. | Creating | **CO5** |
| 17 a) | Build a program a C function isprime(num) that accepts an integer argument and returns 1 if the argument is a prime or 0 otherwise. Write a program that invokes this function to generate prime numbers between the given ranges | Creating | **CO5** |
| **(OR)** | | | |
| 17 b) | What is function? Explain different classification of user defined functions based on parameter passing and return type with examples | Remembering | **CO5** |

Note: The Sample prepared by assuming 5 COs in a course, considering one CO for one Module.

1. If the COs are higher in numbers that can be managed by equating sub-divisional questions
2. If the COs are lower in numbers, the questions can be increased by equating the number of COs