**Jyothy Institute of Technology**

**Tataguni, Bangalore – 560 082**

**First Internal Test**

**SCHEME OF EVALUATION**

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| **Course** | **:** |  |  |  |  | **Time** | **:** | **1Hour** |
| **Course Name** | **:** | **Programming in C & Data Structures** | **Course Code** | **:** | **15PCD13** | **Maximum Marks** | **:** | **20** |

**Answer the following questions.**

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| **Q No** | **Question** | **Marks** |
| Q1a  Q1b | i) What is pseudo code? Write a pseudo code for finding sum and average of three numbers.  Pseudocode is an informal language, so it is mainly used for creating an outline or a rough draft of a program. Because it is not an actual programming language, pseudocode cannot be [compiled](http://techterms.com/definition/compile) into an executable program. Therefore, pseudocode must be converted into a specific programming language if it is to become an usable [application](http://techterms.com/definition/application).  Average(no1, no2, no3, sum, average)  1. Input three numbers no1, no2, no3  2. sum=no1+no2+no3  3. average = sum/3  4. Display sum and average.  ii) How operators can classified. List all the operators with their precedence and associativity.  Operators can be classified as follows:-  Image result for precedence of operators in C  OR  i) What is data type? How it can be classified? List all primitive data types with format specifiers and memory occupied by them.  Image result for Datatypes  in C  Image result for Datatypes  in C  ii) What are printf() and scanf() functions. Explain with one example.  printf()  1. It is a pre defined function.  2. It is defined in header file <stdio.h>  3. It is used to print the messages onto the terminal.  Eg. printf(“Enter the Values”);  4. It can also be used to print formatted data onto the terminal.  Eg. printf(“The area and perimeter of rectangle is %d and %d”, area, perimeter);  scanf()  1. It is a pre defined function.  2. It is defined in header file <stdio.h>  3. It is used to read data from terminal entered by the user through terminal.  Eg scanf(“%d%d”, &a, &b); | 5  5  5  5 |
| Q2a  Q2b | i) Write the output for the following code:  void main()  {  int a = 5, b=2, res1;  float f1=5.0, f2=2.0, res2;  res1=5/2.0+a/2+a/b;  res2=f1/2\*f1-f2;  printf(“ res1=%d res2=%f ”, res1, res2);  }  Ans:-  res1=6 res2=10.5  ii) Write a program to find area and perimeter of a rectangle. Write test cases and output.  void main()  {  int length, beadth, area, perimeter;  printf(“Enter the length and breadth of the rectangle\n”);  scanf(“%d%d”, &length, &breadth);  area=length\*breadth;  perimeter=2\*(length+breadth);  printf(“Area & Perimeter of rectangle of length %d and breadth %d is %d & %d”, length, breadth, area, perimeter);  }  Output:  Enter the length and breadth of the rectangle  4  6  Area & Perimeter of rectangle of length 4 and breadth 6 is 24 & 20    OR  i) Write the output for the following code:  void main()  {  int i=5, j=6, m,n;  m=++i+j++;  n=--i+j--;  printf(“ m=%d n=%d ”, m, n);  }  Ans:  m=12 n=12  ii) Write a program to swap two numbers using third variable. Write test cases and output.  void main()  {  int a, b, temp;  printf(“Enter the values of a & b\n”);  scanf(“%d%d”, &a, &b);  printf(“Values of a & b before swapping is %d & %d\n”, a, b);  temp=a;  a=b;  b=a;  printf(“Values of a & b after swapping is %d & %d\n”, a, b);  }  Output:  Enter the values of a & b  5  3  Values of a & b before swapping is 5 & 6  Values of a & b after swapping is 6 & 5 | 5  5  5  5 |

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