

**Year/Sem: I/II**  
**Duration : 2 Lecture Hrs**

**Date:02-03-2017**  
**Max. Marks: 50**

**Instructional Objectives:**

I01 – Gain knowledge about problem solving in computers

I02 – Understand the basic components and structure of a C program

**Outcomes :**

a1: To gain fundamental knowledge in the context of problem solving concepts.

a2: To understand the applications of algorithms, flowcharts and programming concepts in problem solving skills.

**Outcome Analysis :**

Question 1	Instructional Objective	Outcome	Maximum marks	Marks obtained
1	I01	a1	4	
2	I01	a1	4	
3	I02	a2	4	
4	I02	a2	4	
5	I01	a1	4	
6	I02	a2	4	
7	I01	a1	15	
8	I02	a2	15	
Total				

**Part- A [Answer any FIVE questions]**

**(5x4=20 marks)**

1. Differentiate creative thinking and critical thinking?
2. How do you differentiate algorithmic solution from heuristic solution?
3. Identify the error and write the correct output for the following code:

```
void main()  
{  
int age = 30;  
float h = 6.1.2;  
clrscr()  
printf("Age=%f, \n height =%d", age, hieght);  
}
```

4. What will be the output/s and also identify the errors if any, for the following:

- (i) 

```
include<stdio.h>
int main(){
    printf("nn /n/n nn/n");
    return 0;
}
```
- (ii) 

```
void main()
{
    unsigned char c=75;
    printf("%d %c %d", c,c,c);
}
```

5. Explain briefly about delimiters and escape sequences ?
6. Write a program to find sum of first and last digit in a four digit number?

**Part-B**

**(2x15=30 marks)**

- 7.a. Write algorithm and draw flowchart for generating even numbers between 1000 and 2000 and then prints them in the standard output and also print total sum.

**OR**

- 7.b. Explain in detail the intermediate compilation steps - when source code is converted to machine code with neat diagram & appropriate commands? also Specify the Intermediate File Extensions?

- 8.a. Amazon has announced the SUPER VALUE DAY Sale on March 1<sup>st</sup> & 2<sup>nd</sup> 2017 – Write a C Program to implement the same – The offer is applicable only to customers whose purchase is Rs.500 and above. The Cash-Back will be 10% till Rs.1000, 20% for Rs.1001 till Rs.2000 and 30% for 2001 & above, there is an Additional Cash-Back of Rs.125 if the payment is done through ICICI Bank cards & also ensure the MAXIMUM Cash-Back(per customer) shall not exceed Rs.1000(at any cost)

**OR**

- 8.b. Write the program for calculates gross pay for the employee. The company pays “straight time” for the first 40 hours worked by each employee and pays “time and a half” for all hours worked in excess 40 hours. Salary Rs.180/hour. Your program should get the input of employee id, hours worked in a week. Employee ids ended with 7 are straight through the time and a half category. Display the employee’s gross pay. (15)