



Roll no

National Institute of Technology Goa

B.Tech-IV Semester – Test-I

Course Name: Object Oriented Programming**Course Code:** CS252**Duration:** 1 Hour 15 Minutes**Instructions:**

1. Write legibly. Unnecessary details attracts penalty
2. Assume that appropriate header files are included in the program if some are missing in the program fragment. Wherever not mentioned, you should take the compiler is of 32 bits.
3. All the questions carry 2 Marks. You have to justify your answer.

Question 1: You have to provide justification for your answer.

A. What is the output of the following program? <pre>#include<stdio.h> int main() { int n; for(n = 7; n!=0; n--) printf("n = %d", n--); getchar(); return 0; }</pre>	B. Explain the problems in the usage of C and D. <pre>const char* C = "hi mom"; C[3] = 'a'; char *const D = "hi mom"; D = "hi dad";</pre>
C. What is the output of the program? Assume compiler is of 16 bit. <pre>#include<stdio.h> int main() { printf("%x", -1<<1); getchar(); return 0; }</pre>	D. What is the output of the following program? <pre>#include <stdlib.h> #include <stdio.h> enum {false, true}; int main() { int i = 1; do { printf("%d\n", i); i++; if (i < 15) continue; } while (false); getchar(); return 0; }</pre>

<p>E. What is the result of compiling and running this program?</p> <pre> #include<stdio.h> char *getString() { char str[] = "Will I be printed?"; return str; } int main() { printf("%s", getString()); getchar(); } </pre>	<p>F. What is the output of the following program?</p> <pre> #include <stdio.h> int main() { int i=0; for(i=0; i<20; i++) { switch(i) { case 0: i+=5; case 1: i+=2; case 5: i+=5; default: i+=4; break; } printf("%d ", i); } getchar(); return 0; } </pre>
<p>G. What is the output of the following program?</p> <pre> #include <stdio.h> int main() { int first = 50, second = 60, third; third = first /* Will this comment work? */ + second; printf("%d /* And this? */\n", third); getchar(); return 0; } </pre>	<p>H. What is the output of the following program?</p> <pre> #include <stdio.h> int main() { int i; i = 1, 2, 3; printf("i = %d\n", i); getchar(); return 0; } </pre>
<p>I. What is the output of the following program?</p> <pre> #include<stdio.h> #define fun (x) (x)*10 int main() { int t = fun(5); int i; for(i = 0; i < t; i++) printf("Hi\n"); return 0; } </pre>	<p>J. How many times will this loop execute? Explain your answer.</p> <pre> unsigned char half_limit = 150; for (unsigned char i = 0; i < 2 * half_limit; ++i) { // do something; } </pre>
<p>K. Value of a in a= (b=5,b+5) is</p> <p>a) Syntax Error b) Junk Value c) 10</p>	<p>L. What is the output of the following program?</p> <pre> int main() { unsigned int i=65000; while (i++ != 0); printf("%d",i); return 0; } </pre>

<p>M. How many times will NITGOA be printed in the below program?</p> <pre>#include <stdio.h> int main() { int i = 1024; for (; i >= 1) printf("NITGOA"); return 0; }</pre>	<p>N. What is the output of the following program?</p> <pre>#define square(x) x*x int main() { int x; x = 36/square(6); printf("%d",x); getchar(); return 0; }</pre>
<p>O. What is the output of the following program?</p> <pre>int main() { char arr[] = {1, 2, 3}; char *p = arr; if(&p == &arr) printf("Same"); else printf("Not same"); getchar(); }</pre>	<p>P. What is the output of the following program?</p> <pre>#include<stdio.h> int main() { typedef int i; i a = 0; printf("%d", a); getchar(); return 0; }</pre>
<p>Q. What is the output of the following program?</p> <pre>int main() { char arr[] = "timesfortimes"; printf("%d", sizeof(arr)); getchar(); return 0; }</pre>	<p>R. What is the output of the program?</p> <pre>int main() { int x, y = 5, z = 5; x = y==z; printf("%d", x); getchar(); return 0; }</pre>

<p>S. What is the output of the following program?</p> <pre>#include <stdio.h> int foo(int* a, int* b) { int sum = *a + *b; *b = *a; return *a = sum - *b; } int main() { int i = 0, j = 1, k = 2, l; l = i++ foo(&j, &k); printf("%d %d %d %d", i, j, k, l); return 0; }</pre>	<p>T. What is the output of the following program?</p> <pre>#include <stdio.h> int main() { int a = 1; int b = 1; int c = a --b; int d = a-- && --b; printf("a = %d, b = %d, c = %d, d = %d", a, b, c, d); return 0; }</pre>
<p>U. What is the output of the following program?</p> <pre># include <stdio.h> void print(int arr[]) { int n = sizeof(arr)/sizeof(arr[0]); int i; for (i = 0; i < n; i++) printf("%d ", arr[i]); } int main() { int arr[] = { 1, 2, 3, 4, 5, 6, 7, 8 }; print(arr); return 0; }</pre>	<p>V. Consider the following declaration of a ‘two-dimensional array in C:</p> <pre>char a[100][100];</pre> <p>Assuming that the main memory is byte-addressable and that the array is stored starting from memory address 0, What is the address of a[40][50]?</p>
<p>W. What is the output of the following program?</p> <pre>int main() { int i; int arr[5] = { 1 }; for (i = 0; i < 5; i++) printf("%d ", arr[i]); return 0; }</pre>	<p>X. What is the output of the program?</p> <pre>#include<stdio.h> void f(int *p, int *q) { p = q; *p = 2; } int i = 0, j = 1; int main() { f(&i, &j); printf("%d %d \n", i, j); getchar(); return 0; }</pre>
