## Broadcom (C)

1. Communication between a computer and a keyboard involves \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ transmission.
   1. Automatic
   2. Full Duplex
   3. Half Duplex
   4. Simplex
2. Which protocol is used to send a destination network unknown message back to originating hosts?
   1. TCP
   2. ARP
   3. BootP
   4. ICMP
3. Which of the following are TCP/IP protocols used at the Application layer of the OSI model?

|  |
| --- |
| 1. IP |
| 1. TCP |
| 1. Telnet |
| 1. FTP |
| 1. TFTP |

|  |  |
| --- | --- |
| 1. 3, 4 and 5 | 1. 1, 3, and 5 |
| 1. 1 and 3 | 1. All of the above |

1. The packet of information at the application layer is called

|  |  |
| --- | --- |
| 1. Packet | 1. Segment |
| 1. Message | 1. Frame |

1. As the forward current through a silicon diode increases, the internal resistance

|  |  |
| --- | --- |
| 1. Decreases | 1. Increases |
| 1. Resistance not a characteristic of diode | 1. Remains Same |

1. What is the voltage measured across a series short?

|  |  |
| --- | --- |
| 1. Infinite | 1. Zero |
| 1. Maximum | 1. Value of Source Voltage |

1. A local telephone network is an example of a \_\_\_\_\_\_\_\_\_\_\_\_ network.

|  |  |
| --- | --- |
| 1. Packet switched | 1. Circuit switched |
| 1. Both of the mentioned | 1. None of the mentioned |

1. The OS X has \_\_\_\_\_\_\_\_\_\_
2. Monolithic kernel
3. Hybrid kernel
4. micro kernel
5. monolithic kernel with modules
6. A \_\_\_\_\_\_\_\_\_\_\_ is a device that forwards packets between networks by processing the routing information included in the packet.

|  |  |
| --- | --- |
| 1. Bridge | 1. Firewall |
| 1. Router | 1. All of the mentioned |

1. World Wide Web is being standard by

|  |
| --- |
| 1. World Wide Corporation |
| 1. World Wide Consortium |
| 1. World Wide Web Standard |
| 1. W3C |

1. Predict the output of the below program

#define square(x) x\*x

Int main()

{

Int x;

X = 36/square(6);

Printf(“%d”, x);

Getchar();

Return 0;

}

|  |
| --- |
| 1. Segmentation Fault |
| 1. 1 |
| 1. 36 |
| 1. Unbound Error |

1. Point out the error in the program?

Struct emp

{

Int ecode;

Struct emp \*e;

};

|  |
| --- |
| 1. No Error |
| 1. Linker Error |
| 1. Error: in structure declaration |
| 1. None of above |

1. Which of the following is true for variable names in C?
2. They can contain alphanumeric characters as well as special characters
3. It is not an error to declare a variable to be one of the keywords (like goto, static)
4. Variable names cannot start with a digit
5. Variable can be of any length.

## Zoho (C)

1. Find the output of the following program.

int main()

{

int a, b, number, result, i;

a=6; b=14;

number =(a>=b)?a:b;

for(i=number;;i++)

If(i%a==0&&i%b==0)

{

result=I;

break;

}

printf(“%d”, result);

return 0;

}

1. Find the output of the following program.

int main()

{

int a=5, b=-7, c=0, d;

d = ++a && ++b || ++c;

printf(“\n%d %d %d %d”, a, b, c, d);

return 0;

}

1. Find the output of the following program.

int main()

{

int c[] = {2, 3, 4, 6, 5};

int j, \*p=c, \*q=c;

for(j=0; j<5; j++)

{

printf(“%d”, \*c);

++q;

}

for(j=0;j<5;j++)

{

printf(“%d”, \*p);

++p;

}

return 0;

}

1. Find the output of the following program.

int main()

{

int n=4, i, j, sum=0;

int a[][4] = {{12,15,16,20}, {4,10,2,21}, {33, 14, 23, 9}, {22,43,54,6}};

for(i=0; i<n; i++)

{

for(j=0;j<n;j++)

if(i==j)

sum = sum + a[i][j];

}

printf(“%d”, sum);

return 0;

}

1. Find the output of the following program.

int main()

{

int n, x, count, I;

n=68;

for(x=1; x<=n; x++)

if(n%x == 0)

{

for(count=0, i=1; i<=x; i++)

if(x % I == 0)

count++;

if(count == 2)

printf(“\t%d”, x);

}

return 0;

}

1. Find the output of the following program.

int main()

{

int s[] = {12, 10, 8, 6, 4, 2};

int f[] = {17, 15, 11, 9 , 5, 1};

int i=0, j=0, t=0;

for(i=0; i<6; i++){

for(j=t; j<6; j++)

if(s[j] > f[i])

{

printf(“%d-%d, “,f[i], s[j]);

t=j+1;

break;

}

}

return 0;

}

1. Find the output of the following program.

int compare(int a, int b, int c)

{

if(a-b>0 && a-c>0)

return c;

else if(b-c > 0)

return a;

else

return b;

}

int main()

{

printf(“%d”, compare(compare(88, 89, 91), compare(90, 41, 17), compare(75, 100, 96)));

return 0;

}

1. Find the output of the following program.

void doAction(char \*str)

{

if(\*str)

{

doAction(str + 1);

printf(“%c”, \*str);

}

}

int main()

{

char a[] = “zoho”;

doAction(a);

return 0;

}

1. Find the output of the following program.

int main()

{

int a[10], i=0;

for(i=0; i<10; i++)

a[i] = 9-I;

for(i=0;i<10;i++)

a[i] = a[a[i]];

for(i=0; i<10; i++)

printf(“%d “, a[i]);

return 0;

}

1. Find the output of the following program.

int main()

{

char \*x = “Zoho123Corp45”;

int result = 0, i;

for(i=0;x[i] != ‘\0’; i++)

{

if(x[i] >= 48 && x[i] <= 57)

result = result+(x[i]-‘0’);

}

printf(“%d”, result);

return 0;

}

1. Find the output of the following program.

void fun(int b[][3])

{

int i, j;

for(i=0;i<3;i++){

for(j=0;j<=i;j++)

b[i][j]++;

}

}

int main()

{

int i, j;

int a[3][3] = {22,67,17,9,32,3,58,45,36};

fun(a);

for(i=0; i<3;i++){

for(j=0;j<3;j++)

printf(“%d “, a[i][j]);

}

return 0;

}

1. Find the output of the following program.

int main(){

int n, m, i, j, result=0;

int a[][4] = {{12,15,16,8}, {17,10,7,21}, {33,14,23,9}, {22,43,54,6}};

n=4;

for(i=0;i<n;i++){

result = a[i][i]{

for(j=0;j<n;j++){

if(i%2 == 0){

if(a[i][j] < result)

result = a[i][j];

}

else if(a[i][j]>result)

result=a[i][j];

}

printf(“%d”, result);

}

return 0;

}

1. Find the output of the following program.

int main(){

int limit=100,n,x,op;

for(n=1;n<=limit;n++){

x=n;

for(op=0;x!=0;x=x/10){

op=op\*10;

op=op+x%10;

}

if(op==n)

printf(“%d “, n);

}

return 0;

}

1. Find the output of the following program.

int fun2(int a);

int fun1(int a, int b);

int main()

{

int a=5,b=4, res;

res=fun1(a,b);

printf(“%d”,res);

return 0;

}

int fun1(int a, int b)

{

static int r=1;

if(b==0)

return 1;

r=fun2(a)\*funt1(a-1, b-1);

return r;

}

int fun2(int a)

{

if(a==1)

return 1;

else

return a + fun2(a-1);

}

1. Find the output of the following program.

void doAction(int arr[], int n);

void doAction(int arr[], int n)

{

int I, temp;

temp = arr[0];

for(i=0; I < n-1; i++)

arr[i] = arr[i+1];

arr[i] = temp;

}

void printArray(int arr[], int size)

{

int i;

for(I = 0; I <size; i++)

printf(“%d “, arr[i]);

}

int main()

{

int arr[] = {3, 22, 23, 14, 55, 7};

int i;

for(I = 0; I < 3; i++)

doAction(arr, 6);

printArray(arr, 6);

getchar();

return 0;

}

## Apptivo ( Java)

1. What will be the output of the program?

class Test

{

public static void main(String[] args)

{

int i1 = 5;

int i2 = 6;

String s1 = “7”;

System.out.println(i1 + i2 + s1); /\* Line 8 \*/

}

}

|  |  |  |  |
| --- | --- | --- | --- |
| 1. 18 | 1. 117 | 1. 567 | 1. Compiler error at line no 8 |

1. Which of the following is illegar?

|  |  |  |
| --- | --- | --- |
| 1. int I = 32 | 1. float f = 45.0; | 1. double d = 45.0; |

1. What is the correct declaration of an abstract method that is intended to be public:

|  |
| --- |
| 1. public abstract void add(); |
| 1. public abstract void add() {}; |
| 1. public virtual add(); |
| 1. public abstract add(); |

1. Which methods may not cause a thread to stop executing?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. sleep(); | 1. stop(); | 1. yield(); | 1. wait(); | 1. notify(); |

1. Which is reserved word in the Java programming language?

|  |  |  |  |
| --- | --- | --- | --- |
| 1. method | 1. Native | 1. Subclasses | 1. Reference |

1. If class A implements an interface does it need to implement all methods of that interface?

|  |
| --- |
| 1. Yes, always |
| 1. No, not when A is abstract |
| 1. Both of the above |
| 1. None of the above |

public class Test{

public static void main(String[] args){

int lines = 5;

for (int i=0; i < lines; i+++)

{

for (int j= lines – i + 1; j>= i; j--)

{

System.out.print(“\*”);

}

System.out.println();

}

}

}

What will be the output of this program?

|  |
| --- |
| A.  \*\*\*\*\*  \*\*\*\*  \*\*\*  \*\*  \* |
| B.  \*\*\*\*\*\*\*  \*\*\*\*\*  \*\*\*  \* |
| C.  \*  \*\*  \*\*\*  \*\*\*\*  \*\*\*\*\* |
| D.  \*\*\*\*\*  \*\*\*\*\*  \*\*\*\*\*  \*\*\*\*\*  \*\*\*\*\* |

1. What will be the output of the program?

public class Test

{

private static float[] f = new float[2];

public static void main(String[] args)

{

System.out.println(“f[0] = “ + f[0]);

}

}

1. What will be the output of the program?

String x = “xyz”;

x.toUpperCase(); /\* Line 2 \*/

String y = x.replace(‘Y’, ‘y’);

y = y + “abc”;

System.out.println(y);

|  |  |  |  |
| --- | --- | --- | --- |
| 1. abcXyZ | 1. abcxyz | 1. xyzabc | 1. XyZabc |

1. What is the output of the following program?

class Operators

{

public static void main(String[] args)

{

double x=6;

int y=5, z=2;

x = y++ + ++x/z;

System.out.println(x);

}

}

|  |  |  |  |
| --- | --- | --- | --- |
| 1. 9 | 1. 8 | 1. 8.5 | 1. None of the Above |

1. What is the output of the following program?

public class ForLoop

{

public static void main(String[] args)

{

int i=10;

for(int i=0; i<5; i++)

{

System.out.println(“i=” + i);

}

System.out.println(“i=” + i);

}

}

|  |
| --- |
| A.  i=0  i=1  i=2  i=3  i=4  i=10 |
| B.  i=0  i=1  i=2  i=3  i=4  i=5 |
| C.  Compilation Error |
| D.  None of the Above |

1. Which of the following is NOT a Java Keyword?

|  |  |  |  |
| --- | --- | --- | --- |
| 1. abstract | 1. native | 1. package | 1. synchronize |

1. What is the output of the following.

StringBuffer sb1 = new StringBuffer(“Amit”);

StringBuffer sb2 = new StringBuffer(“Amit”);

String ss1 = “Amit”;

System.out.println(sb1 == sb2);

System.out.println(sb1.equals(sb2));

System.out.println(sb1.equals(ss1));

|  |
| --- |
| A  false  false  false |
| B  false  true |
| C Compiler Error |
| D  true  true  false |

1. Which of the following is illegal?

|  |  |  |
| --- | --- | --- |
| 1. int I = 32 | 1. float f = 45.0; | 1. double d = 45.0; |

class Parent

{

protected void x(){}

public void y(){}

}

public class Child extends Parent

{

public void x(){}

protected void y(){}

}

|  |
| --- |
| 1. It compiles successfully |
| 1. Compilation error – x can’t have its visibility increased |
| 1. Compilation error – y can not have its visibility reduced |
| 1. Compilation error – neither x nor y can have their visibility changed |

public class Test {

public static void main(String[] args){

Figure f1 = new Figure();

f1.print();

Figure f2 = new Triangle();

f2.print();

Triangle t = new Triangle();

t.print();

}

}

class Figure {

public void print() {

System.out.println(“FIGURE”);

}

}

class Triangle extends Figure {

public void print() {

System.out.println(“TRIANGLE”);

}

}

What will be the output of this program?

|  |  |
| --- | --- |
| 1. FIGURE FIGURE FIGURE | 1. FIGURE FIGURE TRIANGLE |
| 1. FIGURE TRIANGLE TRIANGLE | 1. None of the above |

public class Test {

public static void main(String[] args){

Figure f1 = new Figure();

f1.print();

Figure f2 = new Triangle();

f2.print();

Triangle t = new Triangle();

t.print();

}

}

class Figure {

public static void print() {

System.out.println(“FIGURE”);

}

}

class Triangle extends Figure {

public static void print() {

System.out.println(“TRIANGLE”);

}

}

What will be the output of this program?

|  |  |
| --- | --- |
| 1. FIGURE FIGURE FIGURE | 1. FIGURE FIGURE TRIANGLE |
| 1. FIGURE TRIANGLE TRIANGLE | 1. None of the above |

## Apptivo (C)

1. Which of the storage classes becomes the global variable for the entire program?

|  |  |  |  |
| --- | --- | --- | --- |
| 1. Extern | 1. Static | 1. Auto | 1. Register |

1. What is the wrong with below code?

double d;

scanf(“%f”, &d);

|  |
| --- |
| 1. Instead of %f, %lf should be used for formatting |
| 1. Instead of %f, %d should be used for formatting |
| 1. Instead of %f, %D should be used for formatting |
| 1. Instead of %f, %n should be used for formatting |

1. What is the true about the following C functions?

|  |  |
| --- | --- |
| 1. Need not return any value | 1. Should always return an integer. |
| 1. Should always return a float | 1. Should always return more than one value. |

## Apptivo (SQL)

1. The key word used in SQL for searching by columns of type text is:

|  |  |  |  |
| --- | --- | --- | --- |
| 1. LIKE | 1. NVL | 1. GROUP BY | 1. HAVING |

## CHAIN-SYS (Java)

1. What is the base class of all classes?
2. static pubic void main instead of public static void main – what will happen?
3. Diff between instance variables and local variables
4. How to define a constant variable in Java?
5. Can a main() method be overloaded?
6. Can a main() method be declared final?
7. Which package is imported by default?
8. What modifiers are allowed for method s in an Interface?
9. class Hotel {

public int bookings;

public void book(){

bookings++;

}

}

public class SuperHotel extends Hotel{

public void book() {

bookings--;

}

public void book(int size) {

book();

super.book();

bookings += size;

}

public static void main(String args[]) {

Hotel hotel = new SuperHotel();

hotel.book(2);

System.out.print(hotel.bookings);

}

}

|  |  |
| --- | --- |
| 1. Compilation fails. | 1. An exception is thrown at runtime |
| 1. 0 | 1. 1 |
| 1. 2 | 1. -1 |

1. Given the code. What is the result?

public class TrickyNum<X extends Object> {

private X x;

public TrickyNum(X x){

this.x = x;

}

private double getDouble(){

return x.doubleValue();

}

public static void main(String args[]) {

TrickyNum<Integer> a = new TrickyNum<Integer>(new Integer(1));

System.out.print(a.getDouble());

}

}

|  |
| --- |
| 1. Compilation fails. |
| 1. An exception is thrown at runtime. |
| 1. “1.0” is printed |
| 1. “1” is printed. |

1. Given the code. What is the result?

public class Hotel{

private static void book(){

System.out.print(“book”);

}

public static void main(String[] args){

Thread.sleep(1);

book();

}

}

|  |
| --- |
| 1. Compilation fails. |
| 1. An exception is thrown at runtime |
| 1. “book” is printed. |
| 1. The code executes normally, but nothing is printed. |

1. Given the code. What is the result?

public static void main(String args[]) {

String str = null;

if(str.length() == 0) {

System.out.print(“1”);

} else if (str == null) {

System.out.print(“2”);

} else {

System.out.print(“3”);

}

}

|  |
| --- |
| 1. Compilation fails. |
| 1. “1” is printed. |
| 1. “2” is printed. |
| 1. “3” is printed. |
| 1. An exception is thrown at runtime. |

1. Given the code. What is the output?
2. public static void main(String args[]) {
3. Object myObj = new String[]{“one”, “two”, “three”};{
4. for(String s: (String[])myObj) System.out.print(s + “.”);
5. }
6. }

|  |
| --- |
| 1. one.two.three. |
| 1. Compilation fails because of an error at line 2 |
| 1. Compilation fails because of an error at line 3 |
| 1. An exception is thrown at runtime. |

1. Given the code. What is the result?

class Vehicle {

public void printSound() {

System.out.print(“vehicle”);

}

}

class Car extends Vehicle {

public void printSound() {

System.out.print(“car”);

}

}

class Bike extends Vehicle {

public void printSound() {

System.out.print(“bike”);

}

public class Test {

public static void main(String[] args) {

Vehicle v = new Car();

Bike b = (Bike) v;

v.printSound();

b.printSound();

}

}

|  |
| --- |
| 1. Compilation fails. |
| 1. An exception is thrown at runtime. |
| 1. “vehiclecar” is printed. |
| 1. “vehiclebike” is printed. |
| 1. “carcar” is printed. |
| 1. “bikebike” is printed. |

1. Given the code. What is the result?

import java.util.Collections;

import java.util.LinkedList;

public class TryMe {

public static void main(String args[]){

LinkedList<String> list = new LinkedList<String>();

list.add(“BbB1”);

list.add(“bBb2”);

list.add(“bbB3”);

list.add(“BBb4”);

Collections.sort(list);

for (String str : list) {

System.out.print(str + “:”);

}

}

}

|  |
| --- |
| 1. “BbB1:bBb2:bbB3:BBb4:” is printed. |
| 1. “BBb4:bbB3:bBb2:BbB1:” is printed. |
| 1. “BBb4:BbB1:bBb2:bbB3:” is printed. |
| 1. “bbB3:bBb2:BbB1:BBb4:” is printed. |
| 1. Compilation fails. |
| 1. An exception is thrown at runtime. |

1. Given the code. What is the output?

public class Test {

int a = 10;

public void doStuff(int a) {

a += 1;

System.out.println(a++);

}

public static void main(String args[]) {

Test t = new Test();

t.doStuff(3);

}

}

|  |
| --- |
| 1. 11 |
| 1. 12 |
| 1. 4 |
| 1. 5 |

1. Given the code. What is the result?

public static void main(String args[]) {

String str = null;

if (str == null) {

System.out.print(“1”);

} else (str.length() == 0) {

System.out.print(“2”);

} else {

System.out.print(“3”);

}

}

|  |
| --- |
| 1. Compilation fails. |
| 1. “1” is printed. |
| 1. “2” is printed. |
| 1. “3” is printed. |
| 1. An exception is thrown at runtime. |

1. Given the code. What is the result?

public class EmptyStringsTest {

public static Boolean isEmpty(String s) {

return (s == null | s.length() == 0);

}

public static void main(String args[]) {

if (isEmpty(null)) {

System.out.print(“empty”);

} else {

System.out.print(“not\_empty”);

}

}

}

|  |
| --- |
| 1. “empty” is printed |
| 1. “not\_empty” is printed |
| 1. Compilation fails |
| 1. An exception is thrown at runtime. |

1. Given the code. What is the result?

String test = “This is a test string”;

String[] tokens = test.split(“\\s”);

System.out.println(tokens.length);

|  |
| --- |
| 1. 0 |
| 1. 5 |
| 1. 21 |
| 1. Compilation fails |
| 1. An exception is thrown at runtime |

1. What can directly access and change the value of the variable roomNr?

package com.mycompany;

public class Hotel {

public int roomNr = 100;

}

|  |
| --- |
| 1. Only the Hotel class. |
| 1. Any class. |
| 1. Any class in com.mycompany package. |
| 1. Any class that extends Hotel. |

1. null is a keyword

|  |
| --- |
| 1. True |
| 1. False |

1. Arraylist is threadsafe.

|  |
| --- |
| 1. True |
| 1. False |

1. Given the code below. This code is rub by “java Test 1 2 3 4”. What is the result?

public class Test {

public static void main(String args[]) {

for(int i = 1; i < args.length; i++){

System.out.print(i + “ “);

}

}

}

|  |
| --- |
| 1. Compilation fails. |
| 1. An exception is thrown at runtime |
| 1. 1 2 3 |
| 1. 1 2 |
| 1. 2 3 |

1. Given the code. What is the output?

public class Test {

int a = 10;

public void doStuff(int a) {

a += 1;

System.out.println(++a);

}

public static void main(String args[]) {

Test t = new Test();

t.doStuff(3);

}

}

|  |
| --- |
| 1. 4 |
| 1. 5 |
| 1. 12 |
| 1. 11 |

1. Given the code. What is the result?
2. int i = 10;
3. while (i++ <= 10) {
4. i++;
5. }
6. System.out.print(i);

|  |
| --- |
| 1. 10 |
| 1. 11 |
| 1. 12 |
| 1. 13 |
| 1. Line 5 will be never reached. |

1. What is constructor?
2. What is method overriding
3. What is method overloading
4. What is final variable?
5. What is interface?
6. What is abstract class?
7. What is the meaning of immutable in terms of String?
8. How many objects will be created in the following code?

String s1 = “Welcome”;

String s2 = “Welcome”;

String s3 = “Welcome”;

1. What is the basic difference between string and stringbuffer object?
2. Can you make a constructor final?

|  |
| --- |
| 1. Yes |
| 1. No |

1. Can we override static method?

|  |
| --- |
| 1. Yes |
| 1. No |

1. What is the base class for Error and Exception?
2. How many objects will be created in the following code?

String s1=”Welcome”;

String s2=”Welcome”;

String s3=”Welcome”;

|  |
| --- |
| 1. One |
| 1. Three |

1. What is the return type of the main() method?
2. What is the argument of main() method?

## CTS (C)

1. Check for syntax error/ logical error and correct the error to get the desired output.  
   Given n, print from n to 0  
   int main()  
   {  
    int n;  
    scanf(“%d”, &n);  
    unsigned int i = n;  
    while(i >= 0)  
    {  
    printf(“%d\n”, i);  
    i–;  
    }  
    return 0;  
   }

Input: 4  
Output: Infinite loop

Answer: Error – Logical error  
unsigned int i = n; unsigned integer ranges from 0 to 65535, which will be taken in the cyclic order. So i– will keep repeating in a cyclic way. The loop will never be terminated. So it should be written as int i = n;

1. Find the factorial of a given number.int main()  
   {  
    long int fact = 1, n, i;  
    scanf(“%d”, &n);

for(i =1; i <= n; i++)  
 {  
 fact = fact \* i;  
 }  
 printf(“%d”, fact);  
 return 0;  
}

Input: 20  
Output: -2102132736

Answer: Error – Logical error  
The fact and n are declared as long int, so in scanf and printf %ld should be used in place of %d.

1. Check whether the below program print the below pattern1111  
   222  
   33

void main()  
{  
 int i, j, n;  
 scanf(“%d”, &n);  
 for(i = 1; i<n; i++)  
 {  
 for(j = 1; j<n; j++)  
 {  
 printf(“%d”, i);  
 }  
 printf(“\n”);  
 }  
}

Input: 3  
Output:  
111  
222  
333

Answer: Error: Logical error  
The inner for loop has to be written in this way: for(j = i-1; j<n; j++)

1. Find the greatest of three numbers.  
   int main()  
   {  
    int num1, num2, num3;  
    scanf(“%d %d %d”, &num1,&num2,&num3);  
    if (num1 > num2) && (num1 > num3)  
    {  
    printf(“%d”, num1);  
    }  
    elseif(num2>num3)  
    {  
    printf(“%d”, num2)  
    }  
    else  
    {  
    printf(“%d”, num3);  
    }  
    return 0;  
   }

Answer: Error: Syntax error  
if (num1 > num2) && (num1 > num3) à it has to be written as if ((num1 > num2) && (num1 > num3)) and this line elseif(num2>num3) should be rewritten as else if(num2>num3)

1. Fix the error, recompile and match against the output provided.int main(void)  
   {  
    printf(“This is a \”buggy” program\n”);  
    return 0;  
   }

Corrected program:  
int main(void)  
{  
 printf(“This is a \”buggy\” program\n”);  
 return 0;  
}

1. Code reuse: Convert Binary to Decimal by using the existing function.  
   void binarytodecimal(number)  
   {  
    // Type your code here  
   }  
   void main()  
   {  
    int num;  
    scanf(“%d”, &num);  
    printf(“%d”, binarytodecimal(num);  
   }

Answer:  
void binarytodecimal(number)  
{  
 int dval=0, base=1, rem;  
 while(number > 0)  
 {  
 rem = number % 10;  
 dval = dval + rem \* base;  
 num = number / 10;  
 base = base \* 2;  
 }  
 return dval;  
}

1. Print the prime numbers from an array up to given value n by using existing function.int isprime(int num)  
   {  
    // type your code here  
   }  
   int main()  
   {  
    int n, m, arr[100], size=0, i;  
    scanf(“%d”, &n);  
    for(m = 2; m <= n; m++)  
    {  
    if(isprime(m))  
    {  
    arr[size++]= m;  
    }  
    }  
    for(i = 0; i < size; i++)  
    {  
    printf(“%d\n”, arr[i]);  
    }  
    return 0;  
   }

Answer:  
int isprime(int num)  
{  
 int i;  
 int isprime = 1;  
 for(i = 2; i <= num / 2; i++)  
 {  
 if(num % i == 0)  
 {  
 isprime = 0;  
 break;  
 }  
 }  
 return isprime;  
}

1. What are different types of modifiers in C?There are 5 modifiers available in C language. They are: short, long, signed, unsigned, and long long
2. What is a static variable?A static local variable retains its value between the function call and the default value is 0. The  
   following function will print 1 2 3 if called thrice.
3. a++ or a = a+1, which can be recommended to increment the value by 1 and why?  
   a++, as it is single machine instruction (INC) internally.
4. What is a dangling pointer?A pointer initially holding a valid address, but later the held address is released or freed. Then  
   such a pointer is called as a dangling pointer.
5. What are lvalue and rvalue?The expression appearing on the right side of the assignment operator is called as rvalue. Rvalue is assigned to an lvalue, which appears on the left side of the assignment operator. The lvalue should designate to a variable not a constant.
6. Explain the use of %i format specifier w.r.t scanf().Can be used to input integer in all the supported format.
7. When to use -> (arrow) operator.  
   If the structure/union variable is a pointer variable, to access structure/union elements the  
   arrow operator is used.
8. Which built-in library function can be used to re-size the allocated dynamic memory?realloc().
9. What is typecasting?Typecasting is a way to convert a variable/constant from one type to another type.
10. What is meant by Compilation?The process of translating source code written in high level to low-level machine code is called  
    as Compilation. The compilation is done by special software known as a compiler. The compiler  
    checks source code for any syntactical or structural errors and generates object code with  
    extension .obj (in Windows) or .o (in Linux) if source code is error free.
11. What are the stages in C compilation?Preprocessing, Compilation, Assembling and Linking.
12. What do you mean by pre-processing a source file?The C compilation begins with pre-processing of a source file. Pre-processor is a small software  
    that accepts C source file and performs below tasks.  
    – Remove comments from the source code.  
    – Macro expansion.  
    – Expansion of included header files.  
    After pre-processing, it generates a temporary file with .i extension. Since it inserts the contents of header files to our source code file. Pre-processor generated file is larger than the original  
    source file.
13. Difference between the header file and library file.In simple terms, the library contains function body whereas header file contains function prototype.
14. What is the difference between far and near pointers?In the first place, they are non-standard keywords. A near pointer can access only 2^15 memory  
    space and the far pointer can access 2^32 memory space. Both the keywords are implementation  
    specific and are non-standard.
15. What is a ternary operator and define its syntax?Ternary operator is the same as if else control statement in C.  
    Syntax : (Condition? true\_value: false\_value);  
    Example: (A &gt; 100? 0: 1);
16. Difference between **memcpy**() and **strcpy**() functions in C.memcpy() function is used to copy a specified number of bytes from one memory to another.  
    Whereas, strcpy() function is used to copy the contents of one string into another string.  
    memcpy() function acts on memory rather than value. Whereas, strcpy() function acts on value  
    rather than memory.
17. What is const pointer in C?Const pointer is a pointer that can’t change the address of the variable that is pointing to. Once  
    const pointer is made to point one variable, we can’t change this pointer to point to any other  
    variable. This pointer is called const pointer.
18. List out some of C compilers.clang  
    Cygwin  
    Digital mars  
    GCC compiler  
    MikroC Compiler
19. What is the difference between variable declaration and variable definition in C?

Variable declaration tells the compiler about data type and size of the variable. Whereas, variable definition allocates memory to the variable

Variable can be declared many times in a program. But, definition can happen only one time for a variable in a program.

Variable declaration is for assignment of properties and identification to a variable. Whereas, a variable definition is for assignments of storage space to a variable

1. What is enum in C?

Enumeration is a data type that consists of named integer constants as a list.

It starts with 0 (zero) by default and value is incremented by 1 for the sequential identifiers in the list.

1. What will i and j equal after the code below is executed? When these operators precede a variable, the value of the variable is modified first and then the modified value is used. For example, if we modified the above code snippet to instead say int j = ++i;, i would be incremented to 6 and then j would be set to that modified value, so both would end up being equal to 6.
2. Is there a difference between class and struct?  
   The only difference between a class and struct are the access modifiers. Struct members are  
   public by default; class members are private. It is good practice to use classes when you need an  
   object that has methods and structs when you have a simple data object.
3. Explain the volatile and mutable keywords.  
   The volatile keyword informs the compiler that a variable may change without the compiler knowing it. Variables that are declared as volatile will not be cached by the compiler, and will thus always be read from memory. The mutable keyword can be used for class member variables. Mutable variables are allowed to change from within const member functions of the class.
4. How many times will this loop execute? Explain your answer.unsigned char half\_limit = 150;  
   for (unsigned char i = 0; i &lt; 2 \* half\_limit; ++i)  
   {  
    // do something;  
   }  
   Code will result in an infinite loop.  
   The expression 2 \* half\_limit will get promoted to an int (based on C++ conversion rules) and will have a value of 300. However, since i is an unsigned char, it is represented by an 8-bit value which, after reaching 255, will overflow (so it will go back to 0) and the loop will, therefore, go on forever.
5. What is a main() and difference b/w void main() and int main()?Main() is an entry point ( main function) which is in most programming languages, When compiler begins compile the program, It looks for an entry point, and main() acts as an entry point in C program, or we can say main is a thread/ process/ function that invokes automatically by the compiler when program is being executed.

## TCS (C)

1. Eesha was in a wonderland where she saw a treasure trove of seven items of various items (in lakhs) and weights (in kgs) as per the table given below.

|  |  |
| --- | --- |
| Value | Weight |
| 12 | 4 |
| 10 | 6 |
| 8 | 5 |
| 11 | 7 |
| 14 | 3 |
| 5 | 10 |
| 5 | 12 |

She wanted to bring back maximum value of items but she was not able to carry more than 10 kgs. Using dynamic programing, what is the maximum value of of the items that she could carry back with her.

**Answer: 26**

1. In c language, if a function return type is not explicitly defined then it defaults to what data type?

**Answer: i**nt

1. Which of the following syntax is correct for command –line arguments?
   1. int main (char \*argv[], int argc)
   2. none of the three options
   3. int main()

{

int argv, char \*argc[];

}

* 1. int main(int var, char \*varg[])

**Answer**: int main (int var, char \*varg[])

1. **Advanced** The figure depicts a search space in which the nodes are labeled with names like A,B,A1,B1. Node S is the start node. The goal are drawn as square boxes and the other noted in circle. Enter answer as a sequence of node separated by a comma, please DO NOT enter any blanks anywhere in the response

For example, if the answer (order of nodes) is a followed by c, followed by A1, followed by D, the answer should be A,C,A1,D

Starting with the node start node, list the order in which the depth first search algorithm explore the graph till termination, searching from right to left until it reaches one of the goal nodes.

[gallery ids=”1695”]

**Answer**: S,C,J,T,I1

1. The full set of operations allowed on a stack are

|  |
| --- |
| * 1. Push, pop |
| * 1. Push, pop, remove |
| * 1. Push, pop, add, remove |
| * 1. Push, pop, add, remove, substitue |

1. Realloc () function is used to:

|  |
| --- |
| * 1. Get back the memory that was released earlier using dree() function. |
| * 1. Reallocate a file pointer when switching between files. |
| * 1. Change the size of an array |
| * 1. Change the size of dynamically allocated memory |

**Answer**: change the size of dynamically allocated memory.

1. **Advanced** Consider a hash function that distributes keys uniformly. The hash table size is 20. After hashing of how many keys will the probability that any new key hashed collides with an existing one exceed 0.5.

|  |
| --- |
| * 1. 10 |
| * 1. 7 |
| * 1. 6 |
| * 1. 5 |

**Answer**: 5

1. Which of the below is NOT a data type in C language:

|  |
| --- |
| * 1. Signed int |
| * 1. Big int |
| * 1. Short int |
| * 1. Long int |

1. Eesha wants to implement an image viewer application to view images in a given folder. The application will be able to display an image and will also know what its next and previous images are at any given point of time so that the user can view next/previous image by pressing right/left keys on the keyboard. Which data structure is appropriate for Esha to use?

|  |
| --- |
| * 1. Tree |
| * 1. Queue |
| * 1. Linked List |
| * 1. Stack |

**Answer**: Linked List

1. The pseudo code below sorts an array using bubble sort. Here A is the array and the “n” is the number of element in it. Function swap exchanges the value of 2 given value.



This function is called with A and 7 as parameter where the array a initially contains the element 64, 34, 25, 12, 22, 11, 9

|  |
| --- |
| * 1. 34 25 12 22 11 9 64 |
| * 1. 25 12 22 11 9 34 64 |
| * 1. 11 9 12 22 25 34 64 |
| * 1. 12 11 9 22 25 34 64 |

**Answer**: 25 12 22 11 9 34 64

1. **Advanced** Consider a hash function that distributes keys uniformly. The hash table size is 20. After hashing of how many keys will the probability that any new key hashed collides with an existing one exceed 0.5.

|  |
| --- |
| * 1. 10 |
| * 1. 7 |
| * 1. 6 |
| * 1. 5 |

**Answer**: 5

1. #define used to

|  |
| --- |
| * 1. Define a variable |
| * 1. Define a macro |
| * 1. Define a function |
| * 1. Define a constant |

**Answer**: Define a macro

1. What type of data structures are queues?

|  |
| --- |
| * 1. First in last out |
| * 1. First in first out |
| * 1. Last in first out |
| * 1. Last in last out |

1. Which of the following is NOT a valid storage class in C language?

|  |
| --- |
| * 1. Extern |
| * 1. Dynamic |
| * 1. Register |
| * 1. Auto |

**Answer**: Dynamic

1. Eesha is developing a word processing software in which she wants to provide undo feature, the software will maintain all the sequential changes and at any point of time pressing control z will undo the latest change, what data structure should Eesha use for this?

|  |
| --- |
| * 1. Stack |
| * 1. Queue |
| * 1. Linked list |
| * 1. Array |

**Answer**: Stack

1. adf

#include

Main(int argc, char \*\*argv)

{

printf(“%s\n”, argv[--argc]);

return 1;

}

The above program was run with the following command line parameters

Asha usha nisha easha

What was the output?

|  |
| --- |
| 1. Nisha |
| 1. Unable to run due to compilation error |
| 1. No output, run time error |
| 1. Eesha |

**Answer:** Eesha

1. Considering a hash table with 100 slots. Collisions are resolved using chaining. Assuming simple uniform hashing, what is the probability that the first 3 slots are unfilled after the first 3 insertions? (NOTE:100 ^ 3 means 100 raised to the power 3)

|  |
| --- |
| * 1. (97 \* 96 \*95) / 100 ^ 3 |
| * 1. (97 \* 96 \*95) / (6 \* 100 ^ 3) |
| * 1. (97 \* 97 \* 97) / 100 ^ 3 |
| * 1. (99 \* 98 \* 97) /100 ^ 3 |

**Answer:** (97 \* 97 \* 97) / 100 ^ 3

1. **Advanced** Consider the following graph starting at node A. In what order will the nodes be visited using a breadth first search?



NOTE 1: Is there is ever a decision between multiple neighbor nodes in the algorithm, assume we always choose the letter closet to the beginning of the first alphabet

NOTE 2: Enter the answer as a sequence of nodes separated by a comma. Please do NOT enter any blanks anywhere in the response. For example, is the answer (order of nodes) is A followed by C, followed by X, followed by D. The answer should be A,C,X,D.

**Answer**: A,B,D,E,G,C,H,F

1. This function is called with A and 7 as parameters where the array A initially contains the elements 34,14,65 be the value of the elements in A after 3 iterations of the outer loop?



|  |
| --- |
| * 1. 14 12 22 5 34 65 71 |
| * 1. 14 34 22 12 65 5 71 |
| * 1. 14 22 12 34 5 65 71 |

**Answer**: 14 12 22 5 34 65 71

1. Eesha is developing an IP telephony software in which the audio is enclosed and transmitted by the sender as network packets through a communication channel. At the other end these packets are assembled and processed further, Eesha recognizes that there may be a very large number of packets this number is unknown and which will be processed while more packets are being received. Assume that the packets arrive in right order. What data structure should Eesha use?

|  |
| --- |
| * 1. Array |
| * 1. List |
| * 1. Queue |
| * 1. Stack |

**Answer**: List

1. A structure in C language is

|  |
| --- |
| * 1. System defined data type that holds predefined collection of data types |
| * 1. User defined data type holding similar or dissimilar data types |
| * 1. Another name for union data type |
| * 1. A collection of similar user defined data type |

**Answer**: User defined data type holding similar or dissimilar data types

#include  
int main(int argc, char \*\* argv)  
{  
 char \*\*items;  
 int j = 3, i;  
 items = argv;  
 for(i = 1; (i%4); i++)  
 {  
 int \*\*p = &items[j];  
 printf(“%c”, \*\*p);  
 j–;  
 }  
 return 0;  
}

The above code is run with three command line parameters mentioned below:

Paper Ink Pen

What will be the output of the above program?

1. PIP
2. Pen
3. Pap
4. Ink

Answer: a

1. Improper formation, which of the following data-structures can cause un-intentional looping program that uses it.

|  |
| --- |
| * 1. Linked list |
| * 1. Array |
| * 1. Queue |
| * 1. Stack |

**Answer**: Linked list

1. What is the data type that occupies the least storage in “C” language?

Please give the answer in the blank line: \_\_\_\_\_\_\_\_\_\_\_\_

**Answer**: char

1. Which of the following is true?

|  |
| --- |
| * 1. Array is a dynamic data structure whose size can be changed while stacks are static data structures whose sizes are fixed. |
| * 1. Array elements can be accessed and modified (elements can be added or removed) only at the ends of the array while any elements of the stack can be accessed or modified randomly through their indices. |
| * 1. An array can have elements of different data types |
| * 1. Elements of a linked-list can accessed only sequentially |

**Answer**: d

1. Which of the following statements is FALSE?

|  |
| --- |
| * 1. The time complexity of binary search is O(log n) |
| * 1. A linear search requires a sorted list. |
| * 1. A binary search can operate only on a sorted list. |
| * 1. The time complexity of linear search is O(n). |

**Answer**: b

1. Eesha wrote a function fact() in “C” language to calculate factorial of a given number and saved the file as fact.c. She forgot to code the main function to call this fact function. Will she be able to compile this fact.c without the main() function?
   1. Yes, she can compile provided the compiler option –nostrict-checking is enabled.
   2. No, she can not compile as main function is required to compile any C program file.
   3. Yes, she can compile as main() is not required at compile time.
   4. Yes, she can compile and run as the system will supply default values to fact function.

**Answer:** b

1. The difference between variable declaration and variable definition is:

|  |
| --- |
| * 1. Declaration and definition are the same. There is no difference. |
| * 1. A declaration is used for variables and definitions is used for functions. |
| * 1. Declaration associates type to the variable whereas definition associates scope to the variable. |
| * 1. Declaration associates type to the variable whereas definition gives the value to the variable. |

**Answer**: d

1. **Advanced** The inorder and preorder traversal of a binary tree are **d b e a f c g** and **a b d e c f g** respectively.

The post-order traversal of the binary tree is:

|  |
| --- |
| * 1. d e b f g c a |
| * 1. d e f g b c a |
| * 1. e d b f g c a |
| * 1. e d b g f c a |

**Answer:** a

1. Eesha wrote a recursive function that takes the first node in a linked list as an argument, reverses the list, returning the first Node in the result. The pseudo code for this function is given below. However, she did not get the correct result. In which line number did she make a mistake?

Please give the answer in the blank line: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

public Node reverse(Node first)

{

if(first == null) return null;

if(first.next == null) return first;

Node second = first.next;

Node rest = reverse(second);

second.next = first;

first.next = null;

return rest.next;

}

**Answer**: return rest

1. The longest common subsequence (LCS) problem is the problem of finding the longest subsequence common to a set of sequences (often just two sequences). A subsequence is a sequence that can be derived from another sequence by deleting some or no elements without changing the order of the remaining elements. One form of implementation of LCS function is given below. The function takes as input sequences X[1..m] and Y[1..n], computes the length of the Longest common subsequence between X[1..i] and Y[1..j] for all 1im and 1jn, and stores it in C[i,j]. C[m,n] will contain the length of the LCS of X and Y.

function LCS length (X[1..m], Y[1..n])

c=array(0..m, 0..n)

for i = 0..m

c[i,0] = 0

for j = 0 ..n

c[0,j] = 0d

for i = 1..m

for j = 1..n

if X[i] = Y[j]

c[i,j] = c[i-1, j-1] + 1

else

c[i,j] = max(C[i, j-1], c[i-1, j])

return c[m,n]

Eesha used the above algorithm to calculate the LCS length between “kitten” and “string”. What was the result she got?

Please give the answer in the blank line \_\_\_\_\_\_\_\_\_\_\_\_\_

1. How many times the below loop will be executed?

#include

int main()

{

int x, y;

for(x=5; x>=1; x--)

{

for(y=1; y<=x; y++)

printf(“%d\n”, y);

}

}

|  |
| --- |
| * + 1. 15 |
| * + 1. 11 |
| * + 1. 10 |
| * + 1. 13 |

**Answer**: A

1. Where are the local variables stored?

|  |
| --- |
| 1. Disk |
| 1. Stack |
| 1. Heap |
| 1. Code |

**Answer**: B

1. Which data type has more precision?

|  |
| --- |
| 1. double |
| 1. float |
| 1. int |
| 1. long int |

1. Find the output of the following code?

int main

{

float f = 0.1;

if(f = 0.1)

printf(“yes”);

else

print(“no”);

}

1. What will happen if in a C program you assign a value to an array element whose subscript exceeds the size of array?

|  |
| --- |
| 1. The element will be set to 0. |
| 1. The compiler would report an error. |
| 1. The program may crash if some important data gets overwritten. |
| 1. The array size would appropriately grow. |

**Answer:** C

**Explanation**: If the index of the array size is exceeded, the program will crash. Hence “option c” is the correct answer. But the modern compilers will take care of this kind of errors.

1. What does the following declaration mean?

**int (\*ptr)[10];**

|  |
| --- |
| 1. prt is array of pointers to 10 integers |
| 1. ptr is a pointer to an array of 10 integers |
| 1. ptr is an array of 10 integers |
| 1. ptr is an pointer to array |

**Answer:** B

1. In C, if you pass an array as an argument to a function, what actually gets passed?

|  |
| --- |
| 1. Value of elements in array |
| 1. First element of the array |
| 1. Base address of the array |
| 1. Address of the last element of array |

**Answer:** C

**Explanation**: The statement ‘C’ is correct. When we pass an array as a function argument, the base address of the array will be passed.

1. What will be the output of the program?

#include

int main()

{

int a[5] = {5, 1, 15, 20, 25};

int i, j, m;

i = ++a[1];

j = a[1]++;

m = a[i++];

printf(“%d,%d,%d”, i, j, m);

return 0;

}

|  |
| --- |
| 1. 2, 1, 15 |
| 1. 1, 2, 5 |
| 1. 3, 2, 15 |
| 1. 2, 3, 20 |

**Answer**: C

**Explanation**:

Step 1: int a[5] = {5, 1, 15, 20, 25}; The variable arr is declared as an integer array with a size of 5 and it is initiazed to a[0] = 5, a[1] = 1, a[2] = 15, a[3] = 20, a[4] = 25 .  
Step 2: int i, j, m; The variable i,j,m are declared as an integer type.  
Step 3: i = ++a[1]; becomes i = ++1; Hence i = 2 and a[1] = 2  
Step 4: j = a[1]++; becomes j = 2++; Hence j = 2 and a[1] = 3.  
Step 5: m = a[i++]; becomes m = a[2]; Hence m = 15 and i is incremented by 1(i++ means 2++ so i=3)  
Step 6: printf(“%d, %d, %d”, i, j, m); It prints the value of the variables i, j, m  
Hence the output of the program is 3, 2, 15

1. Is there any difference in the following declarations?

int fun(int arr[]);

int fun(itn arr[2]);

|  |
| --- |
| 1. Yes |
| 1. No |

**Answer**: B

**Explanation**: No, both the statements are same. It is the prototype for the function fun() that accepts one integer array as a parameter and returns an integer value.

1. Are the expressions arr and &arr same for an array of 10 integers?

|  |
| --- |
| 1. Yes |
| 1. No |

**Answer:** B

**Explanation**: Both mean two different things arr gives the address of the first int, whereas the &arr gives the address of array of int’s

1. Which of the following statements should be used to obtain a remainder after dividing 3.14 by 2.1?

|  |
| --- |
| 1. rem = 3.14 % 2.1; |
| 1. rem = modf(3.14, 2.1); |
| 1. rem = fmod(3.14, 2.1); |
| 1. Remainder cannot be obtain in floating point division. |

**Answer**: C

**Explanation**: fmod(x,y) – calculates x modulo y, the remainder of x/y.

This function is the same as the modulus operator. But fmod() performs floating point divisions.

1. What are the types of packages?

|  |
| --- |
| 1. Internal and External |
| 1. External, Internal and None |
| 1. External and None |
| 1. Internal |

**Answer**: B

1. Which of the following special symbols are allowed in a variable name?

|  |
| --- |
| 1. \* (asterisk) |
| 1. | (pipeline) |
| 1. – (hyphen) |
| 1. \_ (underscore) |

**Answer:** D

**Explanation:** Variable names in C are made up of letters (upper and lower case) and digits. The underscore character (“\_”) is also permitted Names must not begin with a digit.

1. Is there any difference between following declarations?
2. extern int fun();
3. int fun();

|  |
| --- |
| 1. Both are identical |
| 1. No difference, except extern int fun(), is probably in another file |
| 1. int fun(); is overrided with extern int fun(); |
| 1. None of these |

**Answer**: B

**Explanation**: extern int fun(); declaration in C is to indicate the existence of a global function and it is defined externally to the current module or in another file. int fun(); declaration in C is to indicate the existence of a function inside the current module or in the same file.

## Lucid Imaging (C)

1. To create a linked structure, each element must have one member that is a

|  |  |
| --- | --- |
| 1. reference to the element type | 1. pointer to NULL |
| 1. pointer to the element type | 1. pointer to the head of the list |

**Answer:** C

1. What will be the output when following code is executed

int main()

{

float f = 10.0;

printf(“\n f=%d”, f);

return 0;

}

|  |  |  |  |
| --- | --- | --- | --- |
| 1. 10.0 | B.10 | C. 0 | D. Garbage value |

**Answer:** C

1. Which of the following declares a to be a const pointer to an integer?

|  |  |  |  |
| --- | --- | --- | --- |
| 1. int const a; | 1. const int \*a; | 1. int \* const a; | intconst\* a const |

**Answer:** C

1. What output is produced by the following code?

int main()

{

char str[] = “basic”;

char \*s = str;

printf(“\n%s”,s+++3);

printf(“\t%s”, s);

return 0;

}

|  |  |  |  |
| --- | --- | --- | --- |
| 1. ic asic | 1. c basic | 1. asic sid | 1. cc |

**Answer:** A

1. Consider the following code:

int x[] = {0,1,2,3};

int temp, i=0, j=3;

while (i < j)

{

temp = x[i];

x[i] = x[j];

x[j] = 2\*temp;

i++;

j--;

}

|  |  |  |  |
| --- | --- | --- | --- |
| 1. {0,1,2,3} | 1. {0,2,4,6} | C. {3,2,1,0} | D. {3,2,2,0} |

**Answer:** D

1. What output is produced by the following code?

#include<conio.h>

void main()

{

char s[] = {‘a’, ‘b’, ‘c’, ‘d’, ‘c’, ‘\0’};

char \*p, \*str, \*str1;

p = &s[3];

str1 = s;

printf(“%d”, ++\*p + ++\*str1 – 32);

}

|  |  |  |  |
| --- | --- | --- | --- |
| 1. 166 | 1. 167 | 1. 168 | 1. None of the above |

**Answer:** B

1. What output is produced by the following code?

#include<stdio.h>

int main()

{

printf(“%d,%d,%d”, sizeof(3.0),sizeof(‘3’),sizeof(3.0f));

return 0;

}

|  |  |  |  |
| --- | --- | --- | --- |
| 1. 8,1,4 | 1. 4,1,4 | 1. 8,2,4 | D.10,2,4 |

**Answer:** C

1. What output is produced by the following code?

#include<stdio.h>

void main()

{

static int var = 5;

printf(“%d”, var--);

if(var)

main();

}

|  |  |
| --- | --- |
| 1. 5 5 5 5 5 | 1. 5 4 3 2 1 |
| 1. 5 4 3 2 1 0 | 1. Infinite Loop |

**Answer:** B

1. What output is produced by the following code?

#include<stdio.h>

void main()

{

printf(“%x”, -1 << 4);

}

|  |  |  |  |
| --- | --- | --- | --- |
| 1. 0 | 1. fff0 | 1. 10 | 1. ffe0 |

**Answer:** B

1. An identifier must begin with a

|  |
| --- |
| 1. letter or digit and can contain letters, digits, or underscores |
| 1. digit and can contain letters, digits or underscores |
| 1. letter, digit, or underscore and can contain letters, digits or underscores |
| 1. letter or underscore and can contain letters, digits, or underscores |

**Answer:** A

## RiDSYS (Java)

1. Which of the following is best fit for storing the value between 0 to 200?

|  |  |  |  |
| --- | --- | --- | --- |
| * 1. int | * 1. float | * 1. short | * 1. byte |

1. Given:

public class MyLoop{

public static void main(String[] args){

String[] sa = {“tom”, “jerry”);

for (int x=0; x<3; x++){

for(String s:sa){

System.out.print(x + “ ” + s);

if(x == 1){

break;

}

}

}

}

}

What is the result?

|  |
| --- |
| 1. 0 tom 0 jerry 1 tom 1 jerry |
| 1. 0 tom 0 jerry 2 tom 2 jerry |
| 1. 0 tom 0 jerry 1 tom 2 tom 2 jerry |
| 1. 0 tom 0 jerry 1 tom 1 jerry 2 tom 2 jerry |

1. Given:

class Feline{

public String type = “f “;

public Feline(){

System.out.print(“feline “);

}

}

public class Cougar extends Feline {

public Cougar(){

System.out.print(“cougar “);

}

void go(){

type = “c ”;

System.out.print(this.type + super.type);

}

public static void main(String[] args){

new Cougar().go();

}

}

What is the result?

|  |
| --- |
| 1. cougar c f |
| 1. feline cougar c c |
| 1. feline cougar c f |
| 1. Compilation fails |

1. Given:

import java.util.\*;

public class App{

public static void main(String[] args){

List p = new ArrayList();

p.add(7);

p.add(1);

p.add(5);

p.add(1);

p.remove(1);

System.out.println(p);

}

}

What is the result?

|  |
| --- |
| 1. [7, 1, 5, 1] |
| 1. [7, 5, 1] |
| 1. [7, 5] |
| 1. [7, 1] |

1. Given:

class Alpha{

String getType(){

return “alpha”;

}

}

class Beta extends Alpha{

String getType(){

return “beta”;

}

}

public class Gamma extends Beta{

String getType(){

return “gamma”;

}

public static void main(String[] args){

Gamma g1 = new Alpha();

Gamma g2 = new Beta();

System.out.println(g1.getType() + “ “ + g2.getType());

}

}

What is the result?

|  |  |  |  |
| --- | --- | --- | --- |
| 1. alpha beta | 1. beta beta | 1. gamma gamma | 1. Compilation fails. |

1. Match the following

|  |  |
| --- | --- |
|  | 1. Sequence Diagram |
|  | 1. Activity Diagram |
|  | 1. Class Diagram |
|  | 1. Use – Case Diagram |

|  |  |
| --- | --- |
|  | 1. HAS – A relationship 2. IS – A relationship |

1. adfsf

|  |  |
| --- | --- |
|  | 1. Exceptions 2. Error 3. Object 4. Throwable |

|  |
| --- |
|  |
| 1. New Customer 2. Credit Payment Service 3. Identity Provider 4. Registered Customer 5. Web Customer |

|  |  |
| --- | --- |
|  | 1. JVM 2. JAVAC – COMPILER 3. BYTE CODE (.class) |

1. Sanjeeth is making a questionnaire of True or False questions. He want to define a data type which stores the response of the candidate to the question. Which is the most-suitable data type for this purpose?

|  |
| --- |
| 1. Integer |
| 1. Boolean |
| 1. Float |
| 1. Character |

1. What will be the output of the following pseudo-code statements:

integer a = 456, b, c, d=10;

b = a/d;

c = a-b;

print c;

|  |  |  |  |
| --- | --- | --- | --- |
| 1. 410 | 1. 410.4 | 1. 411 | 1. 411.4 |

1. Sanjay want to store the mark of the student which has the range of 0 -100, How many bits will you assign to the data type to be able to store the mark value?

|  |  |  |  |
| --- | --- | --- | --- |
| * 1. 5 | * 1. 6 | * 1. 7 | * 1. 8 |

1. What is implied by the argument of a function?

|  |
| --- |
| 1. The variables passed to it when it is called |
| 1. The value it returns on execution |
| 1. The execution code inside it |
| 1. Its return type |

1. What does the following function do?

int operation(int a, int b) {

if(a>b)

return operation(b,a)

else

return a;

}

|  |
| --- |
| 1. Always returns the first parameter |
| 1. Returns the min of (a, b) |
| 1. Returns the max of (a, b) |
| 1. Loops forever |

1. Sanjana wants to make a program to print the sum of all perfect cubes, where the value of the cubes goes from 0 to 100. She writes the following program:

integer I = 0, a; //statement 1

integer sum = 0; a = (I\*I\*I);

while (I < 100) //statement 2

{

sum = sum + a; //statement 3

I = l +1; //statement 4

} print sum;

Does this program have an error? if yes, which one statement will you modify to correct it?

|  |
| --- |
| 1. Statement 1 |
| 1. Statement 2 |
| 1. None of these |
| 1. Statement 3 |
| 1. Statement 4 |

1. Consider the given code:

for i = m to n increment 2

{print “Hello!”}

For m < n and exactly one of (m, n) is even, how many times will Hello be printed?

|  |
| --- |
| 1. (n – m + 1) / 2 |
| 1. 1 + (n – m) / 2 |
| 1. 1 + (n –m) / 2 if m is even, (n – m + 1) / 2 if m is odd |
| 1. (n – m + 1) / 2 if m is even, 1 + (n –m) / 2 if m is odd |

1. The Object-Oriented Paradigm necessarily contains which of these properties:

|  |  |  |
| --- | --- | --- |
| 1. Encapsulation | 1. Inheritance | 1. Recursion |

|  |
| --- |
| 1. (II) Only |
| 1. (I) Only |
| 1. (I) and (II) only |
| 1. (I), (II) and (III) |

1. Smita is making a database of animal types in a zoo and their properties. The possible animals are dog, lion and giraffe. Each one has attributes like food-habit, habitat, color and sound. She uses the object oriented programming paradigm for this. How will he conceptualize the system?

|  |
| --- |
| 1. ‘Animal’ will be a class; ‘dog’, ‘lion’, ‘zebra’ the objects and ‘food-habit’, ‘habitat’, ‘color’ and ‘sound’, the data members of the class. |
| 1. ‘Animal’ will be a class; ‘dog’, ‘lion’, ‘zebra’ the data members of the class; ‘food-habit’, ‘habitat’, ‘color’ |
| 1. ‘Animal’ will be ‘object’; ‘dog’, ‘lion’, ‘zebra’ the classes and ‘food-habit’, ‘habitat’, ‘color’ and ‘sound’ the data members of the class. |
| 1. None of these. |

## RiDSYS (C)

1. Consider the following program

int main()

{

int n, sum=0;

printf(“Enter n value:”);

scanf(“%d”, &n);

while(n>0) {

sum += \_\_\_\_\_\_\_\_\_\_\_\_\_\_; //Statement 1

n = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; //Statement 2

}

printf(“%d”, sum);

}

Sample Input and output:

|  |
| --- |
| 1. Input : n = 6784 Output: 25 |
| 1. Input : n = 1234 Output: 10 |
| 1. Input : n = 5621 Output: 14 |

Fill out the Statement 1 and Statement 2

## SMI (Java)

1. Which cannot directly cause a thread to stop executing?
2. Calling the SetPriority() method on a Thread object.
3. Calling the wait() method on an object.
4. Calling notify() method on an object.
5. Calling read() method on an InputStream object.3
6. What will be the output of the program?

class Q207

{

public static void main(String[] args)

{

int i1 = 5;

int i2 = 6;

String s1 = “7”;

System.out.println(i1+i2+s1); /\*Line 8 \*/

}

}

1. 18
2. 117
3. 567
4. compile error
5. class X implements Runnable

{

public static void main(String args[])

{

/\* Missing code? \*/

}

public void run(){ }

}

which of the following line of code is suitable to start a thread?

1. Thread t = new Thread(X);
2. Thread t = new Thread(X); t.start();
3. X run = new X(); Thread t = new Thread(run); t.start();
4. Thread t = new Thread(); x.run();
5. Which will contain the body of the thread?
6. run();
7. start();
8. stop();
9. main();
10. In order for a source code file, containing the public class Test, to successfully compile, which of the following must be true?
11. It must have a package statement
12. It must be named Test.java
13. It must import java.lang
14. It must declare a public class named Test
15. Comparison/Logical operators are used for testing and magnitude
16. TRUE
17. FALSE
18. When two or more objects are added as listeners for the same event, which listener is first invoked to handle the event?
19. The first object that was added as listener.
20. The last object that was added as listener.
21. There is no way to determine which listener will be invoked first.
22. It is impossible to have more that one listener for a given event.
23. What is the preferred way to handle an object's events in Java 2?
24. Override the object's handleEvent() method.
25. Add one or more event listeners to handle the events.
26. Have the object override its processEvent() methods.
27. Have the object override its dispatchEvent() methods.
28. What tags are mandatory when creating HTML to display an applet?
29. name, height, width
30. code, name
31. codebase, height, width
32. code, height, width
33. Which of the following are direct or indirect subclasses of Component?
34. Button
35. Label
36. CheckboxMenuItem
37. Frame
38. Which are true about the Container class?
39. The validate() method is used to cause a Container to be laid out and redisplayed.
40. The add() method is used to add a Component to a Container.
41. The getBorder() method returns information about a Container's insets
42. The getComponent() method is used to access a Component that is contained in a Container.
43. The List component does not generate any events.
44. TRUE
45. FALSE
46. An application has a frame that uses a Border layout manager. Why is it probably not a good idea to put a vertical scroll bar at North in the frame?
47. The scroll bar's height would be its preferred height, which is not likely to be enough.
48. The scroll bar's width would be the entire width of the frame, which would be much wider than necessary.
49. Both a and b.
50. Neither A nor B. There is no problem with the layout as described.
51. What will be the output of the program?

int i=0, j=5;

tp: for(;;)

{

i++;

for(;;)

{

if(i > --j)

{

break tp;

}

}

System.out.println(“i = “ + I + “,j = “ + j);

}

1. i = 1, j = 0
2. i = 1, j = 4
3. i = 3, j = 4
4. compilation fails

import java.awt.\*;

class Ticker extends Component

{

public static void main(String[] args)

{

Ticker t = new Ticker();

/\* Missing Statements ? \*/

}

}

which two of the following statements, inserted independently, could legally be inserted into missing section of this code?

1. Boolean test = (Component instanceof t);
2. boolean test = (t instanceof Ticker);
3. boolean test = t.instanceof(Ticker);
4. boolean test = (t.instanceof Component);
5. 1 and 4
6. 2 and 3
7. 1 and 3
8. 2 and 4
9. What will be the output of the program?

Public class Switch2

{

final static short x = 2;

public static int y = 0;

public static void main (String[] args)

{

for(int z=0; z<3; z++)

{

switch(z)

{

case y: System.out.print(“0”); /\*Line 11 \*/

case x-1: System.out.print(“1”); /\*Line 12 \*/

case x: System.out.print(“2”); /\*Line 13 \*/

}

}

}

}

1. 0 1 2
2. 0 1 2 1 2 2
3. compilation fails at line 11
4. compilation fails at line 12
5. You want a class to have access to members of another class in the same package, Which is the most restrictive access that accomplishes this objective?
6. public
7. abstract
8. protected
9. default access
10. Which class does not override the equals() and hashCode() methods, inheriting them directly from class Object?
11. java.lang.String
12. java.lang.Double
13. java.lang.StringBuffer
14. java.lang.Character
15. Which interface provides the capability to store objects using a key-value pair?
16. java.util.Map
17. java.util.Set
18. java.util.List
19. java.util.Collection
20. What is the numerical range of char data type?
21. 0 to 32767
22. 0 to 65535
23. -256 to 255
24. -32768 to 32767

## SOLARTIS (Java)

1. Which one is a infinite loop
2. for(i=0; ; i++)
3. for(;;l)
4. All the above
5. Which is not a valid data type
6. numeric
7. Boolean
8. short
9. All the above
10. Which is a reserved word in the java program language?
11. method
12. native
13. sub classes
14. array
15. When calling string is less than first string what value will come if we use compare to method?
16. greater than or equal to 0
17. less than 0
18. zero
19. none
20. What expression will come if we divide by zero
21. arithmetic exception
22. runtime error
23. ………………..
24. ………………..
25. What method if we determine by remainder divided
26. remainder
27. IEEE remainder
28. modulus
29. CSI remainder
30. Class string belongs to ………………………………………. Package
31. Which declare abstract method in an abstract JAVA class?
32. Which is not a part of Abstract window Toolkit?
33. Which is the following have automatic type conversion is possible?
34. Class loader in JAVA

## SOLARTIS (SQL)

1. Given table “EMPLOYEE” provided with first name, Department, Salary
2. Write a query to list out the first name, last name, department, salary with the Employees who is having maximum salary order by department.

## Xmplar (Java)

1. What is a valid declaration within an interface?
2. public static short stop = 23;
3. protected short stop = 23;
4. transient short stop = 23;
5. final void madness(short stop);
6. What is the value of “d” after this line of code has been executed?

double d = Math.round(2.5 + Math.random());

1. 2.0
2. 3.0
3. 4.0
4. 2.5
5. What will be the output of the program?

class Test

{

public static void main (String[] args)

{

int x=20;

String sup = (x < 15) ? “small” : (x < 22)? “tiny” : “huge”;

System.out.println(sup);

}

}

1. small
2. tiny
3. huge
4. compilation fails
5. Which cannot directly cause a thread to stop executing?
6. Calling the SetPriority() method on a Thread object.
7. Calling the wait() method on an object.
8. Calling notify() method on an object.
9. Calling read() method on an InputStream object.
10. Which is valid declaration of a float?
11. float f = 1F;
12. float f = 1.0;
13. float f = “1”;
14. float f = 1.0d;
15. What is the numerical range of a char?
16. -128 to 127
17. –(215) to (215) – 1
18. 0 to 32767
19. 0 to 65535
20. What will be the output of the program?

class Equals

{

public static void main(String[] args)

{

int x = 100;

double y = 100.1;

Boolean b = (x = y); /\*Line 7 \*/

System.out.println(b);

}

}

1. false
2. true
3. Compilation fails
4. An exception is thrown at runtime
5. Which of the following will not directly cause a thread to stop?
6. notify()
7. wait()
8. InputStream access
9. sleep()
10. Which class or interface defines the wait(), notify(), and notifyAll() methods?
11. Object
12. Thread
13. Runnable
14. Class
15. What is the most restrictive access modifier that will allow members of one class to have access to members of another class in the same package?
16. public
17. abstract
18. protected
19. default access
20. Which method registers a thread in a thread scheduler?
21. run();
22. start();
23. construct();
24. register();
25. Suppose that you would like to create an instance of a new Map that has an iteration order that is the same as the iteration order of an existing instance of a Map. Which concrete implementation of the Map interface should be used for the new instance?
26. TreeMap
27. HashMap
28. LinkedHashMap
29. The answer depends on the implementation of the existing instance.
30. Given a method in a protected class, what access modifier do you use to restrict access to that method to only the other members of the same class?
31. final
32. static
33. private
34. protected
35. Which is a valid keyword in Java?
36. unsigned
37. Float
38. interface
39. string
40. Which is a valid declarations of a String?
41. String s1 = null;
42. String s2 = ‘null’;
43. String s3 = (String) ‘abc’;
44. String s4 = (String) ‘\ufeed’;
45. Which is true about an anonymous inner class?
46. It can extend exactly one class and implement exactly one interface.
47. It can extend exactly one class and can implement multiple interfaces.
48. It can extend exactly one class or implement exactly one interface.
49. It can implement multiple interfaces regardless of whether it also extends a class.
50. Which of the following are valid calls to Math.max?
51. Math.max(1,4)
52. Math.max(2,3,5)
53. Math.max(1,3,5,7)
54. Math.max(-1.5, -2.8f)

|  |
| --- |
| 1. 1, 2 and 4 |
| 1. 2, 3 and 4 |
| 1. 1, 2 and 3 |
| 1. 3 and 4 |

1. Firstly Java was called \_\_\_\_\_\_\_\_\_\_\_\_ by James Gosling.
2. Greentalk
3. Oak
4. Jave
5. Gosl
6. Which collection class allows you to grow or shrink its size and provides indexed access to its elements, but whose methods are not synchronized?
7. java.util.HashSet
8. java.util.LinkedHashSet
9. java.util.List
10. java.util.ArrayList
11. Which method must be defined by a class implementing the java.lang.Runnable interface?
12. void run()
13. public void run()
14. public void start()
15. void run(int priority)
16. Which is true about a method-local inner class?
17. It must be marked final.
18. It can be marked abstract.
19. It can be marked public.
20. It can be marked static.
21. You want a class to have access to members of another class in the same package. Which is the most restrictive access that accomplishes this objective?
22. public
23. private
24. protected
25. default access
26. What allows the programmer to destroy an object x?
27. x.delete()
28. x.finalize()
29. Runtime.getRuntime().gc()
30. Only the garbage collection system can destroy an object.
31. Which will contain the body of the thread?
32. run();
33. start();
34. stop();
35. main();
36. Which collection class allows you to access its elements by associating a key with an element’s value, and provides synchronization?
37. java.util.SortedMap
38. java.util.TreeMap
39. java.util.TreeSet
40. java.util.Hashtable
41. Which of the following will declare an array and initialize it with five numbers?
42. Array a = new Array(5);
43. int[] a = {23,22,21,20,19);
44. int a[] = new int[5];
45. int [5] array;
46. Which constructs an anonymous inner class instance?
47. Runnable r = new Runnable(){};
48. Runnable r = new Runnable(public void run(){ });
49. Runnable r = new Runnable (public void run(){});
50. System.out.println(new Runnable(){public void run(){}});
51. Which collection class allows you to associate its elements with key values, and allows you to retrieve objects in FIFO (first-in, first-out) sequence?
52. java.util.ArrayList
53. java.utilLinkedHashMap
54. java.util.HashMap
55. Which is a reserved word in the Java programming language?
56. method
57. native
58. subclasses
59. reference
60. Which of the following are valid calls to Math.max?
61. Math.max(1,4)
62. Math.max(2.3, 5)
63. Math.max(1,3,5, 7)
64. Math.max(-1.5, -2.8f)

|  |
| --- |
| 1. 1, 2 and 4 |
|  |
|  |
|  |

public void test(int x)

{

int odd = 1;

if(odd) /\*Line 4 \*/

{

System.out.println(“odd”);

}

else

{

System.out.println(“even”);

}

}

Which statement is true?

1. Compilation fails
2. “odd” will always be output.
3. “even” will always be output.
4. “odd” will be output for odd values of x and “even” for even values.
5. Which statement is true about a static nested class?
6. You must have a reference to an instance of the enclosing class in order to instantiate it.
7. It does not have access to nonstatic members of the enclosing class.
8. It’s variables and methods must be static.
9. It must extend the enclosing class.
10. Which class or interface defines the wait(), notify() and notifyAll() methods?
11. Object
12. Thread
13. Runnable
14. Class