**C Programming & Data Structures**

1. Size of char constant is

1. 1 2. 4 3. 2 4. 0

2. Data stored in computer memory is in

1. binary 2. Character 3. Decimal 4. Hexadecimal

3. Variable can be a

1. Const 2. Volatile 3. Both 1 & 2 4. None of the above

4. Which of the following is invalid identifier?

1. scanf 2. 12xyz 3. Printf 4. xyz12

5. Which of the following is type of scope?

1. Function 2. Prototype 3. Block 4. All of the above

6. To use printf you need a \_\_\_\_\_\_\_\_\_ file

1. studio.h 2. stdio.h 3. stdio.c 4. conio.h

7. Global variables that are declared static are \_\_\_\_\_\_\_

1. Internal to the current translation unit 2. Visible to all translation units

3. Allocated on the heap 4. Read-only subsequent to initialization

8. What is the function of getche()?

1. Gets character from user & show output on the screen 2. Shows the output to user

3. Get character from user and echoes to the screen 4. Get character from user and does not echo to screen

9. In a C program, the first statement that will be executed is:

1. The first executable statement of the program. 2. The first executable statement of the end function.

3. The first executable statement after the comment /\*start here\*/ 4. The first executable statement of the main() function.

10. A value that is acted upon by an operator is known as \_\_\_\_\_\_\_\_\_\_

1. Operand 2. Operator 3. Expression 4. None of the above

11. Which of the following statement is true?

1. The else statement is executed when the condition is true.

2. The else statement cannot be another twoway selection.

3. The else statement can be a null statement.

4. None of the above

12. Which of the following statement is true?

a. An expression is a sequence of operands and operators.

b. Expressions always reduce to a single value.

1. Only a 2. Only b 3. Both a and b 4. None of the above

13. What is the output of following program?

#include<stdio.h>

void main()

{

int c=- -2;

printf("c=%d",++c);

}

1. 2 2. 3 3. Compile time error 4. Run time error

14. What will be the output of following program?

#include<stdio.h>

void main()

{

int a=-2, b=1, c=0, d;

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

printf("%d %d",c,d);

}

1. 0 0 2. 1 1 3. 0 1 4. 1 0

15. What will be the output of following program?

#include<stdio.h>

void main()

{

unsigned char i=0x32;

printf("%d",i>>1 );

}

1. 25 2. 50 3. 75 4. 100

16. Which of the following having lowest precedence?

1. ++ 2. ! 3. - 4. Comma operator

17. What would be output of the following program?

#include <stdio.h>

void main()

{

printf("%p",main);

}

1. Compile time error 2. Runtime error 3. Some address will be printed 4. None of the above

18. What will be the output of following program?

#include<stdio.h>

void main()

{

int n=0;

switch (n++)

{

case 0 : printf (" %d ",n++);

case 1 : printf (" %d ",++n);

case 2 : printf (" %d ",n++);

case 3 : printf (" %d ",++n);

case 4 : printf (" %d ",n++);

break;

}

}

1. 1 2. 2 3. 1 1 3 5 5 4. 1 3 3 5 5

19. What will be the output of following program?

#include<stdio.h>

void main()

{

char n='+';

int a=10,b=20;

switch (n)

{

case '-':

printf ("%d",b-a);

break;

case '+':

printf ("%d",b+a);

break;

default : printf("A=%d B=%d",a,b);

}}

1. 10 2. 30 3. A=10 B=20 4. None of the above

20. Which of the following is/are true about 'While Loop’ ?

A. It is entry controlled

B. Code in loop body executed until loop condition is false

C. Increment Variable is must

1. A 2. A & B 3. B & C 4. None of the above

21. What will be the output of following program?

#include<stdio.h>

void main()

{

int i=0;

while(i<10 && i> 0 && 1)

{

printf(" %d",++i);

i++;

}

}

1. 0 2 4 6 8 2. 1 3 5 7 9 3. Error 4. None of the above

22. Predict error from the following?

#include<stdio.h>

void main()

{

do

{

printf("C-DAC");

}while(0)

printf("ACTS");

}

1. Undefined symbol '0' 2. Possibly incorrect assignment

3. Declaration syntax error 4. None of the above

23. What will be the output of following program?

#include<stdio.h>

void main()

{

int i;

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

printf(" %d",i);

}

1. 0 1 2 3 4 2. 1 2 3 4 5 3. Error 4. None of the above

24. What will be the output of following program?

#include<stdio.h>

void out(int flag)

{

printf("%d",flag);

}

void main()

{

char flag='1';

if(!(flag++))

{

out(flag);

}

else

{

out(flag);

}

}

1. 2 2. 50 3. Error 4. None of the above

25. What will be the output of following program?

#include<stdio.h>

void call(int i ,int j);

int j=0;

void main()

{

call(1,2);

}

void call(int j,int i)

{

printf("%d %d",j++,i++);

}

1. 1 2 2. 2 1 3. 3 2 4. 2 3

26. What will be the output of following program?

#include<stdio.h>

void call(char);

int i=0;

void main()

{

int i=0;

call(i);

i++;

call(i);

}

void call(char i)

{

printf(" %d",i++);

}

1. 0 1 2. 0 0 3. Error 4. None of the above

27. What will be the output of following program?

#include<stdio.h>

int out(int \*a)

{

int i=\*a;

return i++;

}

void main()

{

int i=2;

i= out(&i)+out(&i);

printf(" %d",i);

}

1. 4 2. 5 3. 6 4. None of the above

28. Which of the following is an syntax of 2- dimensional array?

1. array anarray[20][20]; 2. int array[20, 20]; 3. char array[20]; 4. int anarray[20][20];

29. What is the difference between the following ?

char arr1[] = {'a', 'b', 'c'};

and

char \*arr2 = "abc";

1. printf("%s", (char \*) arr2); will cause a memory violation.

2. arr2 has a trailing ''\\\\0'' character than arr1 does not.

3. They are the same.

4. None of the above

30. What will be the output of the following program?

#include<stdio.h>

void main()

{

char a[]="CDAC";

char \*b="CDAC";

printf("%d %d",sizeof(\*a), sizeof(\*b));

}

1. 1 1 2. 5 4 3. CDAC CDAC 4. Address of a and b

31. What does the following declaration means?

int \*ptr[5]

1. ptr is pointer to an array of 5 integers. 2. ptr is pointer to an array of 4 integers

3. ptr is an array of 5 pointer to integers. 4. ptr is an array of 4 pointer to integers.

32. Which of the following is the proper declaration of a pointer?

1. int x 2. int &x 3. ptr x 4. int \*x

33. Can arrays and pointers always be used interchangeably in C language?

1. True 2. False 3. Can’t say 4. None of the above

34. What is the output of the below C program?

#include <stdio.h>

void main()

{

static float table [2][3]={{1.1,1.2,1.3},{2.1,2.2,2.3}};

printf(“%f”, \*(\*(table + 1) + 1));

getch();

}

1. 2.1 2. 1.2 3. 2.2 4. None of the above

35. Which one of the following functions returns the string representation from a pointer to a time\_t value?

1. Localtime 2. Gmtime 3. Strtime 4. Ctime

36. Which of the following accesses a variable in structure b?

1. b<-var; 2. b.var; 3. b-var; 4. b>>var;

37. struct is an \_\_\_\_\_\_\_\_\_.

1. Identifer 2. Constant 3. User defined variable 4. Keyword

38. What are the difference between a queue and a stack?

1. Queues require linked lists, but stacks do not. 2. Stacks require linked lists, but queues do not.

3. Queues use two ends of the structure;stacks use only one.

4. Stacks use two ends of the structure; queues use only one.

39. Which of the following stack operations would result in stack underflow?

1. Peek 2. Pop 3. Push 4. Two or more of the above answers.

40. Which is the best data structure to check whether an arithmetic expression has balanced parenthesis or not?

1. Queue 2. Stack 3. Tree 4. Link list

41. Which of the following finds if the string A contains "abc"?

1. printf("%sabc\\n", A); 2. strcmp(A, "abc"); 3. strstr(A, "abc"); 4. strchr(A, "abc");

42. Which of following is the correct definition for a string variable?

1. string mystr; 2. string mystr[20]; 3. char mystr; 4. char mystr[20];

43. What is a proper method of opening a file for writing as binary file?

1. FILE \*f = fwrite( "test.bin", "b" ); 2. FILE \*f = fopenb( "test.bin", "w" );

3. FILE \*f = fopen( "test.bin", "wb" ); 4. FILE \*f = fwriteb( "test.bin" );

44. enum is a user defined data type similar to:

1. structure 2. Class 3. Both 1 & 2 4. None of the above.

45. Libraries that allow you to use several well-known kinds of data structures without having to program them in C++ are

known as:

1. Standard Template Library 2. Template Library 3. Simple Library Template 4.Template Library Functions.

46. char \*const ptr=”CDAC”; Which of the following hold true?

1. Const pointer to char 2. Pointer to const char 3. Pointer to char string 4. Invalid declaration.

47. Suppose cursor points to a node in a linked list (using the node definition with member functions called data and link).

What Boolean expression will be true when cursor points to the tail node of the list?

1. (cursor->data == NULL) 2. (cursor == NULL) 3. (link ->data( ) == 0.0) 4. (data -> cursor ( ) == NULL)

48. What kind of list is best to answer questions such as "What is the item at position n?"

1. Lists implemented with an array 2. Simple lists 3. Lists implemented with queue 4. None of the above

49. In which data structure, elements can be added or removed at both end and middle?

1. Stack 2. Queue 3. Linked list 4. Array

50. The node of doubly linked list must have

1. One data and two address fields 2. One data and one address fields

3. Two data and two address fields 4. One data and three address fields

**C++ and Data Structures**

1. Evaluate the following for fn (7);

int fn(int v)

{

if(v==1 || v==0)

return 1;

if(v%2==0)

return fn(v/2)+2;

else

return fn(v-1)+3;

}

1. 11 2. 10 3. 9 4. 1

2. My salary was increased by 15%!" Which of the following statement will EXACTLY print

the line of text above?

1. printf("My salary was increased by 15%!\n");

2. printf("My salary was increased by 15'%'!\n");

3. printf("\"My salary was increased by 15/%\!\"\n");

4. printf("\"My salary was increased by 15%%!\"\n");

3. Why should we not use non-integer real numbers as counters in loop?

1. Because they are not allowed in loop

2. A slight imprecision in repeating numbers can cause the loop to repeat infinitely.

3. Because they use more space

4. Because they are slow and less efficient than integers

4. If a process does x.signal, where x is a condition variable of a monitor and no process is awaiting

condition x, What will happen?

1. The signal operation has no effect

2. The next process do x.wait does not get blocked

3. The next process do x.wait get blocked

4. None of the above

5. Is the below statement is True/False?

The sequence of instructions (used in Processes) using mutex semaphore Up(mutex);

Critical section Down(mutex);

satisfies mutual exclusion.

1. True 2. False 3. Cannot say 4. None of the above

6. What will be the output of the following program?

#include<stdio.h>

#include<string.h>

char \*getptr()

{

static char ptr[10] = "123456789";

return ptr;

}

void main()

{

char \*ptr="00000";

strcpy(getptr()+4,ptr);

ptr=getptr();

strcpy(ptr,"12345");

printf("%s",getptr());

}

1. 123456789 2. 1234500000 3. 12345 4. Run time error

7. What will be the output of the following program?

#include<stdio.h>

void main()

{

int x = 5;

int y = 2;

char op = '\*';

switch (op)

{

default : x += 1;

case '+' : x += y;

case '-' : x -= y;

}

printf("%d",x);

}

1. Compile time error 2. Run time error 3. 5 4. 6

8. What will be the output of the following Code?

int pro=0, count=0;

while (pro<2500)

{

pro\*=5;

count++;

}

1. Syntax error: while statement is not valid

2. The operator \*= does not exist

3. The count variable is initialized incorrectly

4. It has an infinite loop

9. What will be the output of following program?

#include<stdio.h>

#define INDX(x) (++indx[x][ptr[x-1]],&indx[x][ptr[x-

1]])

void main()

{

int indx[6]={0,1,2,3,4,5};

int i=10;

char arr[][20]={"%hs not %s %s","%dbool",

"?n%shis? "};

char \*ptr[3];

ptr[0]=&arr[0][0];

ptr[1]=&arr[1][0];

ptr[2]=&arr[2][0];

printf(INDX(1),INDX(3),INDX(2));

}

1. this is bool 2. is not this cool 3. is not this? Cool 4. Compile time error

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10. What will be the output of following program?

#include<stdio.h>

void main()

{

struct num

{

int x,y;

} val[4] = {1,1,2,3,4,5,6,7};

struct num \*ptr = val;

int i=0;

for(;i<4;i++) {

ptr->x = ptr->y, ++ptr++->y;

printf("%d,%d ", val[i].x, val[i].y);

}

}

1. 1 1 2 3 4 5 6 7

2. 1 2 3 4 5 6 7 8

3. 1 2 3 4 5 6 7

4. 1 1 2 3 4 5 6

11. Which of the following is/are the special functions a

C++ compiler can create implicitly?

1. The default constructor

2. The copy constructor and the destructor

3. The operator=() function

4. All of the above

12. What does the code do?

strcat(an\_array, "This");

1. Copies "This" into an\_array

2. Adds "This" to the end of an\_array

3. Compares an\_array and "This"

4. Both 1 and 2

13. What will be the output of the following program?

#include<iostream.h>

int count=0;

class object

{

public :

object(){count++;}

~object(){count--;}

};

int main()

{

object A,B,C,D,E;

object F,G;

{

object H;

}

cout<<count;

return 0;

}

1. 0

2. 1

3. 7

4. 6

14. Consider A and B as two operands, and “ +” as the

operator, the presentation AB+ is called \_\_\_\_\_\_\_\_.

1. Infix

2. Suffix

3. Prefix

4. Postfix

15. In case of a copy constructor, which of the following

is true?

a. Used to instantiate an object from another

existing object

b. To copy one object to another existing object

1. Only a

2. Only b

3. Both a and b

4. None of the above

16. What will be happens if you use the delete keyword

on a null pointer?

1. The apocalypse

2. A crash may occur

3. Undefined behavior

4. Nothing happens

17. Which of the following statement is true?

1. Overridden functions are in different scopes;

whereas overloaded functions are in same scope.

2. Overriding is needed when derived class

function has to do some added or different

job than the base class function.

3. Overloading is used to have same name

functions, which behave differently depending

upon parameters passed to them.

4. All of the above

18. What will be the output of following program?

#include<iostream.h>

namespace NS1

{

int f(int n) {return n\*4;}

}

namespace NS2

{

int f(double n) {return n\*7;}

}

void main()

{

using NS1::f;

int a=f(1.0);

using NS2::f;

int b=f(1.0);

cout<<a<<b;

}

1. 74

2. 77

3. 44

4. 47

19. What will be the output of the following program?

class Window

{

public: virtual void Create() { cout <<"Base

class Window"; }

};

class CommandButton : public Window

{

public: void Create() { cout<<"Derived class

Command Button"; }

};

void main()

{

Window \*x, \*y;

x = new Window();

x->Create();

y = new CommandButton();

y->Create();

}

1. Base class Window

2. Derived class Command Button

3. Base class Window Derived class Command

Button

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4. Derived class Command Button Base class Window

20. Which of the following is an example where copy

constructor is needed?

a. User-defined copy constructor is required

when deep copy is required

b. Cloning of objects in Prototype pattern

1. Only a

2. Only b

3. Both a and b

4. None of the above

21. In addition to c-style, which casts can be used to

cast an int into an enum?

1. dynamic\_cast

2. static\_cast

3. reinterpret\_cast

4. None of the above

22. What will be the output of following program?

#include<iostream.h>

void main()

{

int a;

bool b;

a = 10 > 20;

b = 10 >= 20;

cout<<a<<" "<<b<<endl;

}

1. 0 0

2. 0 1

3. 1 1

4. 1 0

23. Which lines of code below should cause the

program to be undefined?

1 struct Foo

2 {

3 virtual ~Foo() {}

4 };

5

6 struct Bar : public Foo

7 {

8 };

9

10 int main(int argc, char\*\* argv)

11 {

12 Foo\* f = new Bar;

13 delete f;

14 f = 0;

15 delete f;

16

17 Foo\* fa = new Bar[10];

18 delete fa;

19 fa = 0;

20 delete fa;

21

22 return 0;

23 }

1. 13

2. 15

3. 18

4. 20

24. What will be the output of following program?

#include<iostream.h>

void main()

{

int arr[][3]={0,10,20,30,40,50};

int \*a = &arr[0][0];

cout<<arr[1][2]<<" "<<\*(a+3);

}

1. 30 50

2. 50 30

3. Compile time error

4. Run time error

25. Which of the following statements is NOT true?

a. Operators can be overloaded when both

operands are of built-in types.

b. Operators can be overloaded when one

operand is of a built-in type and the other is of

user-defined type.

c. Operators can be overloaded when both

operands are of user-defined types.

1. Only a

2. Only b

3. Both b and c

4. Both a and c

26. When must template functions have explicit

template parameters?

1. When the template types cannot be inferred

2. Never, the template types can always be inferred

3. Always

4. None of the above

27. What will be the output of the following program?

#include<iostream.h>

int main()

{

int x = 0x1000;

x = x << 32;

cout << hex << x ;

return 0;

}

1. 32

2. 1000

3. 0xFFFFFFFF

4. 0x00000000

28. A friend function can access \_\_\_\_\_\_\_\_\_\_.

1. Not even public members of class

2. Only public members of class

3. Only public and protected members of class

4. Public, protected and even private members

of the class

29. Which one of the following is true regarding the

compiling and running of the following line

ptr->Fn();

If ptr is a pointer to type Q and Fn() is a virtual

function in class Q?

1. function name and function definition both

matched to type of pointer at compile time

2. function name matched to pointer type at

compile time;

function definition matched to type pointer

points to at run time

3. function name matched to pointer type at run

time;

function definition matched to type pointer

points to earlier, at compile time

4. function name and function definition both matched

to type of object pointer points to at run time

30. Consider the following code:

void negate(int& x)

{

x = -1 \* x;

}

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What would happen during a call "negate(y);" in

main? (y is an integer variable)

1. x is negated, y is not

2. y is negated, x is not

3. Both x and y are negated

4. Compile time error

31. Queues serve a major role in \_\_\_\_\_\_\_\_\_.

1. Simulation of arbitrary linked list

2. Simulation of limited resource allocation

3. Simulation of recursion

4. Expression evaluation

32. The postfix form of A-B(C\*D$E) is \_\_\_\_\_\_\_\_\_.

1. ABCDE$-/\*

2. ABCDE/-\*$

3. AB/C\*DE$

4. ABCDE$\*/-

33. Which of the following sorting method is stable?

1. Straight insertion sort

2. Shell sort

3. Heap Sort

4. Binary insertion sort

34. Modern filesystems, like ReiserFS and XFS, use

which of the following structure to organize their

data for efficient access?

1. B+ tree

2. B- tree

3. Hash table

4. Array

35. Linked list is not suitable for which of the following

problems?

1. Insertion sort

2. Binary search

3. Quick sort

4. Polynomial manipulation

36. Which of the following is NOT a good characteristic

of a hash function?

1. Uniform distribution

2. Easy to compute

3. Handles various sized key spaces

4. Frequent collisions

37. Which of the following is true about connected

graph?

a. It cannot be portioned with out removing an edge

b. It contains at least 3 loops.

1. Only a

2. Only b

3. Both a and b

4. None of the above

38. Which of the following is /are a self-balancing

binary search trees?

1. AVL tree

2. Red black trees

3. Both a and b

4. None of the above

39. If you have a sorted, balanced binary tree with 15

elements in it, how many steps, maximum, will it

take you to decide whether an element is present in

the tree or not?

1. Three

2. Four

3. Fifteen

4. Fourteen

40. The average time required to perform a successful

sequential search for an element in an array A(1:n)

is given by \_\_\_\_\_\_\_\_\_.

1. n+1/2

2. n(n+1)/2

3. Log n

4. n\*n

41. Which of the following statement is true?

a. Parenthesis are never needed in prefix or

postfix expressions.

b. A postfix expression is merely the reverse of

the prefix expression.

1. Only a

2. Only b

3. Both a and b

4. None of the above

42. A machine took 200 sec to sort 200 names, using

bubble sort. In 800 sec, it can approximately sort

\_\_\_\_\_\_\_\_.

1. 800 names

2. 400 names

3. 750 names

4. 700 names

43. Which of the following is false?

a. Insertion of an element should be done at the

last node in a circular list

b. Deletion of an element should be done at the

last node in a circular list

1. Only a

2. Only b

3. Both a and b

4. None of the above

44. A circular list can be used to represent \_\_\_\_\_\_\_\_\_.

1. Stack

2. Queue

3. B-tree

4. Both 1 and 2

45. A famous quotation of NIKLAUS WIRTH states

Algorithm+ Data Structure=\_\_\_\_\_\_\_\_\_\_.

1. Computer

2. Software

3. Program

4. Array

46. What can be said about the array representation of a

circular queue when it contains only one element?

1. front=Rear=Null

2. front =Rear+1

3. front=Rear-1

4. front==Rear

47. Let q be the queue of interger defined as follows:

#define MAX-Q 500

struct queue

{

int item[MAX-Q]

int front,rear;

}

To insert an element in the queue, which of the

following operation we use?

1. ++q.item[q.rear]=X;

2. q.item[q.rear]++=X;

3. q.item[++q.rear]=X;

4. None of the above

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48. Which of the following statement is false?

a. Linked list are not superior to STL vectors.

b. Deleting a node in a linked list is a simple

matter of using the delete operator to free the

nodes Memory

1. Only a

2. Only b

3. Both a and b

4. None of the above

49. Which of the following is a definition of a printAll()

method for the List class that relies on an

overloaded << method for Person to print the

contents of the list?

1. void List::printAll()

{

for(ListNode \*ptr = tail; ptr; ptr = ptr->next)

cout << \*(ptr->person);

}

2. void List::printAll()

{

for(ListNode \*ptr = tail; ptr; ptr = ptr->next)

cout << \*(ptr.person);

}

3. void List::printAll()

{

for(ListNode ptr = head; ptr; ptr = ptr->next)

cout << (ptr->person);

}

4. void List::printAll()

{

for(ListNode \*ptr = head; ptr; ptr = ptr->next)

cout << \*(ptr->person);

}

50. Complexity of Kruskal`s algorithm for finding the

minimum spanning tree of an undirected graph

containing n vertices and m edges if the edges are

sorted is \_\_\_\_\_\_\_\_\_\_.

1. O(m)

2. O(m+n)

3. O(n)

4. None of the above