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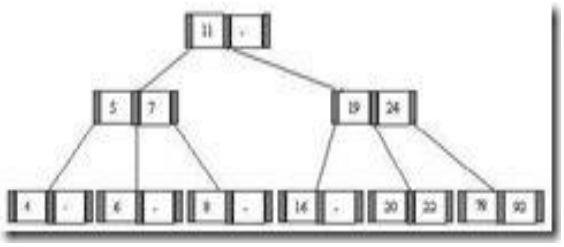
Test-I

1. Which of the following is an ordered collection of elements of the same type? A. Set B. Bag **C. List** D. Dictionary Ans-C	2. ODBC core SQL grammar contains which of the following?: A. INSERT, UPDATE, DELETE only B. Stored procedures only C. Full SELECT (includes subqueries) only **D. Both 1 and 3 above are contained in the ODBC core SQL.** Ans-D
3. What will be the output of the program? A. 1 2 3 **B. 1 2 3 4** C. 2 3 4 D. 1 Ans-B	4. When would a structure variable get destroyed? A. When no reference refers to it, it will get garbage collected. B. Depends upon whether it is created using new or without using new. **C. When it goes out of scope.** D. Depends upon the Project Settings made in Visual Studio.NET. E. Depends upon whether we free it's memory using free() or delete(). Ans-c
5. What do the following declaration signify? char *arr[10]; **A. arr is a array of 10 character pointers.** B. arr is a array of function pointer. C. arr is a array of characters. D. arr is a pointer to array of characters. Ans-A	6. What do the following declaration signify? int (*pf)(); A. pf is a pointer to function. B. pf is a function pointer. **C. pf is a pointer to a function which return int** D. pf is a function of pointer variable. Ans-C

7. In the following code what is 'P'?
typedef char *charp;
const charp P;
A. P is a constant
B. P is a character constant
C P is character type
D. None of above
Ans-A
	8. What will be the output of the C#.NET code snippet given below?
	byte b1 = 0xF7;
	byte b2 = 0xAB;
	byte temp;
	temp = (byte)(b1 & b2);
	Console.Write (temp + " ");
	temp = (byte)(b1^b2);
	Console.WriteLine(temp);
	A. 163 92 C. 192 63
	B. 92 163 D. 0 1
	Ans-A

9. In the following program add a statement in the function fun such that the address of 'a' gets stored in 'j'
main(){
int * j;
void fun(int **);
fun(&j);
}
void fun(int **k) {
int a =0;
/* add a stmt here*/
}
i) *k=&a
ii) **k=a
iii) *k=a
iv)None
	10. B-tree of order 3 created by inserting the following data arriving in sequence - 92 24 6 7 11 8 22 4 5 16 19 20 78
	 
	i) Above figure is false
	ii) Above figure is true
	iii) Tree cannot be built.
	iv) None

	12. Convert the expression ((A + B) * C - (D - E) ^ (F + G)) to equivalent Prefix and Postfix notations. **i) Prefix Notation: - * +ABC ^ - DE + FG** **Postfix Notation: AB + C * DE - FG + ^** ii) Postfix Notation: - * +ABC ^ - DE + FG

	Prefix Notation: AB + C * DE - FG + ^ - iiii)Both are possible iv)None is possible
13. What are the methods available in storing sequential files? i)Straight Merging ii)Natural Merging iii)Polyphase sort. **iv)All of the above**	14. Suppose a Generic class called SortObjects is to be made capable of sorting objects of any type (Integer, Single, Byte etc.). Which of the following programming constructs should be used to implement the comparision function? A. Namespace B. Interface C. Encapsulation **D. Delegate** E. Attribute Ans-D
15. In tree construction which is the suitable efficient data structure? i)Array **ii)Linked List** iii)Stack iv)Queue	16. If an XML document does not have a DTD, then by definition it is: **A. not-type-valid.** B. an HTML document. C. type-valid. D. None of the above is correct Ans-A

17. Predict the output or error(s) for the following:
 	
class Sample
{
public:
int *ptr;
Sample(int i)
{
ptr = new int(i);
}
~Sample()
{
	18. How can a '::' operator be used as unary operator?
	
	i) All *unary operators* are of equal precedence and have left to right associativity.
	
	ii)All unary operators are of equal precedence and have right-to-left associativity.
	
	iii)All *unary operators* are of not having equal precedence and have right-to-left associativity

delete ptr;
}
void PrintVal()
{
cout « "The value is " « *ptr;
}
};
void SomeFunc(Sample x)
{
cout « "Say i am in someFunc " « endl;
}
int main()
{
Sample s1= 10;
SomeFunc(s1);
s1.PrintVal();
}
 	
i)This "cout « "Say i am in someFunc " « endl;" is not applicable.
ii)Constructor cannot be destroyed.
iii)constructor cannot be called
iv)none
	iv)None

Test-II

1. Write a program to delete an element from an array?

```
#include <stdio.h>
int main()
{
   int array[100], position, c, n;

   printf("Enter number of elements in array\n");
   scanf("%d", &n);

   printf("Enter %d elements\n", n);

   for (c = 0; c < n; c++)
      scanf("%d", &array[c]);

   printf("Enter the location where you wish to delete
element\n");
   scanf("%d", &position);

   if (position >= n+1)
      printf("Deletion not possible.\n");
   else
   {
      for (c = position - 1; c < n - 1; c++)
         array[c] = array[c+1];

      printf("Resultant array:\n");

      for (c = 0; c < n - 1; c++)
         printf("%d\n", array[c]);
   }

   return 0;
}
```

3. Write a program using an array that computes the sum and the average of n^{th} input values from the keyboard and prints the calculated sum and average.

```
    void main()
    int i, num;
    float total = 0.0, average;
    printf ("Enter the value of N \n");
    scanf("%d", &num);
    int array[num];

    printf("Enter %d numbers (-ve, +ve and zero) \n", num);

    for (i = 0; i < num; i++)
    {
       scanf("%d", &array[i]);
    }

    printf("Input array elements \n");

    for (i = 0; i < num; i++)
    {
       printf("%+3d\n", array[i]);
    }

    /*  Summation starts */

    for (i = 0; i < num; i++)
    {
       total+=array[i];/* this means total=total+array[i]; */
    }
average = total / num;

    printf("\n Sum of all numbers =  %.2f\n", total);
```

```
   printf("\n Average of all input numbers =  %.2f\n", average);


}
```

4. Write a program for Pascal's triangle for 'n' lines.

```
#include<stdio.h>
int main() {
    int rows, coef=1, space, i, j;
    printf("Enter number of rows: ");
    scanf("%d", &rows);
    for (i=0; i<rows; i++) {
        for (space=1; space <= rows-i; space++)
            printf("  ");
        for (j=0; j<=i; j++) {
            if (j==0 || i==0)
                coef = 1;
            else
                coef=coef*(i-j+1)/j;
            printf("%4d", coef);
        }
        printf("\n");
    }
    return 0;
}
```

6. Write a Program to convert decimal to binary no.

```
#include<stdio.h>
#include<stdlib.h>
int main(){
int a[10],n,i;
system ("cls");
printf("Enter the number to convert: ");
scanf("%d",&n);
```

```
for(i=0;n>0;i++)
{
a[i]=n%2;
n=n/2;
}
printf("\nBinary of Given Number is=");
for(i=i-1;i>=0;i--)
{
printf("%d",a[i]);
}
return 0;
}
```

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Test-III

1. Write a program to delete an element from an array?	2. Can the size of an array be declared at runtime? i) Yes through dynamic memory allocation. ii) No size cannot be declared at runtime. iii) None
3. Write a program using an array that computes the sum and the average of n^{th} input values from the keyboard and prints the calculated sum and average.	4. Write a program for Pascal's triangle for 'n' lines
5. How to write a C program to find the power of 2 in a normal way and in single step? **i) (x && (x-1) == 0)** ii) (x II (x-1) == 0) iii) Both will work iv) Nothing will work	6. Write a Program to convert decimal to binary no.

7. What is wrong with this code?
#include <stdio.h>
#define NAME __FILE__
main()
{
FILE *fopen(), *fp;
int c;
printf("The program itself is displayed like this: ");
fp = fopen ("NAME", "r");
c = getc (fp);
while (c != EOF)
{	

putchar (c);
c = getc (fp);
}
fclose(fp);
}
 	
i) Segmentation Fault
ii) Compiler Error
iii) No Error
iv) None	

8. Which DOS command will format a floppy disk and transfer the system files A. SYS C: A: B. SYS A: **C. FORMAT A: /S** D. FORMAT A: /T E. None of the above Ans-C	9. How can I access a FAT32 partition? **A.Unlocating the space** B. Locating the Space C. Checking the Buffer D.None
10. What type of group is not available in a domain that is running at the mixed-mode functional level? A. Local Group B. Global Group C.Home Group **D.Universal Group** Ans- Universal group	11. List the Coffman's conditions that lead to a deadlock. A.Mutual Exclusion. B.Hold and Wait C.No Preemption **D. All of the above**
	12. Your default unmask is 002. What does this mean? **A. Any file you create will have the permissions set as owner and group having read and write permissions; others as read only.** B. Any file you create will have the permissions set as owner and group having read, write and execute permissions; others as read and execute. C. Any directoy you create will have the permissions set as owner and group having read, write and execute

	permissions; others as read and write permissions. D. Any directory you create will have the permissions set as owner and group having read and write permissions; others as read only. Ans-A
13.How is a binary semaphore is useful? i) are used to implement mutual exclusion ii) are used to implement synchronize concurrent processes. **iii) Both are required for binary Semaphore** iv)Nothing is required for binary Semaphore	
14. What are the sub-components of I/O manager in Windows NT? i)Network Redirector ii)Cache Manager iii)File Systems iv)Network Driver **v)All of the above**	15. What level of security does Windows NT meets? i)C1 level security **ii) C2 level security** iii)C3 level security iv)C4 level security
16. Identify the class name for the following code: ABC123 course(); **A. ABC123** B. course() C. course D. All of the above. Ans-A	17. The keyword "inverse" is used in which of the following? A. Class **B. Relationship** C. Attribute D. All of the above. Ans-B

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Test-IV

1. FLOP is the unit of –
i)clock speed,
ii)frequency
iii)memory
iv)processors speed.
	2. main()
	{
	printf("hello");
	main();
	}
	how many times it will print?
	
	i)program will run infinite time
	ii)Fatal error
	iii)Compiler Error
	iv)Program will run atleast one time

3. complexity of heap sort
i) o(nlogn)
ii) o(logn)
iii)o^2(logn)
iv)n(logn)
	4. what will be the o/p?
	int main()
	{
	char a,b;
	printf("%d%d%d%d",sizeof('A'), sizeof('NULL'), sizeof('a'), sizeof(main));
	}
	
	i)Error
	ii)Prgram will display values
	iii)Type conversion is not possible in C
	iv)None

5. necessity of pairty bit. **i)Parity bit is used to ensure that the total number of 1-bits in string is even or odd.** ii) Parity bit is used to ensure that the total number of 0-bits in string is even or odd.	6. In UNIX a files i-node .....? i)restricts file permission **ii) specifies file size, number of lines to a file, permissions etc.** iii) Both the above. iv)None of the above
7. The UNIX shell .... a) does not come with the rest of the system **b) forms the interface between the user and the kernal** c) does not give any scope for programming d) does not allow calling one program from with in another e) all of the above	8. enum number { a= -1, b= 4,c,d,e} What is the value of e ? (a) 7 (b) 4 **(c) 5** (d) 15 (e) 3

9. The very first process created by the kernal that runs till the kernal process is halts is
 	
a) init
b) getty
c) both (a) and (b)
d) none of these
 	
Ans. (a)
	10. Output of the following program is:
	
	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);
	}
	}
	
	a) 0,5,9,13,17
	b) 5,9,13,17

	c) 12,17,22 **d) 16,21** e) Syntax error **Ans. (d)**
11. A trigger is..... (a) a statement ..start of database.. **(b)statements that r executed as a side effect to the modification to the database** (c) occurs when system recognizes some error. (d) a statement ..end of database.. ans (b)	12. What does the following statement mean? int (*a)[4] **(a)'a' is a pointer to an array of 4 integers** (b)'a' is an array of pointers to integer (c)'a' is a pointer to function returning an integer (d) Ni significance ans:a
13. Best method to find out whether a given array already sorted,is sorted or not in min. Time. i)Bubble Sort ii)Heap Sort iii) Merge Sort **iv)Insertion Sort** ans. insertion sort (check)	14. A primary key in one table also present in some other table is called **(a)foreign key** (b)secondary key (c)subordinate key (d)Candidate Key ans. foreign key

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Test-V

1. Which of the following is a real time system? (a) robotics control **(b)airline ticket reservation** (c) Gaming (d) None	2. Which of the following is an example of a spooling device? (a) Scanner **(b)line printer..** (c) Keyboard (d)All the above
3. If in a table:account no,account holders name,account type,name,acc_type,Acc_city etc.. are the fields,which of them could be the primary key? **(a)account no** (b)account holders name (c)account type (d)acc_city	4. If a file is opened in "r+" mode(in C),it means (a) write **(b)read** (c)update (d)delete
5. What is the difference between 123 and 0123 in c? (a)120 **(b)40** (c)0 (d)100 ans:40	6. Data Integrity constraint is **(a)to ensure the presence of primary key** (b)to ensure nothing is NULL (c)All fields are initially empty (d)All database are connected to each other.
7. Which of the following uses the minimum length of cable? (a)ring (b)star (c)mesh (d)bus	8. How can u append the ls and who to certain existing file (like that)(i.e.listing & output of who is to be directed to a file **(a)ls;who>filename** (b)ls;who>>filename (c)(ls;who)>>filename

(e)all of the above	(d)who;ls<filename
9. Software Configuration Management process is - **(a)developing & managing software for software.** (b)developing & managing hardware for....software. (c) developing & managing hardware for....software (d) developing and managing firmware for software	10. Suppose u have a network .users complain of it as slow you suspect a problem in network adapter once u find that the data is continuous and erroneous. what device do u use? (a)volt-ohmmeter **(b)SNMP** (c)TCP (d)all of the above
11. What is vector processing? i) cannot performs the arithmetic operation on the large array of integers or floating-point number ii) **performs the arithmetic operation on the large array of integers or floating-point number** iii)None	12. x-=y+1 is equivalent to what? (a)x=x-y+1 (b)x=-y-1 **(c)x=x-y-1** (d)x=y+1 ans:(c)
13. In a student form what is the relationship b/w student and course (a)one to one (b)many to one **(c)one to many** (d)many to many	14. ROM is (a)volatile (b)permanent & fast **(c)device containing boot up program & is not accessible** (d)can easily accessible and changeable

Test-VI

1. Write Pythonic code to check if a given year is a leap year or not.

Sol:

```
year=int(input("Enter year to be checked:"))
if(year%4==0 and year%100!=0 or
year%400==0):
   print("The year is a leap year!)
else:
   print("The year isn't a leap year!)
```

2. Input five integers (+ve and −ve). Write Pythonic code to find the sum of negative numbers, positive numbers and print them. Also, find the average of all the numbers and numbers above average.

Sol:

```
n=int(input("Enter the number of
elements to be in the list:"))
b=[]
for i in range(0,n):
   a=int(input("Element: "))
   b.append(a)
sum1=0
sum2=0
sum3=0
for j in b:
   if(j>0):
      if(j%2==0):
         sum1=sum1+j
      else:
         sum2=sum2+j
   else:
      sum3=sum3+j
print("Sum of all positive even
numbers:",sum1)
print("Sum of all positive odd
numbers:",sum2)
print("Sum of all negative
numbers:",sum3)
```

3. Write Pythonic code to find Mean, Variance and Standard Deviation for a list of numbers.

Sol:

```
# initializing list
test_list = [4, 5, 8, 9, 10]

# printing list
print("The original list : " +
str(test_list))
```

3.O/P please :

```
r = lambda q: q * 2
s = lambda q: q * 3
x = 2
x = r(x)
x = s(x)
x = r(x)
```

``
# Standard deviation of list 	
# Using sum() + list comprehension 	
mean = sum(test_list) /
len(test_list)
variance = sum([(x - mean) ** 2)
for x in test_list]) /
len(test_list)
res = variance ** 0.5
 	
# Printing result 	
print("Standard deviation of sample
is : " + str(res))
``
	print x
	
	i)42
	ii)24
	iii)12
	iv)Code will not run

4.Output Please :
a = 4.5
b = 2
print a//b
 	
i)3.0
ii)1.0
iii)2.0
iv)4.0
	5. Output Please:
	a = True
	b = False
	c = False
	
	if a or b and c:
	  print "SCOE"
	else:
	  print "scoe"
	
	i) SCOE
	ii)scoe
	iii)true
	iv)false

6.Output Please:
a = True
b = False
c = False
 	
if not a or b:
  print 1
elif not a or not b and c:
  print 2
elif not a or b or not b and a:
  print 3
else:
  print 4
i)4
ii)3
iii)2
iv)1
 	
ans 3
	7.Output Please:
	numberGames = {}
	numberGames[(1,2,4)] = 8
	numberGames[(4,2,1)] = 10
	numberGames[(1,2)] = 12
	
	sum = 0
	for k in numberGames:
	  sum += numberGames[k]
	
	print len(numberGames) + sum
	
	i)33
	ii)73
	iii)43
	iv)23

8.Output please my_tuple = (1, 2, 3, 4)	9.Output Please: def __init__(self, id):

my_tuple.append((5, 6, 7)) print len(my_tuple) i)7 ii)4 **iii)Error!** iv)3	self.id = id manager = Geeks(100) manager.__dict__['life'] = 49 print manager.life + len(manager.__dict__) i**)51** ii)49 iii)50 iv)error!

10.Output Please:
 	
dictionary = {}
dictionary[1] = 1
dictionary['1'] = 2
dictionary[1] += 1
 	
sum = 0
for k in dictionary:
  sum += dictionary[k]
 	
print sum
 	
i)1
ii)2
iii)4
iv)'1'
	11.Output Please:
	
	from random import randrange
	L = list()
	for x in range(5):
	  L.append(randrange(0, 100, 2)-10)
	
	# Choose which of outputs below are valid for this code.
	print(L)
	a) [-8, 88, 8, 58, 0]
	b) [-8, 81, 18, 46, 0]
	c) [-7, 88, 8, 58, 0]
	d) [-8, 88, 94, 58, 0]

12.Output Please
x = ['ab', 'cd']
for i in x:
  i.upper()
print(x)
 	
i)['AB','CD']
ii)[ab,cd]
iii)['ab','cd']
iv)error
	13.Output Please
	i = 1
	while True:
	  if i%3 == 0:
	  break
	  print(i)
	  i + = 1
	
	i)1
	ii)2
	iii)invalid syntax
	iv)0

14.Output Please:
 	
for i in [1, 2, 3, 4][::-1]:
  print (i)
 	
i)4321
	15. class Test {
	public
	  static void main(String[] args)
	  {
	  int i = 0, j = 9;
	  do {

ii)4
3
2
1
iii)1234
iv)1
2
3
4
	i++;
	if (j-- < i++) {
	break;
	}
	} while (i < 5);
	System.out.println(i + "" + j);
	}
	}
	
	i) 44
	ii)55
	iii)66
	iv)77

16. class Test {
public
static void main(String[] args)
{
int x = 10;
if (++x < 10 && (x / 0 > 10)) {
System.out.println("Bishal");
} else {
System.out.println("GEEKS");
}
}
}
 	
i.Compile time error
ii.RuntimeException:ArithmeticException: / by zero
iii. Bishal
iv. GEEKS
	17.

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Test-VII

Operating System

1. A Process Control Block(PCB) does not contain which of the following? a) Code b) Stack **c) Bootstrap program** d) Data	2.The entry of all the PCBs of the current processes is in _____ a) Process Register b) Program Counter **c) Process Table** d) Process Unit
3. What is the objective of multiprogramming? **a) Have some process running at all times** b) Have multiple programs waiting in a queue ready to run c) To minimize CPU utilization d) None of the mentioned	4.Message passing system allows processes to _____ **a) communicate with one another without resorting to shared data** b) communicate with one another by resorting to shared data c) share data d) name the recipient or sender of the message
5. Which module gives control of the CPU to the process selected by the short-term scheduler? **a) dispatcher** b) interrupt c) scheduler d) none of the mentioned	6. Which scheduling algorithm allocates the CPU first to the process that requests the CPU first? **a) first-come, first-served scheduling** b) shortest job scheduling c) priority scheduling d) none of the mentioned
7.In priority scheduling algorithm, when a process arrives at the ready queue, its priority is compared with the priority of _____ a) all process **b) currently running process** c) parent process d) init process	8.In multilevel feedback scheduling algorithm _____ **a) a process can move to a different classified ready queue** b) classification of ready queue is permanent c) processes are not classified into groups d) none of the mentioned
9.A situation where several processes access and manipulate the same data concurrently and the outcome of the execution depends on the particular order in which access takes place is called _____ a) data consistency **b) race condition** c) aging d) starvation	10.Which of the following conditions must be satisfied to solve the critical section problem? a) Mutual Exclusion b) Progress c) Bounded Waiting **d) All of the mentioned**

11.Mutual exclusion implies that _____ **a) if a process is executing in its critical section, then no other process must be executing in their critical sections** b) if a process is executing in its critical section, then other processes must be executing in their critical sections c) if a process is executing in its critical section, then all the resources of the system must be blocked until it finishes execution d) none of the mentioned	12.A minimum of _____ variable(s) is/are required to be shared between processes to solve the critical section problem. a) one **b) two** c) three d) four
13.In the bakery algorithm to solve the critical section problem _____ a) each process is put into a queue and picked up in an ordered manner **b) each process receives a number (may or may not be unique) and the one with the lowest number is served next** c) each process gets a unique number and the one with the highest number is served next d) each process gets a unique number and the one with the lowest number is served next	14. Which of the following condition is required for a deadlock to be possible? a) mutual exclusion b) a process may hold allocated resources while awaiting assignment of other resources c) no resource can be forcibly removed from a process holding it **d) all of the mentioned**
15.A system is in the safe state if _____ **a) the system can allocate resources to each** process in some order and still avoid a deadlock b) there exist a safe sequence c) all of the mentioned d) none of the mentioned	16.Which one of the following is the deadlock avoidance algorithm? **a) banker's algorithm** b) round-robin algorithm c) elevator algorithm d) karn's algorithm
17.For an effective operating system, when to check for deadlock? a) every time a resource request is made b) at fixed time intervals **c) every time a resource request is made at fixed time intervals** d) none of the mentioned	18.To avoid deadlock _____ **a) there must be a fixed number of resources to allocate** b) resource allocation must be done only once c) all deadlocked processes must be aborted d) inversion technique can be used
19.Binding of instructions and data to memory addresses can be done at _____ a) Compile time b) Load time c) Execution time **d) All of the mentioned**	20.. If the process can be moved during its execution from one memory segment to another, then binding must be _____ **a) delayed until run time** b) preponed to compile time c) preponed to load time d) none of the mentioned

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Test-VIII

DBMS

1. The term _____ is used to refer to a row. a) Attribute **b) Tuple** c) Field d) Instance	2. Database _____ which is the logical design of the database, and the database _____ which is a snapshot of the data in the database at a given instant in time. a) Instance, Schema b) Relation, Schema c) Relation, Domain **d) Schema, Instance**
3. The subset of a super key is a candidate key under what condition? **a) No proper subset is a super key** b) All subsets are super keys c) Subset is a super key d) Each subset is a super key	4. 4. A _____ is a property of the entire relation, rather than of the individual tuples in which each tuple is unique. a) Rows **b) Key** c) Attribute d) Fields
5. An attribute in a relation is a foreign key if the _____ key from one relation is used as an attribute in that relation. a) Candidate **b) Primary** c) Super	6.The _____ is the one in which the primary key of one relation is used as a normal attribute in another relation. a) Referential relation b) Referencing relation **c) Referenced relation** d) Referred relation
7.To include integrity constraint in an existing relation use : a) Create table b) Modify table **c) Alter table** d) Drop table	8.Domain constraints, functional dependency and referential integrity are special forms of _____ a) Foreign key b) Primary key **c) Assertion** d) Referential constraint
9.CREATE TABLE Employee(Emp_id NUMERIC NOT NULL, Name VARCHAR(20) , dept_name VARCHAR(20), Salary NUMERIC UNIQUE(Emp_id,Name)); INSERT INTO Employee VALUES(1002, Ross, CSE, 10000) INSERT INTO Employee VALUES(1006,Ted,Finance,); INSERT INTO Employee VALUES(1002,Rita,Sales,20000); What will be the result of the query? a) All statements executed b) Error in create statement c) Error in insert into Employee values(1006,Ted,Finance,); **d) Error in insert into Employee values(1008,Ross,Sales,20000);**	

10.Data integrity constraints are used to: a) Control who is allowed access to the data b) Ensure that duplicate records are not entered into the table **c) Improve the quality of data entered for a specific property (i.e., table column)** d) Prevent users from changing the values stored in the table	11.This set of Database Multiple Choice Questions & Answers (MCQs) focuses on "SQL Data Types and Schemas". 1. Dates must be specified in the format a) mm/dd/yy **b) yyyy/mm/dd** c) dd/mm/yy d) yy/dd/mm
12.Which of the following is used to store movie and image files? a) Clob **b) Blob** c) Binary d) Image	13.CREATE DOMAIN YearlySalary NUMERIC(8,2) CONSTRAINT salary VALUE test _____; In order to ensure that an instructor's salary domain allows only values greater than a specified value use: a) Value>=30000.00 b) Not null; **c) Check(value >= 29000.00);** d) Check(value)
14.Which of the following statements creates a new table temp instructor that has the same schema as an instructor. a) create table temp_instructor; **b) Create table temp_instructor like instructor;** c) Create Table as temp_instructor; d) Create table like temp_instructor;	15. A _____ indicates an absent value that may exist but be unknown or that may not exist at all. a) Empty tuple b) New value **c) Null value** d) Old value
16. If the attribute phone number is included in the relation all the values need not be entered into the phone number column. This type of entry is given as a) 0 b) – **c) Null** d) Empty space	17. Which of the join operations do not preserve non matched tuples? a) Left outer join b) Right outer join **c) Inner join** d) Natural join
18. Given the basic ER and relational models, which of the following is INCORRECT? a) An attribute of an entity can have more than one value b) An attribute of an entity can be composite **c) In a row of a relational table, an attribute can have more than one value** d) In a row of a relational table, an attribute can have exactly one value or a NULL value	19. Which of the following is a low level operator? a) Insert b) Update c) Delete **d) Directory**

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Test-IX

Computer Network

1. Communication between a computer and a keyboard involves _____ transmission. a) Automatic b) Half-duplex c) Full-duplex **d) Simplex**	2. The first Network was called _____ a) CNNET b) NSFNET c) ASAPNET **d) ARPANET**
3. Which organization has authority over interstate and international commerce in the communications field? a) ITU-T b) IEEE **c) FCC** d) ISOC	4. The function of DSLAM is to _____ **a) Convert analog signals into digital signals** b) Convert digital signals into analog signals c) Amplify digital signals d) De-amplify digital signals
5. Which transmission media provides the highest transmission speed in a network? a) coaxial cable b) twisted pair cable **c) optical fiber** d) electrical cable	6. The portion of physical layer that interfaces with the media access control sublayer is called _____ **a) physical signalling sublayer** b) physical data sublayer c) physical address sublayer d) physical transport sublayer
7. The data link layer takes the packets from _____ and encapsulates them into frames for transmission. **a) network layer** b) physical layer c) transport layer d) application layer	8. Which of the following tasks is not done by data link layer? a) framing b) error control c) flow control **d) channel coding**
9.In virtual circuit network each packet contains _____ a) full source and destination address **b) a short VC number** c) only source address d) only destination address	10. A subset of a network that includes all the routers but contains no loops is called _____ **a) spanning tree** b) spider structure c) spider tree d) special tree
11. Transmission control protocol _____ a) is a connection-oriented protocol b) uses a three way handshake to establish a connection	12.An endpoint of an inter-process communication flow across a computer network is called _____ **a) socket** b) pipe

c) receives data from application as a single stream **d) all of the mentioned**	c) port d) machine
13. Cookies were originally designed for _____ a) Client side programming **b) Server side programming** c) Both Client side programming and Server side programming d) Socket programming	14. Which attribute is used to extend the lifetime of a cookie? a) Higher-age b) Increase-age **c) Max-age** d) Lifetime
15.If you have to send multimedia data over SMTP it has to be encoded into _____ a) Binary b) Signal c) ASCII d) Hash	16. Expansion of SMTP is _____ a)Simple Mail Transfer Protocol b) Simple Message Transfer Protocol c) Simple Mail Transmission Protocol d) Simple Message Transmission Protocol
17. Return value of the UDP port “Chargen” is _____ **a) String of characters** b) String of integers c) Array of characters with integers d) Array of zero’s and one’s	18. Port number used by Network Time Protocol (NTP) with UDP is _____ a) 161 **b) 123** c) 162 d) 124
19. Port number used by Network Time Protocol (NTP) with UDP is _____ a) 161 **b) 123** c) 162 d) 124	20. In open-loop control, policies are applied to _____ a) Remove after congestion occurs b) Remove after sometime **c) Prevent before congestion occurs** d) Prevent before sending packets

Test-X

JAVA MCQs

1. What is the range of short data type in Java? a) -128 to 127 **b) -32768 to 32767** c) -2147483648 to 2147483647 d) None of the mentioned	2. Which of the following are legal lines of Java code? 1. int w = (int)888.8; 2. byte x = (byte)100L; 3. long y = (byte)100; 4. byte z = (byte)100L; a) 1 and 2 b) 2 and 3 c) 3 and 4 **d) All statements are correct**
3. Which of these values can a boolean variable contain? **a) True & False** b) 0 & 1 c) Any integer value d) true	4. On applying Left shift operator, <<, on integer bits are lost one they are shifted past which position bit? a) 1 b) 32 c) 33 **d) 31**
5. Which of these operators is used to allocate memory to array variable in Java? a) malloc b) alloc **c) new** d) new malloc	6. Which of these is an incorrect Statement? **a) It is necessary to use new operator to initialize an array** b) Array can be initialized using comma separated expressions surrounded by curly braces c) Array can be initialized when they are declared d) None of the mentioned
7. Which of these is necessary to specify at time of array initialization? **a) Row** b) Column c) Both Row and Column d) None of the mentioned	8. Which of these jump statements can skip processing the remainder of the code in its body for a particular iteration? a) break b) return c) exit **d) continue**
9.What will be the output of the following Java code? class array_output	

```
{
   public static void main(String args[])
   {
      int array_variable [] = new int[10];
           for (int i = 0; i < 10; ++i)
      {
         array_variable[i] = i;
         System.out.print(array_variable[i] + " ");
         i++;
      }
   }
}
```

a) 0 2 4 6 8
b) 1 3 5 7 9
c) 0 1 2 3 4 5 6 7 8 9
d) 1 2 3 4 5 6 7 8 9 10

10.Which of this statement is incorrect? a) switch statement is more efficient than a set of nested ifs **b) two case constants in the same switch can have identical values** c) switch statement can only test for equality, whereas if statement can evaluate any type of boolean expression d) it is possible to create a nested switch statements	11. What is true about constructor? a) It can contain return type **b) It can take any number of parameters** c) It can have any non access modifiers d) Constructor cannot throw an exception
12. Which of the following has the highest memory requirement? a) Heap b) Stack **c) JVM** d) Class	13. Which of these can be overloaded? a) Methods b) Constructors **c) All of the mentioned** d) None of the mentioned
14. Which of the following statements are incorrect? a) static methods can call other static methods only b) static methods must only access static data c) static methods can not refer to this or super in any way **d) when object of class is declared, each object contains its own copy of static variables**	15. What is the process of defining more than one method in a class differentiated by method signature? a) Function overriding **b) Function overloading** c) Function doubling d) None of the mentioned
16. What is the process of defining more than one method in a class differentiated by method signature? a) Function overriding **b) Function overloading** c) Function doubling d) None of the mentioned	17. Which of these is correct way of inheriting class A by class B? a) class B + class A {} b) class B inherits class A {} **c) class B extends A {}** d) class B extends class A {}
18. Which of these access specifiers can be used for an interface? **a) Public**	19. Which of the following is the correct way of implementing an interface salary by class manager?

b) Protected c) private d) All of the mentioned	a) class manager extends salary {} **b) class manager implements salary {}** c) class manager imports salary {} d) none of the mentioned

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Test-XI

C Programming

1. C99 standard guarantees uniqueness of _____ characters for internal names. a) 31 **b) 63** c) 12 d) 14	2. Which of the following is not a valid variable name declaration? a) int _a3; b) int a_3; **c) int 3_a;** d) int _3a
3. All keywords in C are in _____ **a) LowerCase letters** b) UpperCase letters c) CamelCase letters d) None of the mentioned	4. Which for loop has range of similar indexes of 'i' used in for (i = 0;i < n; i++)? a) for (i = n; i>0; i–) b) for (i = n; i >= 0; i–) c) for (i = n-1; i>0; i–) **d) for (i = n-1; i>-1; i–)**

5. #include <stdio.h>
int main()
{
short i;
for (i = 1; i >= 0; i++)
printf("%d\n", i);
 	
}
a) The control won't fall into the for loop
b) Numbers will be displayed until the signed limit of short and throw a runtime error
c) Numbers will be displayed until the signed limit of short and program will successfully terminate
d) This program will get into an infinite loop and keep printing numbers with no errors
	6. What will be the output of the following C code?
	
	#include <stdio.h>
	void main()
	{
	int k = 0;
	for (k)
	printf("Hello");
	}
	a) Compile time error
	b) hello
	c) Nothing
	d) Varies

7. What will be the final values of a and c in the following C statement? (Initial values: a = 2, c = 1)
 	
c = (c) ? a = 0 : 2;
a) a = 0, c = 0;
b) a = 2, c = 2;
c) a = 2, c = 2;
d) a = 1, c = 2;
	8. What will be the final value of c in the following C code snippet? (Initial values: a = 1, b = 2, c = 1)
	
	c += (-c) ? a : b;
	a) Syntax Error
	b) c = 1
	c) c = 2
	d) c = 3

9. The keyword 'break' cannot be simply used within _____	10. What will be the output of the following C code?

a) do-while
b) if-else
c) for
d) while
	#include <stdio.h>
	int main()
	{
	int a = 1, b = 1, c;
	c = a++ + b;
	printf("%d, %d", a, b);
	}
	a) a = 1, b = 1
	b) a = 2, b = 1
	c) a = 1, b = 2
	d) a = 2, b = 2

11.One of the uses for function pointers in C is _____ a) Nothing b) There are no function pointers in c c) To invoke a function **d) To call a function defined at run-time**	12. What is the default return type if it is not specified in function definition? a) void **b) int** c) double d) short int

13. What will be the output of the following C code?
 	
#include <stdio.h>
void main()
{
static double x;
int x;
printf("x is %d", x);
}
a) Nothing
b) 0
c) Compile time error
d) Junkvalue
	14. What will be the output of the following C code?
	
	#include <stdio.h>
	static int x;
	void main()
	{
	int x;
	printf("x is %d", x);
	}
	a) 0
	b) Junkvalue
	c) Run time error
	d) Nothing

15. Which datatype can accept the switch statement?
a) int
b) char
c) long
d) all of the mentioned
	16. What will be the output of the following C code?
	
	#include <stdio.h>
	#define foo(m, n) m ## n
	int main()
	{
	printf("%s\n", foo(k, l));
	}
	a) k l
	b) kl
	c) Compile time error
	d) Undefined behaviour

17. Which of the following cannot be a structure member? a) Another structure **b) Function** c) Array d) None of the mentioned	18. What will be the output of the following C code? #include <stdio.h> struct student {

	int no = 5;
	char name[20];
	};
	void main()
	{
	struct student s;
	s.no = 8;
	printf("hello");
	}
	a) Nothing
	b) Compile time error
	c) hello
	d) Varies

19. In linux, argv[0] by command-line argument can be occupied by _____ a) ./a.out b) ./test c) ./fun.out.out **d) all of the mentioned**	20. What type of array is generally generated in Command-line argument? a) Single dimension array b) 2-Dimensional Square Array **c) Jagged Array** d) 2-Dimensional Rectangular Array

Test-XII

IBM Campus Placement Paper (Technical)

1. An attribute in a table that is related with primary key of the another table is called... A. Primary Key B. Candidate Key C.Foreign Key D.None Ans : Foreign key	2. Writing comments A. Increases .exe file size. B. Is a good programming practice. C. Takes more compilation time. Ans : B.Is a good programming practice
3. Which of the following has the function scope? A. Automatic B. Static C. Global D. Goto label E. All the above Ans : E.	4. Which one of the following is not related with files? A. fopen B. fclose C. freopn D. fftell E. none Ans: D
5. Which one of the following is not a keyword? A. volatile B. inc C. sizeof D. default E. none Ans : B	6. Rom is A.Randoma Access Memory B.Volatile can be changed. C.Erasable Reprogrammable Memory D. Non Volatile, cannot be changed and it contains boot up program. Ans : non Volatile, cannot be changed and it contains boot up program.
6. Convert the following decimal number into Hex number... 10767 A.3A0Gi B.2A0Fh	7. char *p = (char *)10 means A.It points to the value at address 10. B.It returns the character whose ASCII value is 10.

C.2aoFH D.3A0gI Ans : 2A0Fh	Ans : A
8. Running time of a function f(n)=8T(n/2)+qn for n>1, where q is a constant... A. n power 2 B. n power 4 C.n power 5 D.n power 3 Ans : n power 3.	9. Order of Bubble sort A. O^2 (n Power 2) B. O(n power 2) C. No ordering required as it is simplest sort. D.None Ans : O(n power 2)
10.. Vector processing means A.: Processing the column vector elements parallelly. B.Processing the column vector elements seriablly C. Processing the row vector elements parallelly. D.Processing the row vector elements seriablly Ans : Processing the column vector elements parallelly.	11. Constant member function can be loaded with A. Constant member function. B. Static member function. C. Cannot be overloaded. Ans : C. Cannot be overloaded.
12. By using which of the following functions, we can access the members of	13. Exception specification is in c++ to provide

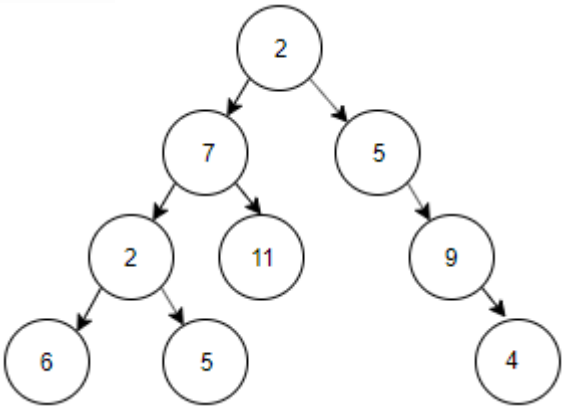
the two instances of a same class A. Member function. B. Friend function C. Both A and B. D. Neither A nor B. E. none. Ans : C.	A. Documentation B. Object oriented ness C. Error handling Ans : c
14. Which one of the following is a parse generator? A. YaCC B. Lex C. Vi D. Emac E. none Ans : YaCC	15. In a communication model, we can communicate in both directions, but only one at a time. So the system is called A. Simplex B. Half duplex C. Full duplex D. none. Ans : Half duplex

Test-13

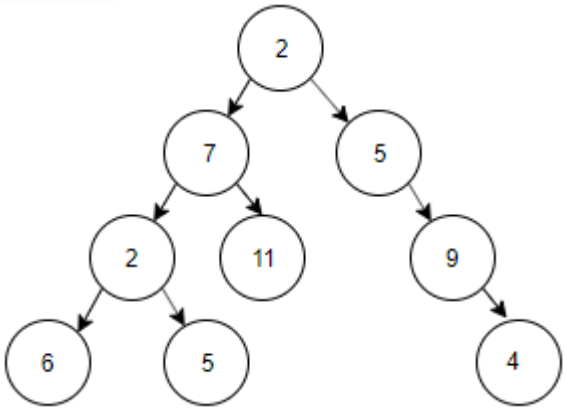
Data Structures

1.In a stack, if a user tries to remove an element from empty stack it is called _____ **a) Underflow** b) Empty collection c) Overflow d) Garbage Collection	2. Which of the following applications may use a stack? a) A parentheses balancing program b) Tracking of local variables at run time c) Compiler Syntax Analyzer **d) Data Transfer between two asynchronous process**
3. Consider the usual algorithm for determining whether a sequence of parentheses is balanced. The maximum number of parentheses that appear on the stack AT ANY ONE TIME when the algorithm analyzes: (()(())(())) are: a) 1 b) 2 **c) 3** d) 4 or more	4. Here is an infix expression: 4 + 3*(6*3-12). Suppose that we are using the usual stack algorithm to convert the expression from infix to postfix notation. The maximum number of symbols that will appear on the stack AT ONE TIME during the conversion of this expression? a) 1 b) 2 c) 3 **d) 4**
5.Circular Queue is also known as _____ **a) Ring Buffer** b) Square Buffer c) Rectangle Buffer d) Curve Buffer	6. If the elements "A", "B", "C" and "D" are placed in a queue and are deleted one at a time, in what order will they be removed? **a) ABCD** b) DCBA c) DCAB d) ABDC
7. A normal queue, if implemented using an array of size MAX_SIZE, gets full when **a) Rear = MAX_SIZE – 1** b) Front = (rear + 1)mod MAX_SIZE c) Front = rear + 1 d) Rear = front	8. In linked list each node contain minimum of two fields. One field is data field to store the data second field is? a) Pointer to character b) Pointer to integer **c) Pointer to node** d) Node
9. What would be the asymptotic time complexity to add a node at the end of singly linked list, if the pointer is initially pointing to the head of the list? a) O(1) b) O(n) **c) θ(n)** d) θ(1)	10. What would be the asymptotic time complexity to insert an element at the front of the linked list (head is known)? a) O(1) **b) O(n)** c) O(n2) d) O(n3)

11. What would be the asymptotic time complexity to insert an element at the second position in the linked list?
a) O(1)
b) O(n)
c) O(n2)
d) O(n3)
	12. Consider the following definition in c programming language
	
	struct node
	{
	int data;
	struct node * next;
	}
	typedef struct node NODE;
	NODE *ptr;
	Which of the following c code is used to create new node?
	a) ptr = (NODE*)malloc(sizeof(NODE));
	b) ptr = (NODE*)malloc(NODE);
	c) ptr = (NODE*)malloc(sizeof(NODE*));
	d) ptr = (NODE)malloc(sizeof(NODE));

13. What would be the Prefix notation for the given equation? (A*B)+(C*D) **a) +*AB*CD** b) *+AB*CD c) **AB+CD d) +*BA*CD	14. Find the output of the following prefix expression *+2-2 1/-4 2+-5 3 1 **a) 2** b) 12 c) 10 d) 4
15. The number of edges from the root to the node is called _____ of the tree. a) Height **b) Depth** c) Length d) Width	16. What is a complete binary tree? a) Each node has exactly zero or two children b) A binary tree, which is completely filled, with the possible exception of the bottom level, which is filled from right to left **c) A binary tree, which is completely filled, with the possible exception of the bottom level, which is filled from left to right** d) A tree In which all nodes have degree 2
17. In a full binary tree if there are L leaves, then total number of nodes N are? a) N = 2*L b) N = L + 1 c) N = L – 1 **d) N = 2*L – 1**	18. For the tree below, write the pre-order traversal.  **a) 2, 7, 2, 6, 5, 11, 5, 9, 4** b) 2, 7, 5, 2, 6, 9, 5, 11, 4 c) 2, 5, 11, 6, 7, 4, 9, 5, 2 d) 2, 7, 5, 6, 11, 2, 5, 4, 9

19.For the tree below, write the post-order traversal.



a) 2, 7, 2, 6, 5, 11, 5, 9, 4
b) 2, 7, 5, 2, 6, 9, 5, 11, 4
c) 2, 5, 11, 6, 7, 4, 9, 5, 2
d) 2, 7, 5, 6, 11, 2, 5, 4, 9