

KENDRIYA VIDYALAYA SANGATHAN- ERNAKULAM REGION
MODEL PAPER - CLASS XII
COMPUTER SCIENCE (083)- ANSWER KEY

1. (a) 2

A function is made inline when the following features are there

- * The function is small,
- * The function is not returning any value and contains no return statement
- * The function does not contain a loop or a switch or goto.
- *The function does not contain static variables
- *The function is not recursive.

The inline function run a little faster then the normal functions as function calling overheads are saved.

(b) `iostream.h, ctype.h` 1

(c) 2

```
. #include<iostream.h>
#include<stdio.h>
void main()
{
    struct emp
    {
        char emp_name[15];
        char emp_no;
        int salary;
    }EMPLOYEE;
    EMPLOYEE.salary = 5000;
    gets(EMPLOYEE.emp_name);
    gets(EMPLOYEE.emp_no);
}
```

(d) `Nnd@*Xrk!*` 3

(e) 2
 3,30
 7,3
 4,30
 4,3

(f) 2

(i) `EKM @TVM@ EKM @`

(ii) `TVM@ EKM @TVM@`

2. (a) 2

A temporary instance of class means an anonymous object(object having no name)of the same class and which is short lived. Its benefit is when an object is required for a very short time(say for an

expression, or a statement), we need not reserve memory for it for long. A temporary object for the same purpose can be created which remains in the memory as long as the statement defining it is getting executed, after the statement the object is automatically destroyed and memory is released. Therefore, memory remains un occupied only for the time when it is needed. A temporary instance is created by explicit call to the constructor. For instance following statement creates a temporary instance of **mark** type and invokes **display()** member function of **mark class** for it.

```
mark(56,55,65).display();
```

- (b) 2
- (i) School obj1(500);
 - (ii) School(School &t)
 - {
 - score = t.score;
 - }

(c) 4

```
class BOOK{
    int BOOK_NO;
    char BOOK_TITLE[20];
    float PRICE;
    float TOTAL_COST(int N)
    {
        float TOTAL;
        TOTAL=N*PRICE;
        return total;
    }
public:
    void INPUT()
    {
        cout<<"\n Enter book no : ";
        cin>>BOOK_NO;
        cout<<"\n Enter Book Title : ";
        gets(BOOK_TITLE);
        cout<<"\n Enter Price : ";
        cin>>PRICE;
    }

    void PURCHASE()
    {
        int n;
        float TOT;
        cout<<" ln Enter the number of copies to be purchased : ";
        cin>> n;
        TOT = TOTAL_COST(n);
        cout<<"\n Total Amount is : " TOT;
    }
};
```

- (d) 4
- (i) Data members : standard, topic
Member functions : readtextbook(), showtextbook(), readphysicsbook(), showphysicsbook();
- (ii) Member functions : readtextbook(), showtextbook()
- (iii) Member Functions : readtextbook(), showtextbook(), readphysicsbook(), showphysicsbook().
- (iv) 68 bytes

3.

- (a) 3

```
void Get1from2(int All[ ], int n, int First[ ], int Second[ ])
{
    int j = 0, k = 0;
    for(int i = 0; i < n; i++)
    {
        if(i % 2 == 0)
            All[i] = First[j++];
        else
            All[i] = Second[k++];
    }
}
```

- (b) 3
B=168, Arr[2][3]=664

- (c) 4

```
void Insert (MYNODE *rear)
{
    MYNODE * newptr;
    newptr = new MYNODE;
    newptr->Link = NULL;
    cout << "Enter the name";
    gets(newptr->name);
    if(rear == NULL)
    {
        front = rear = newptr;
    }
    else
    {
        rear->Link = newptr;
        rear = newptr;
    }
}
```

- (d) 2

```
const int n = 5;
void Diagonals(int A[n][n], int size)
{
    int i, j;
    cout << "Diagonal one :"
```

```

    for(i=0;I<n;i++)
        cout<<A[i][i]<<" ";
    cout<<"Diogonal two :"
```

```

    for(i=0;I<n;i++)
        cout<<A[i][n-(i+1)]<<" ";
}
(e) 1100
```

2

4.
(a).

1

Statement 1 int Position=Fil.tellg();
Statement2 Fil.seekp(Position.sizeof(MATERIAL),ios::beg);
(b)

2

```

void wordcount()
{
    ifstream fil("story.txt");
    char word[30]
    int count = 0;
    while(fil.eof())
    {
        cin>>word;
        if(strcmp("the,word")==0)
            count++
    }
    fil.close();
    cout<<count;
}

```

(c)

3

```

void copyfile()
{
    ifstream fin;
    ofstream fout;
    fin.open("Sports.dat",ios::in || ios::binary);
    fout.open("Atheletic.dat",ios::out || ios::binary);
    Sports s1;
    while(!fin.eof())
    {
        fin.read((char *) & s1, size(s1));
        if strcmp(s1.event, "Atheletic" == 0)
            fout.write(char *) & s1, size(s1));
    }
    fin.close();
    fout.close();
}

```

5.
(a) The candidate key which is not a primary key is called alternate key.
Number of attribute in a relation are called Degree.

2

(b)
(i)SELECT Firstname, Lastname, Address,City FROM EMPLOYEES WHERE CITY='Paris';

6

(ii) SELECT * FROM EMPLOYEES ORDER BY Firstname DESC;

(iii) SELECT Firstname, Lastname, Salary+Benefits "Total Salary" FROM EMPLOYEES E, EMPLOYEES ES WHERE E.EMPID=ES.EMPID AND DESIGNATION="Manager";

(iv) SELECT MIN(SALARY) FROM EMPLOYEES GROUP BY Designation HAVING DESIGNATION IN('Manager', 'Clerk');

(v) Rachel 32000
Peter 28000

(vi) 4

(vii) Manager 215000
Clerk 135000

(viii) 32000

6.

(a) 2

Truth table for $X+(Y+Z) = (X+Y)+Z$

X	Y	Z	Y+Z	X+Y	X+(Y+Z)	(X+Y)+Z
0	0	0	0	0	0	0
0	0	1	1	0	1	1
0	1	0	1	1	1	1
0	1	1	1	1	1	1
1	0	0	0	1	1	1
1	0	1	1	1	1	1
1	1	0	1	1	1	1
1	1	1	1	1	1	1

(b) Correct Diagram (2 Mark) 2

(c) POS : $F=(A+B'+C)(A'+B+C)(A'+B'+C')$ 1

(d)

K-Map (½)

	Z'W'	Z'W	ZW	ZW'
X'Y'	1	1	1	
X'Y	1	1	1	1
XY		1	1	
XY'		1	1	1

There are 4 groups : 1 Octet , 2 Quads , 1 Pair

The Octet (m1+m3+m5+m7+m9+m11+m13+m15) reduces to W

(½)

The Quad1(m0+m1+m4+m5) reduces to X'Z'

(½)

The quad2(m4+m5+m6+m7) reduces to X'Y

(½)

The pair(m0+m11) reduces to XY'Z

(½)

Therefore final expression is :

$F(X,Y,Z,W)=W+X'Z'+X'Y+XY'Z$

(½)

7.

(a) Hub is a hardware device used to connect several computers together 1
Active hubs electrically amplify the signal as it moves from one connected device to another
Passive hubs pass the signal as it is.

(b) It says that 80% of the traffic on a given network segment should be local and not more than 20% of the network traffic should need to move across the backbone. 1

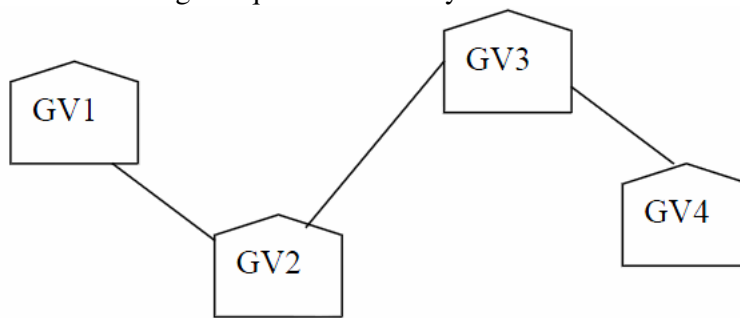
(c) 1
GSM-Global System for Mobile
CDMA-Code Division Multiple Access

(d) 1
The Crackers are malicious programmers who break into secure systems ,where as Hackers are more interested in gaining knowledge about computer systems and possibly using knowledge for playful pranks.

(e) Telnet is an internet facility that facilitates remote login. Remote login is the process of accessing a network from a remote place without actually being at the actual place of working. 1

(f)

(i) Total cable length required for this layout = 75 mts



(ii) To give dedicated bandwidth, the computers in each building should be connected via switches as switches offer dedicated bandwidths.

(iii) By installing routers in each building, shared internet access can be made possible.

(iv) (1) Satellite as it can connect offices across globe.
(2) WAN (Wide Area Network)

(v) Server & Modem to be installed in GV3, because maximum computers are connected in that building

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