

THIS IS THE PAPER IN IIT KHARAGPUR
DESHAW 97

PART 1 TIME:20 MIN
* 20 QUESTIONS , EACH QUESTION CARRIES 2 MARKS

1. A SOLID ICE OF 11 X 8 X 2 INCHES IS MADE INTO ROD OF DIA 4 INCH. WHAT IS THE LENGTH OF ROD?

ANS: 3.5 INCH

2. THERE WERE 750 PEOPLE WHEN THE FIRST SONG WAS SUNG. AFTER EACH SONG 50 PEOPLE ARE LEAVING THE HALL. HOWMANY SONGS ARE SUNG TO MAKE THEM ZERO?

ANS:16

3. A PERSON IS CLIMBING OF 60 MTS . FOR EVERY MINUTE HE IS CLIMBING 6 MTS

AND SLIPPING 4 MTS . AFTER HOWMANY MINUTES HE MAY REACH THE TOP?

ANS: $(60-6)/2 + 1 = 28$

4. HOWMANY ZEROS ARE THERE IN THE PRODUCT OF THE INTEGER FROM 1 TO 100?

ANS: 24 (NOT GIVEN)

1 TO 10 -2 ZEROS

21 TO 30 -3 ZEROS : BECAUSE $25 = 5*5$

$22 = 2*11$

$24 = 2*2*2*3$

5. A CAN DO WORK IN 2 HOURS B CAN DO A WORK IN 3 HOURS WHAT IS THE SHORTEST TIME THEY CAN FINISH THE WORK?

ANS: 1 HOUR 12 MIN.

6. SALARY IS INCREASED BY 1200 , TAX IS DECREASED FROM 12% TO 10% BUT PAYING

SAME AMOUNT AS TAX . WHAT IS THE PREVIOUS SALARY?

ANS:6000

7. THE LEAST NO. WHICH IS WHEN DEVIDED BY 4,6,7 LEAVES A REMAINDER OF 2 ?

ANS: 86

8. A MAN DRIVING THE CAR AT TWICE THE SPEED OF AUTO ONEDAY HE WAS DRIVEN CAR FOR 10 MIN. AND CAR IS FAILED. HE LEFT THE CAR AND TOOK AUTO TO GOTO THE OFFICE . HE SPENT 30 MIN. IN THE AUTO. WHAT WILL BE THE TIME TAKE BY CAR TO GO OFFICE?

ANS:25 MIN

9. A REPORT HS 20 SHEETS, EACH OF 55 LINES AND EACH SUCH A LINE CONSISTS OF 65 CHARACTERS. IF THE REPORT HAS TO BE RETYPED WITH EACH SHEET HAVING

75 LINES AND EACH LINE HAVE 75 CHARACTERS, THE PERCENTAGE OF REDUCTION OF NO OF SHEETS IS CLOSEST IS TO?

ANS: 25%

10. OUT OF 100 FAMILIES IN NEIGHBOUR HOOD , 55 OWN RADIO, 75 OWN T.V AND 25 OWN VCR. ONLY 10 FAMILIES HAVE ALLOF THESE, AND EACH VCR OWNER HAS TV . IF 25 FAMILIES HAVE THE RADIO ONLY, THE NO. OF FAMILIES HAVE ONLY TV ARE?

ANS: 30

APTITUDE: (QUESTIONS 16 TO 19)

KYA KYA IS AN ISLAND IN THE SOUTH PACIFIC . THE INHABITANTS OF KYA KYA ALWAYS ANSWER ANY QUESTION WITH TWO SENTENCES, ONE OF WHICH IS ALWAYS TRUE AND OTHER IS ALWAYS FALSE.

1. YOU ARE WALKING ON THE ROAD AND COME TO A FORK. YOU ASK ,THE INHABITANTS

RAM.LAXMAN, AND LILA AS" WHICH ROAD WILL TAKE ME TO THE VILAGE?

RAM SAYS: I NEVER SPEAK TO STRANGERS. IAM NEW TO THIS PLACE

LAXMAN SAYS: IAM MARRIED TO.LILA. TAKE THE LEFT ROAD

LILA SAYS: IAM MARRIED TO RAM. HE IS NOT NEW TO THIS PLACE

ANS: LEFT ROAD TAKE YU TO THE VILLAGE

2. YOU FIND THAT YOUR BOAT IS STOLLEN. U QUESTIONED THREE INHABITANTS OT ISLANDS AND THEIR REPLIES ARE

JOHN : I DIDNOT DO IT. MATHEW DIDNOT DO IT

MATHEW : I DIDNOT DO IT. KRISHNA DIDNOT DO IT

KRISHNA: I DID NOT DO IT; I DONOT KNOW WHO DID IT

ANS: MATHEW STOLEN THE BOAT

3. YOU WANT TO SPEAK TO THE CHIEF OF VILLAGE , U ASK THREE FELLOWS AMAR BOBBY, CHARLES AND BOBBY IS WEARING RED SHIRT

AMAR : IAM NOT BOBBY`S SON ; THE CHIEF WEARS RED SHIRT

BOBBY : IAM AMARS FATHER ; CHARLES IS THE CHIEF

CHARLES : THE CHIEF IS ONE AMONG US; IAM THE CHIEF

ANS: BOBBY IS THE CHIEF

4. THERE IS ONLY OPNE POLOT IN THE VILLAGE(ISLAND). YOU INTERVIEWED THREEM MAN

KOISK ,LORRY AND MISHRA

U ALSO NOTICE THAT KOISK IS WEARING CAP.

M SAYS : LARRY IS FATHER IN THE PILOT .LARRY IS NOT THE PRIESTS SON

KOISK : IAM THE PRIEST ON THEIS ISLAND ONLY PRISTS CAN WEAR THE CAPS

LARRY : IAM THE PRIEST SON . KOISK IS NOT THE PREST

ANS : KOISK IS THE PILOT

THIS PAPER HAS GIVEN IN IIT DELHI , SO GO THROUGH THIS IT WILL GIVE ROUGH IDEA;

```
1. typedef struct{
    char *;
    nodeptr next;
} * nodeptr;
```

what does nodeptr stand for?

2. supposing thaty each integer occupies 4 bytes and each charactrer 1 byte , what is the output of the following programme?

```
#include<stdio.h>
main()
{
    int a[] ={ 1,2,3,4,5,6,7};
    char c[] = {' a','x','h','o','k'};
    printf("%d\t %d ", (&a[3]-&a[0]),(&c[3]-&c[0]));
}
```

ans : 3 3

3. what is the output of the program?

```
#include<stdio.h>
main()
{
```

```

struct s1 {int i; };
struct s2 {int i; };
struct s1 st1;
struct s2 st2;
st1.i =5;
st2 = st1;
printf(" %d " , st2.i);
}

```

ans: nothing (error)

expl: diff struct variables should not assigned using "=" operator.

4.what is the output of the program?

```

#include<stdio.h>
main()
{
int i,j;
int mat[3][3] ={1,2,3,4,5,6,7,8,9};
for (i=2;i>=0;i--)
for ( j=2;j>=0;j--)
printf("%d" , (*(mat+j)+i));
}

```

ans : 9 6 3 8 5 2 7 4 1

5.

```

fun(n);
}
int fun( int n)
{
int i;
for(i=0;i<=n;i++)
fun(n-i);
printf(" well done");
}

```

howmany times is the printf statement executed for n=10?

ans: zero

expl: Befire reaching to printf statement it will goes to infinite loop.

6.what is the output of the program?

```

main()
{
struct emp{
char emp[];
int empno;
float sal;
};
struct emp member = { "TIGER"};
printf(" %d %f", member.empno,member.sal);

```

ans: error. In struct variable emp[], we have to give array size.

If array size given

ans is 0, 0.00

7. output of the program?

```

# define infiniteloop while(1)
main()
{
infiniteloop;
printf("DONE");
}

```

```
}
```

ans: none

expl: infiniteloop in main ends with ";" . so loop will not reach end;
and the DONE also will not print.

8. output of the program?

```
main()
{
int a=2, b=3;
printf(" %d ", a+++b);
}
```

ans:5

expl: here it evaluates as a++ + b.

9. output of the program?

```
#define prn(a) printf("%d",a)
#define print(a,b,c) prn(a), prn(b), prn(c)
#define max(a,b) (a<b)? b:a
main()
{
int x=1, y=2;
print(max(x++,y),x,y);
print(max(x++,y),x,y);
}
```

ans: 3 4 2

10. which of the following is the correct declaration for the function

main() ?

ans: main(int , char *[])

11. if ptr is defined as

```
int *ptr[][100];
```

which of the following correctly allocates memory for ptr?

ans: ptr = (int *) (malloc(100* sizeof(int)));

FEW MORE PROGRAMS HERE BUT NOT AVAILABLE:

1) ONE RECTANGULAR PLATE WITH LENGTH 8INCHES,BREADTH 11 INCHES AND
2 INCHES THICKNESS IS THERE.WHAT IS THE LENGTH OF THE CIRCULAR ROD
WITH DIAMETER 8 INCHES AND EQUAL TO VOLUME OF RECTANGULAR PLATE?

ANS: 3.5INCHES

2) WHAT IS THE NUMBER OF ZEROS AT THE END OF THE PRODUCT OF THE NUMBERS
FROM 1 TO 100

3) in some game 139 members have participated every time one fellow will
get bye what is the number of matches to choose the champion to be
held?

ans: 138

4) one fast typist type some matter in 2hr and
another slow typist type the
same matter in 3hr. if both do combinely in how much time they
will finish.

ans: 1hr 12min

5) in 8*8 chess board what is the total number of squares
refer odel

ans:204

6) falling height is proportional to square of the time.

one object falls 64cm in 2sec than in 6sec from how much height the object will fall.

- 7) gavaskar average in first 50 innings was 50 . after the 51st innings his average was 51 how many runs he made in the 51st innings
- 8) 2 oranges, 3 bananas and 4 apples cost Rs.15 . 3 oranges 2 bananas 1 apple costs Rs 10. what is the cost of 3 oranges, 3 bananas and 3 apples ANs Rs 15.
- 9) in 80 coins one coin is counterfeit what is minimum number of weighings to find out counterfeit coin
- 10) in a company 30% are supervisors and 40% employees are male if 60% of supervisors are male. what is the probability that a randomly chosen employee is a male or female?
- 11) statement: all green are blue are blue, all blue are white conclusion:
I) some blue are green II) some white are green
III) some green are not white IV) all white are blue
a) he has given four choices like gre type
- 12) all teachers are students. some students are girls. this type of questions are there.
we cant able to reproduce them.:wq

1. while((*p++=*q++)!=0){}
is equal to
expl: while((*p++=*q++)!='\0'){}
a) b) c) d)

2. the function strcmp(str1, str2) returns
ans: int

3. int *x[](); means
expl: Elements of an array can't be functions.

```
4. #define PRINT(int) printf("int=%d",int);
main()
{int x,y,z;
x=03;y=-1;z=01;
PRINT(x^x);
z<<=3;PRINT(x);    ----> I think here may be (z). for this ans=8.
                    if (x) ans ix =3.
y>>=3;PRINT(y);
}
```

expl: 0,8,-1 (if second is z)

```
5. struct list{
int x;
struct list *next;
}*head;
the struct head.x =100
above is correct / wrong
```

expl: Before using the ptr type struct variable we have to give memory to that .

And also when ever the struct variable is ptr then we access the members by "->" operator.

```
6. '-'=45 '/'=47
printfr(%d/n,'-', '-', '-', '-', '/', '/', '/');
o/p =?
```

ans: 45 (i.e it takes first argument in

printf function.

```
o/p=?  
int i;  
i=1;  
i=i+2*i++;  
printf("%d,i);
```

ans: 4

```
8. { ch='A';  
while(ch<='F'){  
switch(ch){  
case 'A':case 'B':case 'C':case 'D':ch++;continue;  
case 'E':case 'F':ch++;  
}  
putchar(ch);  
}  
} a)ABCDEF b.EFG c.FG d.error
```

ans: c

```
9. FILE *fp1,*fp2;  
fp1=fopen("one","w")  
fp2=fopen("one","w")  
fputc('A',fp1)  
fputc('B',fp2)  
fclose(fp1)  
fclose(fp2)}  
a.error b. c. d.
```

ans: no error. But It will
over writes on same file.

```
10. int a=1, b=2, c=3, *pointer;  
pointer=&c;  
a=c/*pointer;  
b=c;  
printf("a=%d b=%d",a,b);  
a. a=1 b=3  
b a=3 b=3  
c 3 2  
d. error
```

ans: d . Because ";" indicates
of that statement. so It

competition
give error.

* Imp: And in above program " a=c/*pointer " statement
it considering as starting of comment
statement.

So , It also causing for syntax error.

```
11.#include<malloc.h>  
char *f()  
{char *s=malloc(8);  
strcpy(s,"goodbye")}  
main()  
{  
char *f();  
printf("%c",*f()='A');  
o/p=?
```

ans: prints " A "

```

13. int sum(n)
int n;
if(n<1)return n;
else return(n+sum(n-1))
a 10 b 16 c 14 d 15

```

ans: If we take n=5 then ans is 15.

14. when a function is recursively called all ,
automatic variables are a. stored in stack b . c. d

ans: (a)

```

15) #define MAN(x,y) (x)>(y)?(x):(y)
{ int i=10;j=5;k=0;
k= MAX(i++,++j)
printf("%d %d %d %d,i,j,k)}
16) a=10;b=5; c=3;d=3;
if(a<b)&&(c=d++)
printf("%d %d %d %d a,b,c,d)
else printf("%d %d %d %d a,b,c,d);

```

:

```

19. what is o/p
#include<stdarg.h>
show(int t,va_list ptr1)
{
int a,x,i;
a=va_arg(ptr1,int)
printf("\n %d",a)
}
display(char)
{int x;
listptr;
va_star(otr,s);
n=va_arg(ptr,int);
show(x,ptr);
}
main()
{
display("hello",4,12,13,14,44);
}
a) 13 b) 12 c) 44 d) 14

```

.....

```

17. if the following program (my prog)
main(int size of ,char *arg[])
{ while(size of arg) printf("%s",arg[--size of arg)
}
is run from the command line as myprog jan feb mar apr
what would be the o/p
a)myprog jan,feb,mar,apr
b)rev
c)jan,feb,mar,apr
d)error

```

.....

```

18.what is o/p
main()
{int i=3;
while(i--)
{
int i=100

```

```

i--;
printf("%d..",i);
}
}

```

- a) infinite loop
- b) error
- c) 99..99..99..99
- d) 3..22..1..

.....
20)what is the o/p of the program

```

main()
{
    int rows=3,columns=4;
    int a[rows][columns]={1,2,3,4,5,6,7,8,9,10,11,12};
    i=j=k=99;
    for(i=0;i<rows;i++)
        for(j=0;j<columns;j++)
            if(a[k][j]<k) k=a[i][j];

    printf("%d\n",k);
}

```

From naidu@indy.iitm.ernet.in Fri Oct 3 17:19:49 1997
Received: from [144.16.241.170] by violet.iitm.ernet.in (AIX 3.2/UCB 5.64/4.03)
id AA23610; Fri, 3 Oct 1997 17:19:49 GMT
Received: by indy (940816.SGI.8.6.9/940406.SGI)
id RAA02593; Fri, 3 Oct 1997 17:15:32 +0530
Date: Fri, 3 Oct 1997 17:15:32 +0530
From: naidu@indy.iitm.ernet.in (P.V.T. Naidu)
Message-Id: <199710031145.RAA02593@indy>
To: mepg9618@violet.iitm.ernet.in
Subject: Deshaw!
Cc: oepg9627@violet.iitm.ernet.in
Status: RO

DE-Shaw Software,Hyderabad.

SECTION-A

you should write the programs for the following problems in C.

1. swapping two variables x,y without using a temporary variable.
2. a program has been given asking to find the output
ans. it is algorithm for finding G.C.D
3. write a program for reversing the given string.
4. the integers from 1 to n are stored in an array in a random fashion. but one integer is missing. write a program to find the missing integer.
ans. idea. the sum of n natural numbers is = n(n+1)/2.
if we subtract the above sum from the sum of all the numbers in the array , the result is nothing but the missing number.
5. some bit type of questions has been given on pointers asking to find whether it is correct from syntax point of view. and if it is correct explain what it will do.(around 15 bits).

SECTION-B

ANSWER AS MANY AS POSSIBLE.

- 6.& 7. two programs on pre-processor directions has been given asking to find the output.
8. simple question given on pointer
 - a) kernighan & richie page no. 122
 - b) schaum series page no. 323try to understand the pointer problems given here he asked to explain in the interview if answer it in exam.
9. write a c program to find whether a stack is progressing in forward or reverse direction.
10. write a c program that reverses the linked list.

GUIDELINES:

the interview is very tough he is asking to do the problems in front of him. he is also giving some new problems to solve before him.

you should have a very good funda of C language.

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