

Optimize the below 1,2,3,4 questions for time:

1)

```
int i;
if i=0 then i:=1;
if i=1 then i:=0;
```

2)

```
int i;
if i=0 then i:=1;
if i=1 then i:=0;
(given that i can take only two values (1,0))
```

3)

```
int i;
if i=0 then i:=1;
else if i=1 then i:=0;
(given that i can take only two values (1,0))
```

4)

```
int m,j,i,n;
for i:=1 to n do
m:=m+j*n
```

5) Expand the following

- a) ISDN
- b) CASE
- c) CSMA/CD
- d) OOPS
- e) MIMD

6) In the following questions, answer A,B,C,D depending on when the errors are detected?

- A if no error is detected
- B if semantic and syntactic checking
- C if during Code generation & Symbol allocation
- D run time

- a) Array overbound
- b) Undeclared identifier
- c) stack underflow
- d) Accessing an illegal memory location

7) How many page faults will occur for below sequence of pages when LR U

page replacement algorithm is used ( The memory can only have 3pages):

1,2,3,4,2,1,5,2,4 (something like that)

- 8) If a CPU has 20 address lines but MMU doesn't use two of them. OS occupies 20K. No virtual memory is supported. What is the maximum memory available for a user program?
- 9) For a binary tree with n nodes, How many nodes are there which has got both a parent and a child?
- 10) Understand the funda of incrementing a variable using `val++` and `++val`. Some programs are given for error correction.
- 11) Learn datagram. (Computer networks)
- 12) Which of the following can be zero? (only one)
  - a) swap space
  - b) physical memory
  - c) virtual memory
- 13) What is a must for multitasking?
  - a) Process preemption
  - b) Paging
  - c) Virtual memory
  - d) None of the above
- 14) A question on call by value,  
call by name,  
call by reference.

```
f(x,y,z)
{
y := y+1;
z := z+x;
}
main()
{
int a,b;
a := 2
b := 2;
f(a+b,a,a);
print a;
}
```

what is the value of a printed for three different calls in main.

- 15) Using the following instructions and two registers, A & B.  
find out A XOR B and put the result in A  
`PUSH <reg>`  
`POP <reg>`  
`NOR` These instructions operate with A & B and puts the result in i

n  
AND A

(question basically to get XOR in terms of NOR and AND)

16) True/False questions:

- 1) The page size should be the power of 2.
- 2)

17)

```
int i=0;
int j=0;
```

```
loop:
    if(i = 0)
        i++;
    i++;
    j++;
    if(j<= 25)
        goto loop
```

xxx:

question1 : how many times is the loop entered

A few questions of that sort. some count fundaes. Easy one )

18) Who handles page faults?

- a) OS
- b) MMU
- c) Hardware logic
- d) etc etc....

19) For which of following is it not possible to write an algorithm.

- a) To find out 1026th prime number
  - b) To write program for NP-complete problem
  - c) To write program which generates true Random numbers.
- etc...

20) what is the essential requirement for an real-time systems

- a) pre-emption
- b) virtual memory
- c) paging etc...

-- Question bank collected ,compiled and edited by BPM and Baiju.

```

-----
> We do not remember the questions exactly, here we just tried to cover
> the major areas.
>
> Paper consists of two sections : 1. analytical (20 marks)
>                                     2. C skills (20 marks)total time 45

```

```
min
```

```

>
> Analytical:
> -----
>
> 1. Given a cube, with different colors on its faces, and then is cut
> into 64 pieces, and the questions relate to the colors of different
> colored small cubes.
>
> 2. A few ladies and gents sit around table in some given order and 4
> questions are about their seating arrangement with some restrictions
> .
>
> 3. Draw a venn diagram for 3 items : white, flowers, cloth
>
> Ans : draw 3 circles each intersecting the other , with white kept
in the
> middle.
>
> 4. A problem related to seating arrangement of 4 people ( 2 ladies
and
> 2 gents) with some restrictions
>
> 5. problem related to milk with water added to it for three times
>
> Ans: 20.5 litres
>
> 6. Problem related to diagrams . Five diagrams were given and asked
to
> find the sixth one.
>
> C-Skills:
> -----
>
> 1. Max number of nodes in a binary tree with height 3 is 20 : Ans:
False
>
> 2. 10,20,30,40,50,60 : give the order when put in a queue and in a
stack
>
> Ans : Queue : 10,20,30,40,50,60

```

```

>      stack : 60,50,40,30,20,10
>
> 3. Debugging is the process of finding
>
> Ans : logical and runtime errors
>
> 4. trace the error:
>
>      void main(){
>          int &a;
>          /* some other stuff here */
>      }
> Ans: syntax error
>
> 5. a problem with a function named 'myValue' will be given and asked
to
> find the value of main() for an argument of 150,
>
> Ans : 150
>
> 6. Some problems related to 'for' loops.
>
> 7. problem on conditional inclusion.
>
> 8. problem related to depth first and breadth first search (DSA
subject)
>
> 9. study the syntax of malloc function
>
> 10. locate the error
>
>      int arr (20);
> Ans: syntax error.
>
>
>
> IITD.
> 05 -09-1997.

```

Model paper of Inetrgraph

NO.of questions 40. Time 45minutes  
 out of 40 questions 20 from 'c' and 20 from analytical  
 ability,quantitative ability .  
 also 1 question \_\_\_\_ to draw venn diagram  
 1 question\_\_ on analogy  
 1 " \_\_\_\_\_non verbal reasoning  
 ALL THESE ARE NOT TOUGH .AVERAGE LEVEL.  
 THEY HAVE GIVEN TWO TYPES OF PAPERS.HERE I AM GIVING THE PAPER WHICH

WAS WRITTEN BY MY FRIEND.

1. there are 6 (p,q,r,s...) people. each one play one game

---tennis, football, hockey, cricket etc

clues given like: shortest one plays hokey

largest person plays ..tennis

P,Q ARE NEITHER LARGEST NOR SHORTEST

R PLAYS FOOTBALL

s is between t & r in height

question: who plays which game

who is taller than whom

2. a cube has colors blue, red, yellow each on two opposite sides. cube is

divided into "32 small cubes and 4 large cubes".

question: how many cubes (on 36 cubes) have blue at least one side.

how many cubes have colors on two sides.

3. analogy: cell: tissue::atom:?

4. a person sold two articles for 80 /- each. with 20% profit on one article and 20% loss on another article, what is the loss / profit he will gain on both.

5. five cities. city1 is west to city3. city4 is east to city 5. \_\_\_\_\_ etc

which is farthest on west side.

6. one question on:  $-+=$ ,  $*=-$ ,  $/=*$  etc

then  $10/5*45=?$

7. on C, paper is easy. mostly on pointers, 3 question on structures, 5 on

fundamentals,

8. ex: define max 10

```
main()
```

```
{int a,b;
```

```
int *p,*q;
```

```
a=10;b=19;
```

```
p=&(a+b);
```

```
q=&max;
```

```
} Q a) error in p=&(a+b) b) error in p=&max c) error in both d) no error
```

important suggestions:

1. average preparation is enough to qualify for interview. time is enough.

2. they are particular about academic background .

3. interview is only on personal details. no question on technical subjects

4. they may change paper sets also.
5. in outside recruitment they are asking more questions on CAD.  
but not in campus.  
in iitd they interviewed 5 students out of 21 .selected 1, waiting list 1.
6. cut off cgpa: 7.5

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-----

HELLO FRIEND,

I AM HERE WITH SENDING YOU THE NEW INTERGRAPH QUESTION PAPER .  
THIS IS A NEW PAPER . PUT THIS IN YOUR HOMEPAGE SO THAT IT WILL BE  
USEFUL TO OTHERS ALSO.

INTERGRAPH :

COMPILED AND EDITED BY V.P.CHANDRU & M.K.KAILASH.

TEST HELD ON : ANNA UNIVERSITY , CHENNAI 22/12/99

NUMBER OF PERSONS UNDER TAKEN THE TEST :60

pPERSONS SELECTED FOR INTERVIEW : 14

NO OF CANDIDATES SELECTED : 3

QUESTION PAPER CONSIST OF TWO PARTS

ANALYTICAL SKILLS : 20 QUES, 20 MIN.

C SKILLS : 30 QUES, 30 MINS.

ANALYTICAL :

-----

1. COMPLETE THE DIAGRAM :

FOUR FIG WILL BE GIVEN , YOU HAVE TO DRAW THE FINAL ONE

TRIANGLE FIG :

2. DRAW VENN DIAGRAM RELATING RHOMBUS, QUADRILATERAL & POLYGON

3. IN A GROUP OF 5 PERSONS A,B,C,D,E ONE OF THE PERSON IS ADVOGATE, ONE IS DOCTOR, ONE BUSINESSSS MAN, ONE SHOP KEEPER AND ONE IS PROFESSOR.

THREE OF THEM A,C,AND PROFESSOR PREFER PLAYING CRICKET TO FOOT BALL AND TWO

OF THEM B AND BUSINESSMAN PREFER PLAYING FOOT BALL TO CRICKET. THE SHOP

KEEPER AND B AND A ARE FRIENDS BUT TWO OF THESE

PREFER PLAYING FOOT BALL TO CRICKET. THE ADVOGATE IS C'S BROTHER AND BOTH PLAY SAME GAME . THE DOCTOR AND E PLAY CRICKET.

(a) WHO IS ADVOGATE ?

A, B, C, D

(b) WHO IS SHOP KEEPER ?

A, B, C, D

(C) WHICH OF THE FOLLOWING GROUP INCLUDE PERSONS WHO LIKE PLAYING CRICKET

BUT DOESN'T INCLUDE PROFESSOR ?

AB,BC,CD, NONE

(d) WHO IS DOCTOR ?

A,B,C,D.

{ SAME MODEL PROBLEM WAS ASKED IN QUES PAPER BUT PROFESSIONS WILL BE DIFFERENT

SUCH AS HORTICULTURIST ,PHYSICST,JOURNALIST,ADVOCATE AND OTHER ONE. INSTEAD OF

FOOTBALL AND CRICKET THEY WILL GIVE TEA AND COFFEE }

4. THEY WILL GIVE SOME CONDITION'S AND ASKED TO FIND OUT FARTHEST CITY

IN THE

WEST (EASY ONE )?

5. TRAVELLING SALES MAN PROBLEM .

SOME CONDITION WILL BE GIVEN WE HAVE TO FIND OUT THE ORDER OF STATION THE

SALES MAN MOVES

( THREE QUES'S )

6. +, -, \*, /, WILL BE GIVEN DIFFERENT MEANING

EXAMPLE : TAKE + AS \* AND SO ON .

THEY WILL GIVE EXPRESSION AND WE HAVE TO FIND THE VALUE OF THAT.

7.  $3+5-2=4$

WHICH HAS TO BE INTERCHANGE TO GET THE RESULT ?

8. WE DON'T NO EXACT PROBLEM .

EX : 8A3B5C7D.....

A WILL BE GIVEN + SIGN.

B WILL BE GIVEN - SIGN.

FIND THE VALUE OF EXPRESSION ?

9. FIND THE TOTAL NUMBER OF SQUARES IN  $1/4$  OF CHESS BOARD ?

10. 6 FACE OF A CUBE ARE PAINTED IN A MANNER ,NO 2 ADJACENT FACE HAVE

SAME

COLOUR. THREE COLOURS USED ARE RED BLUE GREEN. CUBE IS CUT IN TO 36 SMALLER

CUBE IN SUCH A MANNER THAT 32 CUBES ARE OF ONE SIZE AND REST OF THEM BIGGER

SIZE AND EACH BIGGER SIDE HAVE NO RED SIDE. FOLLOWING THIS

THREE QUES WILL BE ASKED .

{ IN QUES PAPER COLORS WILL BE DIFFERENT }

11. TWO LADIES ,TWO MEN SIT IN NORTH EAST WEST SOUTH POSITION OF RECTANGULAR

TABLE. USING CLUES IDENTIFY THEIR POSITION ?

12. CLOCK PROBLEM :

(ONE QUES )

13. ALL MEN ARE VERTEBRATE.

SOME MAMMALS ARE MEN.

CONCLUDE.

\*\*\*\*\*

## C SKILLS :

- 
1. `find(int x,int y)`  
`{ return ((x<y)?0:(x-y)); }`  
`call find(a,find(a,b))` use to find  
 (a) maximum of a,b  
 (b) minimum of a,b  
 (c) positive difference of a,b  
 (d) sum of a,b
  2. integer needs 2bytes , maximum value of an unsigned integer is  
 (a) { 2 power 16 } -1  
 (b) {2 power 15}-1  
 (c) {2 power16}  
 (d) {2 power 15}
  3. y is of integer type then expression  
`3*(y-8)/9` and `(y-8)/9*3` yields same value if  
 (a) must yields same value  
 (b) must yields different value  
 (c) may or may not yields same value  
 (d) none of the above
  4. `5-2-3*5-2` will give 18 if  
 (a) - is left associative, \* has precedence over -  
 (b) - is right associative, \* has precedence over -  
 (c) - is right associative, - has precedence over \*  
 (d) - is left associative, - has precedence over \*
  5. `printf("%f", 9/5);`  
`prints`  
 (a) 1.8,  
 (b) 1.0,  
 (c) 2.0,  
 (d) none
  6. `if (a=7)`  
`printf(" a is 7 ");`  
`else`  
`printf("a is not 7");`  
`prints`  
 (a) a is 7,  
 (b) a is not 7,  
 (c) nothing,  
 (d) garbage.
  7. `if (a>b)`  
`if(b>c)`  
`s1;`

else s2;  
 s2 will be executed if  
 (a)  $a \leq b$ ,  
 (b)  $b > c$ ,  
 (c)  $b \leq c$  and  $a \leq b$ ,  
 (d)  $a > b$  and  $b \leq c$ .

8. main()  
 {  
   inc(); ,inc(); , inc();  
 }  
 inc()  
 { static int x;  
   printf("%d", ++x);  
 }  
 prints  
 (a) 012,  
 (b) 123,  
 (c) 3 consecutive unprectiable numbers  
 (d) 111.

9.preprocessing is done

(a) either before or at begining of compilation process  
 (b) after compilation before execution  
 (c) after loading  
 (d) none of the above.

10. printf("%d", sizeof(""));  
 prints  
 (a) error  
 (b) 0  
 (c) garbage  
 (d) 1.

11.main()  
 {  
   int a=5,b=2;  
   printf("%d", a+++b);  
 }  
  
 (a) results in syntax,  
 (b) print 7,  
 (c) print 8,  
 (d) none,

12. process by which one bit patten in to another by bit wise operatio  
 n  
 is  
 (a) masking,

- (b) pruning,
- (c) biting,
- (d) chopping,

13. value of automatic variable that is declared but not initialized will be

- (a) 0,
- (b) -1,
- (c) unpredictable,
- (d) none,

14. `int v=3, *pv=&v;`  
`printf(" %d %d ", v,*pv);`  
 output will be

- (a) error
- (b) 3 address of v,
- (c) 3 3
- (d) none.

15. declaration

`enum cities{bethlehem, jericho, nazareth=1, jerusalem}`  
 assign value 1 to

- (a) bethlehem
- (b) nazareth
- (c) bethlehem & nazareth
- (d) jericho & nazareth

16. `#include <conion.h>`  
`#include <stdio.h>`  
`void main()`  
`{`  
`char buffer[82]={80};`  
`char *result;`  
`printf("input line of text, followed by carriage return :\n");`  
`result = cgets(buffer);`  
`printf("text=%s\n", result);`  
`}`

- (a) `printf("length=%d", buffer[1]);`
- (b) `printf("length=%d", buffer[0]);`
- (c) `printf("length=%d", buffer[81]);`
- (d) `printf("length=%d", buffer[2]);`

17. consider `scanf` and `sscanf` function , which is true

- (a) no standard function called `sscanf`
- (b) `sscanf(s,...)` is equivalent to `scanf(...)` except that input character are taken from string `s`.
- (c) `sscanf` is equivalent to `scanf`.
- (d) none of above.



18. #include <stdio.h>

main()

{

char line[80];

scanf("%[^\\n]", line);

printf("%s", line);

}

what scanf do ?

(a) compilation error . illegal format string.

(b) terminates reading input into variable line.

(c) and (d) other two options.

19. problem was big so i couldn't remember . simple one.

20 . ceil(-2.8) ?

(a) 0

(b) -3.0

(c) -2.0

(d) 2

21. for( p=head; p!=null; p= p -> next)  
free(p);

(a) program run smooth.

(b) compilation error.

(c) run time error.

(d) none of above.

22. int x[3][4] = {

{1,2,3},

{4,5,6},

{7,8,9}

}

(a) x[2][1] = x[2][2] =x[2][3] = 0

(b) value in fourth column is zero

(c) value in last row is zero

(d) none of above.

23. problem was big so i couldn't remember . simple one.

24. main ()

{

printf("%u" , main());

}

(a) print garbage.

(b) execution error

(c) printing of starting address of function main.

(d) infinite loop.

25 . int a, \*b = &a, \*\*c =&b;

....  
 ....  
 .....

```

    a=4;
** c= 5;

```

- (a) doesnot change value of a
- (b) assign address of c to a.
- (c) assign value of b to a.
- (d) assign 5 to a.

26.problem was big so i couldn't remember . simple one.

27.problem was big so i couldn't remember . simple one.

28 . answer : swapping of values .

29 . simple one.

```

30 . i =5;
    i= (++i)/(i++);
    printf( "%d" , i);

```

prints ,

- (a) 2
- (b) 5
- (c) 1
- (d) 6

in interview they will ask questions related to u r project and some

c  
 fundas.

\*\*\*\*\* all the  
 best\*\*\*\*\*