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

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```
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
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  C if during Code genration & Symbol allocation
  D run time

a) Array overbound
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7) How many page faults will occur for below sequence of pages when LRU
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 does'nt 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 operates with A & B and puts the result 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
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2.a cube has colors blue,red ,yellow each on two opposite sides.cube i
s
divided into "32 small cubes and 4 large cubes".
question:how many cubes (on 36 cubes) have blue at leat one side.
how many cubes have colors on two sides.
3.anlogy: cell: tissue::atom:?

4.aa person sold two articles for 80 /- each.with 20% profit on one article and 20% loss on another article, what is the loss / prifit 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 o
n
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 foe 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 5students 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

pERSONS 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 BUSINESSS 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 WIIL 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 HAV
E
SAME
COLOUR. THREE COLURS 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
RECTANCULAR
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<= b,
(b) b>c,
 (c) b<=c and a<=b,
 (d) a>b and b<=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 intialized 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}
assian 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 charecter 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**********