EXAMPLE

1.
(a) The gap between the average starting salaries of teachers and those of other professionals has shrunk in recent years.
(b) The average age of first year teachers is same as it was in 1975.
(c) Starting teachers are no longer underpaid.
(d) The extent of a persons formal education is a measure by which to determine his level of salary.
(e) Over the last few years, the average starting salaries of other professionals have increased by 20%

    (a) ebd   (b) bad   (c) abc   (d) ***aec***
  Answer is d; the statement a,e,c are logically sequenced.

1.
(a) Japan now produces more semiconductors, than US.
(b) Semiconductors are one of the fastest growing industry segments.
(c) A decade ago Japan was producing 24% and the US was producing 22% of the worlds semiconductors, respectively.
(d) 10 years ago Japan ranked third in semiconductor production.
(e) During the last 10 years Japans production of semiconductors has increased by 500% while that of the us has increased by 200%

    (a) abd   (b) cea   (c) edc   (d) bcd

2.
(a) Coding program 1   (b) Writing specifications for program 1
(c) Integrating program 1 with other programs   (d) Testing program 1
(e) Collecting cheque from the client of the program

    (a) edcba   (b) abcde   (c) badce   (d) abdce

3.
(a) Bob is older than Dinku and Ismer   (b) Rahul is oldet than Dinku
(c) Rahul is younger than Bob   (d) Rahul is older than Ismer   (e) Dinku is older than Ismer

    (a) edb   (b) bcd   (c) dab   (d) abc

4.
(a) Defining the data type of the variable   (b) Using the variable   (c)

Declaring the variable
(d) Initializing the variable　　　　　　　　　(e) Remove the variable from the
memory
　　　(a) cadbe　　　　　　(b) abcde　　　　　　(c) cdb
(d) acdbe

5.
(a) In the last six months the number of robberies at gun point in the city has dropped by 18%
(b) Guns are necessary protection against robbers
(c) Strict gun control causes a decrease in violent crime
(d) Most crimes are committed with guns and knives
(e) Six months ago this city's council passed a gun control law
　　　(a) bda　　　　　　(b) acb　　　　　　(c) ebc　　　　　　(d) eac

6.
(a) All missiles follow a fixed trajectory　　　　(b) The boomerang requires a high degree of skill
(c) A boomerang is a missile　　　　　　　(d) The boomerang is used by Australian aborigines to hunt
(e) A boomerang normally has an elliptical flight path

　　　(a) adc　　　　　　(b) aec　　　　　　(c) cba　　　　　　(d) ebd

7.
(a) Saving the source file　　　　　(b) Compiler execution　　　　　(c) Pre-processor execution
(d) Bug fixing　　　　　　　　(e) Reading the error file
　　　(a) eabcd　　　　　　(b) acbed　　　　　　(c) abced　　　　　　(d) cbeda

8.
(a) But if powers that be, extended any, how will be the first one to take might claim
(b) I don't believe in seeking special privileges because I'm a woman
(c) Let me explain this in context of what happened the other
　　　(a) bac　　　　　　(b) acb　　　　　　(c) bca　　　　　　(d) abc

9.
(a) A long search produce a comprehensive list of 203 manufacturing firms
(b) The number of workers employed by the firms in the area ranged from a dozen to approximately 3500
(c) Those concerned with mining and quarrying, construction ,transport, trade and commerce were excluded
(d) The investigation was confined to manufacturing firms in the area
　　　(a) bcda　　　　　　(b) bcab　　　　　　(c) abcd　　　　　　(d) dabc

10.
(a) The quickly came back with pots laden with water
(b) The water gurgled out and the dying embers hissed and send up little curls of vapour
(c) The poured it on the glowing bed of charcoal
(d) The men jumped up and rushed to the river

   (a) acdb   (b) bacb   (c) dabc
(d) dcba

SECTION 2-   DATA SUFFICIENCY

Each item has a question followed by two statements :

Mark a: If the question can be answered with the help of statement "1" alone

Mark b: If the question can be answered with the help of statement "2" alone

Mark c: If the question can be answered with the help of both the statements but not with the help of either statement by itself

Mark d: If the question cannot be answered even with the help of both the given statements

Example:

1. Does winking improve eye sight?

  1) During the process of winking the focal power of eyes improves

  2) Experiments have shown that eye exercise lead to an improvement in eye sight
Answer: d because neither 1 or 2 is adequate.

Questions :

11. Each floor of a 3 storeyed building is occupied and a total of 15 people live in the building. How many live on the first floor?
     1) The no. of people living in the first floor is an odd number
     2) The no. of people living on the first floor double the number living on the second floor

12. Program 1 can be implemented
     1) Program 1 is tested and error free
     2) The implementation site is ready

13. The sum of digits of a 5 digit no. is 10. The digit in the ten thousandth place is cube of that of units place. what is the number.
      1) The digits in the thousandth, hundredth and tenth place are equal
      2) The digit in the units and tenth place are not equal

14. If I deposit Rs.1000 in the bank now and withdraw the amount only at the end of the year how much will I get?
      1) The rate of compound interest is 12% per year
      2) The interest is deposited in the account at the end of every six months

15. Variable "X" is an address variable.
      1) The value of variable "X" is "adbcf"
      2) Program has a statement X =&Y

16. Is white color the best reflector of light?
      1) The lower a color's reflection index the better its power of reflection
      2) White has a reflection index of 0.28

17. Does Mehta work in an advertising agency?
      1) Mehta begins work at 9 am in the morning and works till 9 in the night
      2) Mehta is a copywriter

18. Is it true that Maggi Noodles success was largely due to its ability to satisfy a latent consumer need?
      1) Before the entry of Maggi Noodles, Others did not have access to a food item which was convenient to prepare and could be consumed between meals.
      2) Maggi Noodles was an instant hit with ladies who had children in the range of 10 to 12 years

19. Sachin wrote Program 1
      1) It is found in the directory c:\user\sachin
      2) Sachin tested Program 1

20. Are all Argots also Knicks?
      1) All Argots are Drones
      2) All Drones are Knicks

21. Does classical music aid plant growth?
      1) Music aids in the development of sugar in plants.
      2) In an experiment conducted, its was observed that plants exposed to classical music grew by 5cm more than plants not exposed to classical music in the same period.

22. Are cheques the safest method of making a payment.
      1) Cheques are more convenient than cash in making and resolving payments.
      2) Payment by cheques eliminate the risk involved in handling cash.

23. Networking is working fine.
      1) Computer A is able to talk to Computer B
      2) Both Computer A & B are Pentium Machines.

24. Is it true that smiling is easier than frowning?
      1) Smiling requires the movement of 14 facial muscles while frowning requires the movement of 24 facial muscles.
      2) Moving every facial muscles requires the same amount of effort.

25. Is it true that the Carpenter lives on the first floor.?
      1) the Barber lives two floors above the black smith who in turn stays one floor above the carpenter.
      2) the blacksmith lives two floors above the weaver who lives one floor below the carpenter in a three storeyed building.

SECTION 3 - ANALYTICAL.

Questions 26-29 are based on the following:
    At a formal dinner for 8, the host and the hostess are seated at opposite ends of a rectangular table, with 3 persons along each side. Each man must be seated next to at least to 1 woman, and vice versa. Alan is opposite to Diana, who is not the hostess. George has a woman on his right and is opposite to a woman. Helga is at the hostess's right, next to Frank. One person is seated between Belinda and Carol.

26. The 8th person present, Eric must be
    (a)   the host
    (b)   seated to Diana's right
    (c)   seated opposite to Carol
      (a) a only   (b) c only   (c) b and c   (d) a, b and c

27. If each person is placed directly opposite to his or her spouse, which of the following pairs must be married.
    (a) George and Helga   (b) Belinda and Frank
    (c) Carol and Frank   (d) George and Belinda

28. Which person is not seated next to a person of the same sex.?
      (a) Alan   (b) Belinda   (c)
Carol   *(d) Diana*

29. George is bothered by the cigarette smoke of his neighbor and exchanges seats with the person 4 places to his left. Which of the following must be true following the exchange?
    (a)   No one is seated between two persons of the opposite sex.

(b)   one side of the table consists entirely of persons of the same sex.
(c)   Either the host or hostess has changed seats
   (a) A only   (b) C only   (c) A and
B   (d) B and C

Questions 30 - 33 are based on the following:
    The hotel Miramar has two wings, the east wing and the west wing. Some east wing rooms but not all, have an ocean view. All west wing rooms have a harbor view. The charge for all rooms is identical except for the following.
    There is an extra charge for all harbor view rooms on or above third floor. There is an extra charge for all ocean view rooms except those without balcony. Some harbor view rooms on the first two floors and some east wing rooms without ocean view have kitchen facilities for which there is an extra charge. Only the ocean view and harbor view rooms have balconies.

30. A guest may avoid an extra charge by requesting
   (a) A west wing room on one of the first two floors.
   (b) A west wing room on the fourth floor without balcony.
   (c) An East wing room without balcony.   (d) Any room without
kitchen.

31. Which of the following must be true if all conditions are as stated?
   (a) All rooms above the third floor involves extra charges.
   (b) No room without an ocean or harbor view or kitchen facilities involves extra charge.
   (c) There is no extra charge for an east wing room without ocean view.
   (d) There is no extra charge for any room without Kitchen facilities.

32. which of the following must be false if all conditions are as stated?
   (a) some ocean viewing rooms do not involve an extra charge
   (b) all rooms with kitchen facilities involve an extra charge
   (c) some west viewing rooms above the second floor do not involve an extra
charge
   (d) some harbor viewing rooms do not involve an extra charge

33. Which of the following can not be determined on the basis of the information given?
   (a) whether there are any rooms without a balcony for which extra charge is imposed
   (b) whether any room without at kitchen or a view involves an extra charge
   (c) whether two extra charges are imposed for any room   (d) none
of the above

Questions 34 to 37 are based on the following:
   Four cards of different suits are dealt one apiece to A, B, C and D.
   B says: Mine is not a club.   A says: Mine is not a spade.
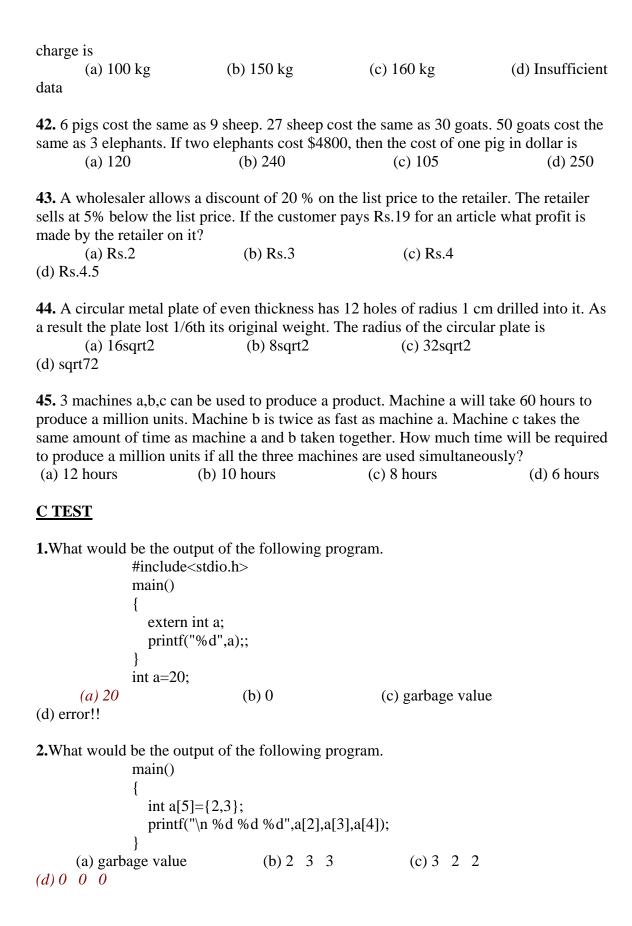   D says: Mine is not a diamond.   C says: Mine is not a spade.

A says: Mine is not a heart.

34. A held
     (a) heart   (b) clubs   (c) diamonds   (d)
spade

35. B held
     (a) heart   (b) clubs   (c) diamonds
(d) spade

36. C held
     (a) heart   (b) clubs   (c) diamonds
(d) spade

37. D held
     (a) heart   (b) clubs   (c) diamonds
(d) spade

Questions 38 to 40 are based on the following:
    In a magical temple there are 3 doorways each leading to the interior of the temple. Every door way has an idol just inside. The magical powers of the temple doubles the flowers a devotee carries every time he/she passes under a doorway. Each devotee has to pass on straight through the doorway and cannot retrace his steps till he comes to the innermost idol.

38. Ram carries X flowers at each idol he places an identical number of flowers Y. He returns from the temple without a single flower. X was most probably
     (a) 2   (b) 5   (c) 6
(d) 7

39. In the situation above Y was most probably
     (a)
8   (b) 5   (c) 6   (d) 7

40. If Sita took 8 flowers to the temple and offered 4 flowers each to the first two idols then by the time she faces the third idol she has
     (a) 40 flowers   (b) 36 flowers   (c) 52 flowers
(d) 56 flowers

SECTION 4 - COMPUTATIONAL.

41. 2 passengers have together 560 kgs of luggage and are charged for the excess above the weight allowed at 10$ and 26$. If all the luggage had belonged to one of them he would have to pay 46$. The amount of luggage each passenger is allowed without any

charge is

    (a) 100 kg   (b) 150 kg   (c) 160 kg   (d) Insufficient data

42. 6 pigs cost the same as 9 sheep. 27 sheep cost the same as 30 goats. 50 goats cost the same as 3 elephants. If two elephants cost $4800, then the cost of one pig in dollar is

    (a) 120   (b) 240   (c) 105   (d) 250

43. A wholesaler allows a discount of 20 % on the list price to the retailer. The retailer sells at 5% below the list price. If the customer pays Rs.19 for an article what profit is made by the retailer on it?

    (a) Rs.2   (b) Rs.3   (c) Rs.4

(d) Rs.4.5

44. A circular metal plate of even thickness has 12 holes of radius 1 cm drilled into it. As a result the plate lost 1/6th its original weight. The radius of the circular plate is

    (a) 16sqrt2   (b) 8sqrt2   (c) 32sqrt2

(d) sqrt72

45. 3 machines a,b,c can be used to produce a product. Machine a will take 60 hours to produce a million units. Machine b is twice as fast as machine a. Machine c takes the same amount of time as machine a and b taken together. How much time will be required to produce a million units if all the three machines are used simultaneously?

  (a) 12 hours   (b) 10 hours   (c) 8 hours   (d) 6 hours

C TEST

1.What would be the output of the following program.

```
#include<stdio.h>
main()
{
   extern int a;
   printf("%d",a);;
}
int a=20;
```

    (a) 20   (b) 0   (c) garbage value

(d) error!!

2.What would be the output of the following program.

```
main()
{
   int a[5]={2,3};
   printf("\n %d %d %d",a[2],a[3],a[4]);
}
```

    (a) garbage value   (b) 2 3 3   (c) 3 2 2

(d) 0 0 0

3. What would be the output of the following program.

```
main()
{
   inti=-3,j=2,k=0,m;
   m=++i&&++j||++k;
   printf("\n %d %d %d %d",i,j,k,m);
}
```

(a) -2 3 0 1   (b) -3 2 0 1   (c) -2 3 1 1

(d) error

4. What would be the output of the following program.

```
main()
{
    int a,b;
   a=sumdig(123);
   b=sumdig(123);
   printf("%d %d",a,b);
}
sumdig(int n)
{
   static int s=0;
   int d;
   if(n!=0)
   {
      d=n%10;
      n=(n-d)/10;
      s=s+d;
      sumdig(n);
   }
   else   return(s);
}
```

(a) 12   6   (b) 6   12   (c) 3   15

(d) error

5. What would be the output of the following program.

```
#define CUBE(x) (x*x*x)
main()
{
   int a,b=3;
   a=CUBE(b++);
   printf("\n %d %d",a,b);
}
```

(a) 64   4   (b) 27   4   (c) 27   6   (d) 64

6

6.What would be the output of the following program.

```
main()
{
    const int x=get();
    printf("%d",x);
}
get()
{
    return(20);
}
```

   (a) 20   (b) garbage value   (c) error
(d) 0

7.A function has this prototype   void f1(int **x),
        How will you call this function?
  (a) int **a;   (b) int a;   (c) int *a;   (d) int a=5;
    f1(a);   f1(&a);   f1(&a);   f1(&&a);

8.pointout the error, if any, in the for loop

```
main()
{
    int l=1;
    for(;;)
    {
        printf("%d",l++);
        if(l>10)
            break;
    }
}
```

  (a) The condition in the for loop is a must   (b) The two semicolons
should be dropped
  (c) The for loop should be replaced by awhile loop   *(d) No error*

9.Can the following piece of code be executed?

```
int main(void)
{
    char strA[10]="compile",strB[10];
    my_strcpy(strB,strA);
    puts(strB);
}
char * my_strcpy(char *destination,char *source)
{
    char *p=destination;
    while(*source!='\0')
    {
        *p++=*source++;
```

```
        }
        *p='\0';
        return destination;
    }
```
(a) Compilation will only give a warning but will proceed to execute & will display "compile"

(b) The compilation error char *(char *,char *) differs in levels of indirection from 'int()' will occur

(c) Yes & it will print compile on the screen   (d) None of the above

10. What would be the output of the following program.
```
        #include<stdio.h>
        main()
        {
            char str[5]="fast";
            static char *ptr_to_array = str;
            printf("%s",ptr_to_array);
        }
```
(a) Compilation will only give a warning but will proceed to execute & will display "fast"

(b) display "fast" on screen   (c) will give a compilation error
(d) none of the above

11. What would be the output of the following program.
```
        main()
        {
            int num,*p;
            num=5;
            p=&num;
            printf("%d",*p);
        }
```
(a) 6   *(b) 5*   (c) junk value
(d) compilation error

12. What would be the output of the following program.
```
        main()
        {
            int a[3]={2,3,4};
            char *p;
            p=a;
            p=(char *)((int *)p+1);
            printf("%d",p);
        }
```
(a) 2   (b) 0   (c) junk value   *(d) 3*

13. What would be the output of the following program.

```
main()
{
  int i=10;
  fn(i);
  printf("%d",i);
}
fn(int i)
{
  return ++i;
}
```
    (a) 10   *(b) 11*   (c) 12
(d) Compilation error

14. What will be the value of i & j after the loop
isexecuted?
            for(i=0,j=0;i<5,j<25;i++,j++)
    (a) i=4,j= 24   (b) i=24,j= 24   (c) i=25,j=
25   (d) i=5,j=25

15. What would be the output of the following program.
```
main()
{
  int i,j;
  i=10;
  j=sizeof(++i);
  printf("%d",i);
}
```
    (a) 11   (b) 10   (c) 4   (d) compilation
error

16. What would be the output of the following program.
```
main()
{
  int i=7;
  printf("%d\n",i++*i++);
}
```
    (a) 49   *(b) 56*   (c) 72
(d) compilation error

17. What will the printf print?
```
main()
{
  char *p,*f();
  p=f();
  printf("f() returns:%s\n",p);
}
char *f()
```

```
{
   char result[80];
   strcpy(result,"anything will do");
   return (result);
}
```
(a) f() returns: anything will do   (b) f() returns:
(c) compilation error   (d) The printf statement is not going
to be executed

18. How many times the following program would print 'Jamboree'?
```
main()
{
   printf("\n Jamboree");
   main();
}
```
(a) infinite number of times   (b) 32767 times
(c) 65535 times   *(d) till the stack does not overflow*

19. Notice the error in the default statement in the code snippet below.Will it give a compilation error?
```
main()
{
   int a=10,j;
   j=fn(a);
   switch(j)
   {
      case 30: printf("the value is 30");
               break;
      case 50: printf("the value is 50");
               break;
      default:printf("the value is not 30 or 50");
   }
}
fn(int a)
{
   return (++a);
}
```
(a) Will display "the value is 30"   *(b) Will display "The value is not 30 or 50"*
(c) Yes a compilation error would happen
(d) No compilation errors but there will be no output on the screen

20. What would be the output of the following program.
```
main()
{
   struct emp
```

```
                {
                   char name[20];
                   int age;
                   float sal;
                };
                struct emp e = {"tiger"};
                printf("\n %d %f",e.age,e.sal);
                }
```
(a) 0   0.000000   (b) Garbage values   (c) Error   (d) none of the above

---

AXES TECHNOLOGY

:

        The written test is purely technical with stress on Networking, C, Operating
Systems, Data Structures etc. You should be clear with the fundamentals of these and
other core subjects. Questions are mainly multiple-choice though this may vary.

1. One of the following is my secret word: AIM DUE MOD OAT TIE. With the list in
front of you, if I were to tell you any one of my secret word, then you would be able to
tell me the number of vowels in my secret word. Which is my secret word?
        Ans. TIE

2. In the following figure: A B C
                              D
                            E F G
                                H
                                I
   Each of the digits 1, 2, 3, 4, 5, 6, 7, 8, and 9 is:
        a) Represented by a different letter in the figure above.
        b) Positioned in the figure above so that each of A + B + C, C + D +E, E + F + G,
and G + H + I is equal to 13.
   Which digit does E represent?
        Ans. E is 4

3. One of Mr. Horton, his wife, their son, and Mr. Horton's mother is a doctor and another
is a lawyer.
        a) If the doctor is younger than the lawyer, then the doctor and the lawyer are not
blood relatives.
        b) If the doctor is a woman, then the doctor and the lawyer are blood relatives.
        c) If the lawyer is a man, then the doctor is a man.
   Whose occupation you know?
        Ans. Mr. Horton: he is the doctor.

4. Here is a picture of two cubes:

a) The two cubes are exactly alike.

b) The hidden faces indicated by the dots have the same alphabet on them.

Which alphabet-q, r, w, or k is on the faces indicated by the dots?

Ans. q

5. In the following figure:

```
        A        D
        B    G   E
        C        F
```

Each of the seven digits from 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 is:

a) Represented by a different letter in the figure above.

b) Positioned in the figure above so that A*B*C, B*G*E, and D*E*F are equal.

Which digit does G represent?

Ans. G represents the digit 2.

6. Mr. and Mrs. Aye and Mr. and Mrs. Bee competed in a chess tournament. Of the three games played:

a) In only the first game were the two players married to each other.

b) The men won two games and the women won one game.

c) The Ayes won more games than the Bees.

d) Anyone who lost game did not play the subsequent game.

Who did not lose a game?

Ans. Mrs. Bee did not lose a game.

7. Three piles of chips--pile I consists one chip, pile II consists of chips, and pile III consists of three chips--are to be used in game played by Anita and Brinda. The game requires:

a) That each player in turn take only one chip or all chips from just one pile.

b) That the player who has to take the last chip loses.

c) That Anita now have her turn.

From which pile should Anita draw in order to win?

Ans. Pile II

8. Of Abdul, Binoy, and Chandini:

a) Each member belongs to the Tee family whose members always tell the truth or to the El family whose members always lie.

b) Abdul says "Either I belong or Binoy belongs to a different family from the other two."

Whose family name do you know?

Ans. Binoy's family--El.

Section B

C programs are asked in this section

1. Write a program to insert a node in a sorted linked list.

2. Write a program to implement the Fibinocci series.

3. Write a program to concatenate two circular linked lists into a single circular list.

4. A function even_odd_difference()passes the array of elements. Write a program to calculate the difference of the two sums of which one sum adds the elements of odd ones and another adds the elements of even ones.

5. Write a program to reverse a linked list.

Section C

Questions on C++ are asked here

1. Base class has some virtual method and derived class has a method with the same name. If we initialize the base class pointer with derived object; calling of that virtual method will result in which method being called?
   a. Base method   *b. Derived method.*
   c. Error   d. None of these

Almost all questions are of this kind. Go through virtual functions concepts in C++ and how the pointers to functions would be handled.

AZTEC TECHNOLOGY
The written test consists of **4 sections out of which one has to do 3 sections.**These sections are broadly divided into:Aptitude,C,C++ and Java.
INTERVIEW
    The information on the interview is from the horse's mouth, but it consists mainly of technical grilling. A lot of stress is laid on Data Structures, C and C++.

Some the questions that could be asked in the technical interview are:
What is friend function?
What are virtual functions?
What does static variable mean?
What is public,protected,private?

What is a scope resolution operator?
Write a program to concatenate two strings.
Write a program to compare two strings without using the stringcomp function

---

BAAB INFOTECH

The Paper is of two parts : **Aptitude and Technical** .
The **Aptitude paper** is based on the GRE pattern and consists of analogies, reading comprehension, passages etc. There is more than one paper pattern and the other patterns may have questions on series and logical reasoning.

The **Technical paper** is same for all patterns .The important subjects are C, computer architecture , operating systems, microprocessors , etc.

Paper Pattern 1 from R.S.Agarwal

Please check out the following questions from the book

Section 1 -- Analogy 1c(1-20)[pg 15-17]
Section 2 -- Directions sense test 7b[1-10]
Section 3 -- Logic deduction 17b[30-50]
Section 4 -- Mathematical modeling 15a[1-20]

Paper Pattern 2
Q1.
For a motorist there are three ways going from City A to City C. By way of bridge the distance is 20 miles and toll is $0.75. A tunnel between the two cities is a distance of 10 miles and toll is $1.00 for the vehicle and driver and $0.10 for each passenger. A two-lane highway without toll goes east for 30 miles to city B and then 20 miles in a northwest direction to City C.

1. Which is the shortest route from B to C

(a) Directly on toll free highway to City C
(b) The bridge
(c) The Tunnel
(d) The bridge or the tunnel
(e) The bridge only if traffic is heavy on the toll free highway

Ans. (a)

2. The most economical way of going from City A to City B, in terms of toll and distance

is to use the

(a) tunnel
(b) bridge
(c) bridge or tunnel
(d) toll free highway
(e) bridge and highway

Ans. (a)

3. Jim usually drives alone from City C to City A every working day. His firm deducts a percentage of employee pay for lateness. Which factor would most influence his choice of the bridge or the tunnel ?

(a) Whether his wife goes with him
(b) scenic beauty on the route
(c) Traffic conditions on the road, bridge and tunnel
(d) saving $0.25 in tolls
(e) price of gasoline consumed in covering additional 10 miles on the bridge

Ans. (a)

4. In choosing between the use of the bridge and the tunnel the chief factor(s) would be:
I. Traffic and road conditions
II. Number of passengers in the car
III. Location of one's homes in the center or outskirts of one of the cities
IV. Desire to save $0.25

(a) I only
(b) II only
(c) II and III only
(d) III and IV only
(e) I and II only

Ans. (a)

Q2.
The letters A, B, C, D, E, F and G, not necessarily in that order, stand for seven consecutive integers from 1 to 10
D is 3 less than A
B is the middle term
F is as much less than B as C is greater than D
G is greater than F

1. The fifth integer is
(a) A
(b) C
(c) D
(d) E
(e) F

Ans. (a)

2. A is as much greater than F as which integer is less than G
(a) A
(b) B
(c) C
(d) D
(e) E

Ans. (a)

3. If A = 7, the sum of E and G is
(a) 8
(b) 10
(c) 12
(d) 14
(e) 16

Ans. (a)

4. A - F = ?
(a) 1
(b) 2
(c) 3
(d) 4
(e) Cannot be determined

Ans. (a)

5. An integer T is as much greater than C as C is greater than E. T can be written as A + E. What is D?
(a) 2
(b) 3
(c) 4
(d) 5

(e) Cannot be determined

Ans. (a)

6. The greatest possible value of C is how much greater than the smallest possible value of D?
(a) 2
(b) 3
(c) 4
(d) 5
(e) 6

Ans. (a)

Q3.
1. All G's are H's
2. All G's are J's or K's
3. All J's and K's are G's
4. All L's are K's
5. All N's are M's
6. No M's are G's

1. If no P's are K's, which of the following must be true?

(a) All P's are J's
(b) No P is a G
(c) No P is an H
(d) If any P is an H it is a G
(e) If any P is a G it is a J

Ans. (a)

2. Which of the following can be logically deduced from the conditions stated?

(a) No M's are H's
(b) No M's that are not N's are H's
(c) No H's are M's
(d) Some M's are H's
(e) All M's are H's

Ans. (a)

3. Which of the following is inconsistent with one or more of the conditions?

(a) All H's are G's
(b) All H's that are not G's are M's
(c) Some H's are both M's and G's
(d) No M's are H's
(e) All M's are H's

Ans. (a)

4. The statement "No L's are J's" is
I. Logically deducible from the conditions stated
II. Consistent with but not deducible from the conditions stated
III. Deducible from the stated conditions together with the additional statement "No J's are K's"

(a) I only
(b) II only
(c) III only
(d) II and III only
(e) Neither I, II nor III

Ans. (a)

Q5.
In country X, democratic, conservative and justice parties have fought three civil wars in twenty years. TO restore stability an agreement is reached to rotate the top offices President, Prime Minister and Army Chief among the parties so that each party controls one and only one office at all times. The three top office holders must each have two deputies, one from each of the other parties. Each deputy must choose a staff composed of equally members of his or her chiefs party and member of the third party.

1. When Justice party holds one of the top offices, which of the following cannot be true

(a) Some of the staff members within that office are justice party members
(b) Some of the staff members within that office are democratic party members
(c) Two of the deputies within the other offices are justice party members
(d) Two of the deputies within the other offices are conservative party members
(e) Some of the staff members within the other offices are justice party members.

Ans. (a)

2. When the democratic party holds presidency, the staff of the prime minister's deputies are composed
I. One-fourth of democratic party members
II. One-half of justice party members and one-fourth of conservative party members
III. One-half of conservative party members and one-fourth of justice party members.

(a) I only
(b) I and II only
(c) II or III but not both
(d) I and II or I and III
(e) None of these

Ans. (a)

3. Which of the following is allowable under the rules as stated:

(a) More than half of the staff within a given office belonging to a single party
(b) Half of the staff within a given office belonging to a single party
(c) Any person having a member of the same party as his or her immediate superior
(d) Half the total number of staff members in all three offices belonging to a single party
(e) Half the staff members in a given office belonging to parties different from the party of the top office holder in that office.

Ans. (a)

4. The office of the Army Chief passes from Conservative to Justice party. Which of the following must be fired.

(a) The democratic deputy and all staff members belonging to Justice party
(b) Justice party deputy and all his or hers staff members
(c) Justice party deputy and half of his Conservative staff members in the chief of staff office
(d) The Conservative deputy and all of his or her staff members belonging to Conservative party
(e) No deputies and all staff members belonging to conservative parties.

Ans. (a)

Q6.
In recommendations to the board of trustees a tuition increase of $500 per year, the

president of the university said "There were no student demonstrations over the previous increases of $300 last year and $200 the year before". If the president's statement is accurate then which of the following can be validly inferred from the information given:
I. Most students in previous years felt that the increases were justified because of increased operating costs.
II. Student apathy was responsible for the failure of students to protest the previous tuition increases.
III. Students are not likely to demonstrate over new tuition increases.

(a) I only
(b) II only
(c) I or II but not both
(d) I, II and III
(e) None

Ans. (a)

Part II -- Problems on ages (Simple Linear Equations etc.)

Part III -- Blood Relations (Check R S Aggarwal)

Part IV -- Series problems

6,9,14,21,(30)
2,10,(30),68,130,(222)
9,15,23,33,(45)
5,11,19,29,(41),55
2,12,30,56,90,(132)
1,3,7,(15)31
3,9,21,(45),93
35,24,15,8,(3)
2,12,30,56,90,(132)
3,11,19,29,(39),51

Part V -- Analogy

1. fans : bleachers::

(a) cheerleaders : pompoms
(b) audience:seats
(c) team:goalposts
(d) conductor:podium
(e) referee:decision

Ans. (a)

2. archipelago:islands::

(a) arbor:bower
(b) garden:flower
(c) mountain:valley
(d) sand:dune
(e) constellation:star

Ans. (a)

3. crow:boastful ::

(a) smirk:witty
(b) conceal:s;y
(c) pout:sulky
(d) blush:coarse
(e) bluster:unhappy

Ans. (a)

4. bracket:shelf ::

(a) hammer:anvil
(b) girder:rivet
(c) strut:rafter
(d) valve:pipe
(e) bucket:well

Ans. (a)

5. taxonomy:classification ::

(a) etymology:derivation
(b) autonomy:authorization
(c) economy:rationalization
(d) tautology:justification
(e) ecology:urbanisation

Ans. (a)

6. moderator:debate ::

(a) legislator:election
(b) chef:banquet
(c) auditor:lecture
(d) conspirator:plot
(e) umpire:game

Ans. (a)

7. glossary:words ::

(a) catalogue:dates
(b) atlas:maps
(c) almanac:synonyms
(d) thesaurus:rhymes
(e) lexicon:numbers

Ans. (a)

8. lumber: bear ::

(a) roost:hen
(b) bray:donkey
(c) waddle:goose
(d) swoop:hawk
(e) chirp:sparrow

Ans. (a)

9. celerity:snail ::

(a) indolence:sloth
(b) cunning:weasel
(c) curiosity:cat
(d) humility:peacock
(e) obstinacy:mule

Ans. (a)

10. wood:sand ::

(a) coal:burn
(b) brick:lay
(c) oil:polish
(d) metal:burnish
(e) stone:quarry

Ans. (a)

11. carpenter:saw ::

(a) stenographer:typist
(b) painter:brush
(c) lawyer:brief
(d) runner:sneakers
(e) seamstress:scissors

Ans. (a)

12. horns:bull ::

(a) mane:lion
(b) wattles:turkey
(c) antlers:stag
(d) hooves:horse
(e) wings:eagle

Ans. (a)

13. gullible:duped ::

(a) credible:cheated
(b) careful:cautioned
(c) malleable:moulded
(d) myopic:mislead
(e) articulate:silenced

Ans. (a)

14. marathon:stamina ::

(a) relay:independence

(b) hurdle:perseverance
(c) sprint:celerity
(d) job:weariness
(e) ramble:directness

Ans. (a)

15. Skin:man ::

(a) hide:animal
(b) jump:start
(c) peel:potato
(d) eat:food
(e) wool:cloth

Ans. (a)

16. Bamboo:Shoot ::

(a) Bean:Sprout
(b) Peas:Pod
(c) Potato:Eye
(d) Carrot:Root
(e) Leaf:Stem

Ans. (a)

18. Deflect:Missile ::

(a) Siege:Castle
(b) Distract:Attraction
(c) Protect:Honour
(d) Drop:Catch
(e) Score:Goal

Ans. (a)

19. Editor:magazine ::

(a) captain:ship
(b) actor:movie
(c) director:film

(d) player:team
(e) jockey:horse

21. Volcano : Lava ::

(a) Fault:earthquate
(b) crack:wall
(c) tunnel:dig
(d) water:swim
(e) floor:polish

Other Sample Analogies:

22. Agitator : Firebrand :: Renegade : Turncoat

23. Burst : Sound :: Tinder : Fire

24. Star : cluster :: Tree : clump

25. Piston : Cylinder :: elevator : shaft

26. Mitigate : punishment :: commute : sentence

27. Erudite : scholar :: illiterate : ignorant

28. Fire : Ashes :: explosion : debris

29. mason : wall :: Author : Book

30. Fire : Ashes :: Event : memories

SECTION II CODING
1. If LOAD = MPBE and DRIVE = ESJWF
Then LADDLER = ?

2. START = WALKA and BUDPI = XZFMR
Then STUPID = ?

Ans. WAZMRF

Q3 - Q7

If A=Z, B=Y, C=X, ... Z=A
Then

3. LIMIT = ?

Ans. ORNRG

4. SOUR = ?

Ans. HLFI

5. POCKET = ?

Ans. KLXPUG

6. GROUP = ?

Ans. TILFK

7. ZERD = ?

Ans. AVIL

Q8 - Q9
Here each letter is coded as
A = D, B=E, C=F

8. SHOOT = ?

Ans. VKRRW

9. VWDUW = ?

Ans. YZGXZ

10. If DBMDVUUB = CALCUTTA
Then BOMBAY = ?

Ans. ANLAZX

TECHNICAL :

1. Binary equivalent of 52

Ans. 110100

2. Hexadecimal equivalent of 3452

Ans. 72A

3. Explain Just In Time Concept ?

Ans. Elimination of waste by purchasing manufacturing exactly when needed

4. A good way of unit testing s/w program is

Ans. User test

5. A lowest level of security by most RDBMS is

6. OOT uses

Ans. Encapsulated of detect methods

7.EDI useful in

8. MRPII different from MRP

9. Hard disk time for R/W head to move to correct sector

10. The percentage of times a page number bound in associate register is called

11. Expand MODEM

12. RDBMS file system can be defined as

13. Super Key is

14. Windows 95 supports

(a) Multiuser
(b) n tasks
(c) Both
(d) None

15.The difference between printf and fprintf is ?

16. To change permission r&w to owner group to no permission to others

(a) chmod 614
(b) chmod 604
(c) chmod 640
(d) chmod 310

Other important topics
Pipeline Architecture
LAPB protocol

CYSCO SYSTEM
:
The written test consists of **three sections** based on the **MCQ pattern**. Each section has **30** questions. There is a **choice** between **Section 2** and **Section 3** and only one has to be done.
Section 1 is based on basic digital electronics.
Section 2 is software oriented
Section 3 is advanced digital electronics with questions on setup,hold time,clock violation etc.

SECTION 1 -- BASIC DIGITAL SECTION

1. In order to find out stack fault of a three input nand gate how many necessary input vectors are needed ?

2. What is parity generation ?

3. A nand gate becomes ___ gate when used with negative logic ?

4. What is the advantage of cmos over nmos ?

5. What is the advantage of synchronous circuits over asynchronous circuits ?

6. What is the function of ALE in 8085 ?

7. A voice signal sample is stored as one byte. Frequency range is 16 Hz to 20 Hz. What is the memory size required to store 4 minutes voice signal?

8. What will the controller do before interrupting CPU?

9. In a normalized floating point representation, mantissa is represented using 24 bits and

exponent with 8 bits using signed representation. What is range ?

10. The stack uses which policy out of the following-- LIFO, FIFO, Round Robin or none of these ?

11. Where will be the actual address of the subroutine is placed for vectored interrupts?

12. Give the equivalent Gray code representation of AC2H.

13. What is the memory space required if two unsigned 8 bit numbers are multiplied ?

14. The vector address of RST 7.5 in 8085 processor is _____.
        Ans. 003C (multiply 7.5 by 8 and convert to hex)

15. Subtract the following hexadecimal numbers--- 84_{16} - $2A_{16}$

16. Add the following BCD numbers--- 1001 and 0100

17. How much time does a serial link of 64 Kbps take to transmit a picture with 540 pixels.

18. Give the output when the input of a D-flip flop is tied to the output through the XOR gate.

19. Simplify the expression AB + A(B + C) + B (B + C)

20. Determine the logic gate to implement the following terms--ABC, A+B+C

21. Implement the NOR gate as an inverter.

22. What is the effect of temperature on the I_{cb} in a transistor

23. What is the bit storage capacity of a ROM with a 512*4 organization?

24. What is the reason of the refresh operation in dynamic RAM's ?

25. Suppose that the D input of a flip flop changes from low to high in the middle of a clock pulse. Describe what happens if the flip flop is a positive edge triggered type?

26. How many flip flops are required to produce a divide by 32 device ?

27. An active HIGH input S-R latch has a 1 on the S input and a 0 on the R input. What state is the latch in?

28. Implement the logic equation Y = C^BA^ + CB^A + CBA with a multiplexer.
   (*where C^ stands for C complement*)

29. Equivalent Gray code representation of AC2H.

30. What does a PLL consist of ?

We advice you to know the design of PLL as questions pertaining to this may be asked

II - Software Section

1. The starting location of an array is 1000. If the array[1..5/...4] is stored in row major order, what is the location of element [4,3]. Each word occupies 4 bytes.

2. In a tertiary tree, which has three childs for every node, if the number of internal nodes are N, then the total number of leaf nodes are

3. Explain the term "locality of reference" ?

4. What is the language used for Artificial Intelligence
   Ans: lisp

5. What is the character set used in JAVA 2.0 ?
   Ans: Unicode

6.   char a =0xAA ;
                  int b ;
                  b = (int) a ;
                  b = b >> 4 ;
                  printf("%x",b);
   What is the output of the above program segment ?

7. struct s1 { struct { struct { int x; } s2 } s3 }y; How does one access x in the above given structure definition ?

8. Why there is no recursion in Fortran ?
   Ans. There is no dynamic allocation.

9. What is the worst case complexity of Quick sort?
   Ans. $O(n^2)$

10. What will be sequence of operating system activities when an interrupt occurs ?

11. In a sequential search, what is the average number of comparisons it takes to search through n elements ?
   Ans: (n+1)/2.

12. What is the size of the array declared as double * X[5] ?

*Ans. 5 * sizeof (double *)*

13. A binary search tree with node information as 1,2,3,4,5,6,7,8 is given. Write the result obtained on preorder traversal of the binary search tree ?

Ans : 53124768

14. If size of the physical memory is 2^{32}-1, then what is the size of the virtual memory ?

15. S -> A0B   A-> BB|0   B-> AA|1
   How many strings of length 5 are possible with the above productions?

16. (3*4096+15*256+3*16+3). How many 1's are there in the binary representation of the result ?

Ans. 10

17. In memory mapped I/O how is I/O is accessed ?

18. What is the use of ALE in 8085 ?

Ans. To latch the lower byte of the address.

19. If the logical memory of 8 X 1024 is mapped into 32 frames, then the number of bits for the logical address are_____ ?

Ans. 13

20. Context free grammar is useful for which purpose ?

21. In ternary number representation, numbers are represented as 0,1,-1.(Here -1 is represented as 1 bar.) How is 352/9 represented in ternary number representation?

22. There are processes which take 4,1,8,1 machine cycles respectively. If these are executed in round robin fashion with a time quantum of 1, what is the time it take for process 4 to complete ?

Ans. 9

23. The minimum frequency of operation is specified for every processor because......
   a) for interfacing slow peripherals
   b) dynamic memory refreshing.
   c) to make compatible with other processor.

24. For linked list implementation , which search is not applicable ?

Ans: Binary search.

25. Each character is represented by 7 bits, 1 bit is used to represent error bit and another bit for parity. If total number of bits transmitted is 1200 bits, then what is the number of symbols that can be transmitted ?

26. Explain set associatively of cache ?

27. Write the postfix form of the following expression : A+[[(B+C)+(D+E)*F]/G]

28. What is the function of the linker?

29.

```
void f(int y)
{
   struct s *ptr;
   ptr = malloc (sizeof (struct)+99*sizeof(int));
}
struct s
{
   int i;
   float p;
};
```

when free (ptr) is executed, what will happen?

30. To concatenate two linked lists strings, the order is O(1) is obtained for what kind of list

---

CMC LIMITED

 The test has around 80 Questions which are of MCQ type.There maybe negative marking.
The written test consists of the following sections:

Analytical Reasoning Section -- 30 Questions
Data Sufficiency Section -- 30 Questions
Arithematic Section -- 20 Questions

ANALYTICAL REASONING SECTION

Directions for questions 1-5: **The questions are based on the information given below**

There are six steps that lead from the first to the second floor. No two people can be on the same step
Mr. A is two steps below Mr. C
Mr. B is a step next to Mr. D
Only one step is vacant (No one standing on that step)
Denote the first step by step 1 and second step by step 2 etc.

1. If Mr. A is on the first step, Which of the following is true?
(a) Mr. B is on the second step
(b) Mr. C is on the fourth step.
(c) A person Mr. E, could be on the third step
(d) Mr. D is on higher step than Mr. C.

Ans: (d)

2. If Mr. E was on the third step & Mr. B was on a higher step than Mr. E which step must be vacant
(a) step 1
(b) step 2
(c) step 4
(d) step 5
(e) step 6

Ans: (a)

3. If Mr. B was on step 1, which step could A be on?
(a) 2&e only
(b) 3&5 only
(c) 3&4 only
(d) 4&5 only
(e) 2&4 only

Ans: (c)

4. If there were two steps between the step that A was standing and the step that B was standing on, and A was on a higher step than D , A must be on step

(a) 2
(b) 3
(c) 4
(d) 5
(e) 6

Ans: (c)

5. Which of the following is false

i. B&D can be both on odd-numbered steps in one configuration
ii. In a particular configuration A and C must either both an odd numbered steps or both an even-numbered steps
iii. A person E can be on a step next to the vacant step.

(a) i only
(b) ii only
(c) iii only
(d) both i and iii

Ans: (c)

Directions for questions 6-9: **The questions are based on the information given below**

Six swimmers A, B, C, D, E, F compete in a race. The outcome is as follows.
i. B does not win.
ii. Only two swimmers separate E & D
iii. A is behind D & E
iv. B is ahead of E , with one swimmer intervening
v. F is a head of D

6. Who stood fifth in the race ?
(a) A
(b) B
(c) C
(d) D
(e) E

Ans: (e)

7. How many swimmers seperate A and F ?
(a) 1
(b) 2
(c) 3
(d) 4
(e) cannot be determined

Ans: (d)

8. The swimmer between C & E is
(a) none
(b) F
(c) D
(d) B
(e) A

Ans: (a)

9. If the end of the race, swimmer D is disqualified by the Judges then swimmer B finishes in which place
(a) 1
(b) 2
(c) 3
(d) 4
(e) 5

Ans: (b)

Directions for questions 10-14: **The questions are based on the information given below**

Five houses lettered A,B,C,D, & E are built in a row next to each other. The houses are lined up in the order A,B,C,D, & E. Each of the five houses has a colored chimney. The roof and chimney of each housemust be painted as follows.
i. The roof must be painted either green,red ,or yellow.
ii. The chimney must be painted either white, black, or red.
iii. No house may have the same color chimney as the color of roof.
iv. No house may use any of the same colors that the every next house uses.
v. House E has a green roof.
vi. House B has a red roof and a black chimney

10. Which of the following is true ?
(a) At least two houses have black chimney.
(b) At least two houses have red roofs.
(c) At least two houses have white chimneys
(d) At least two houses have green roofs
(e) At least two houses have yellow roofs

Ans: (c)

11. Which must be false ?
(a) House A has a yellow roof
(b) House A & C have different color chimney
(c) House D has a black chimney
(d) House E has a white chimney
(e) House B&D have the same color roof.

Ans: (b)

12. If house C has a yellow roof. Which must be true.
(a) House E has a white chimney
(b) House E has a black chimney
(c) House E has a red chimney

(d) House D has a red chimney
(e) House C has a black chimney

Ans: (a)

13. Which possible combinations of roof & chimney can house
I. A red roof 7 a black chimney
II. A yellow roof & a red chimney
III. A yellow roof & a black chimney

(a) I only
(b) II only
(c) III only
(d) I & II only
(e) I&II&III

Ans: (e)

14. What is the maximum total number of green roofs for houses
(a) 1
(b) 2
(c) 3
(d) 4
(e) 5

NOTE: The questions from 15-27 are multiple choice in the paper

15. There are 5 red shoes, 4 green shoes. If one draw randomly a shoe what is the probability of getting a red shoe

Ans $5c_1$/ $9c_1$

16. What is the selling price of a car? If the cost of the car is Rs.60 and a profit of 10% over selling price is earned

Ans: Rs 66/-

17. 1/3 of girls , 1/2 of boys go to canteen .What factor and total number of classmates go to canteen.

Ans: Cannot be determined.

18. The price of a product is reduced by 30% . By what percentage should it be

increased to make it 100%

19. There is a square of side 6cm . A circle is inscribed inside the square. Find the ratio of the area of circle to square.

Ans. 11/14

20. There are two candles of equal lengths and of different thickness. The thicker one lasts of six hours. The thinner 2 hours less than the thicker one. Ramesh lights the two candles at the same time. When he went to bed he saw the thicker one is twice the length of the thinner one. How long ago did Ramesh light the two candles .

Ans: 3 hours.

21. If M/N = 6/5,then 3M+2N = ?

22. If p/q = 5/4 , then 2p+q= ?

23. If PQRST is a parallelogram what it the ratio of triangle PQS & parallelogram PQRST .

Ans: 1:2

24. The cost of an item is Rs 12.60. If the profit is 10% over selling price what is the selling price ?

Ans: Rs 13.86/-

25. There are 6 red shoes & 4 green shoes . If two of red shoes are drawn what is the probability of getting red shoes

Ans: $6c_2/10c_2$

26. To 15 lts of water containing 20% alcohol, we add 5 lts of pure water. What is % alcohol.

Ans : 15%

27. A worker is paid Rs.20/- for a full days work. He works 1,1/3,2/3,1/8.3/4 days in a week. What is the total amount paid for that worker ?

Ans : 57.50

28. If the value of x lies between 0 & 1 which of the following is the largest?

(a) x

(b) x^2

(c) -x

(d) 1/x

Ans : (d)

DATA SUFFICIENCY SECTION

Directions : **For questions in this section mark**

(a) **If condition (i) alone is sufficient**
(b) **If condition (ii) alone is sufficient**
(c) **If both conditions together are sufficient**
(d) **If condition (i) alone & (ii) alone are sufficient**
(e) **information not sufficient**

1. A man 6 feet tall is standing near a light on the top of a pole What is the length of the shadow cast by the man.
(i) The pole is 18 feet high
(ii) The man is 12 feet from the pole

Ans: (c)

2. Two pipes A and B emptied into a reservoir , pipe A can fill the reservoir in 30 minutes by itself. How long it will take for pipe A and pipe B together to fill up the reservoir.
(i) By itself, pipe B can fill up the reservoir in 20 minutes
(ii) Pipe B has a larger cross-sectional area than pipe A

Ans: (a)

3. K is an integer. Is K is divisible by 12
(i) K is divisible by 4
(ii) K is divisible by 3

Ans: (c)

4. What is the distance from A to B
(i) A is 15 miles from C
(2) C is 25 miles from B

5. Was Melissa Brown's novel published?
(i). If Melissa Brown's novel was published she would receive atleast $1000 in royalities during 1978
(ii). Melissa Brown's income for 1978 was over $1000

Ans: (e)

6. Does every bird fly?
(i) Tigers do not fly.
(ii) Ostriches do not fly

Ans: (b)

7. How much does John weigh? Jim weighs 200 pounds.
(i) Toms weight plus Moes weight equal to John's weight.
(ii) John's weight plus Moe's weight equal to Twice Tom's weight.

Ans: (c)

8. Is the figure ABCD is a rectangle if
(i) angle ABC=90(degrees)
(ii) AB=CD

9. Find x+2y
(i). x+y=10
(ii). 2x+4y=20

Ans: (b)

10. Is angle BAC is a right angle
(i) AB=2BC
(2) BC=1.5AC

Ans: (e)

11. Is x greater than y
(i) x=2k
(ii) k=2y

Ans: (e)

12. A piece of string 6 feet long is cut into three smaller pieces. How long is the longest of the three pieces?
(i). Two pieces are the same length.
(ii) One piece is 3 feet 2 inches lone

Ans: (b)

13. How many rolls of wall paper are necessary to cover the walls of a room whose floor and ceiling are rectangles 12 feet wide and 15 feet long
(i) A roll of paper covers 20 sq feet
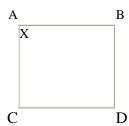(ii) There are no windows in the walls

Ans: (e)

14. x and y are integers that are both less than 10. Is x>y?
(i). x is a multiple of 3
(ii). y is a multiple of 2

Ans: (e)

15. Fifty students have signed up for atleast one of the courses GERMAN & ENGLISH, how many of the 50 students are taking GERMANI but not ENGLISH?
(i). 16 students are taking GERMANI & ENGLISH
(ii). The number of students taking ENGLISH but not GERMANI is the same as the number of students taking GERMAN

Ans: (c)

16. Is ABCD is a square ?

A   B
X

C   D

(i) AD = AB
(ii). x=90(degres)

Ans: (e)

17. How much card board will it take to make a rectangular box with a lid whose base has length 7 inches.

(i). The width of the box 5 inches
(ii). The height of the box will be 4 inches

Ans: (c)

.

18. Did ABC company made profit in 1980?
(i) ABC company made a profit in 1979.
(ii) ABC company made a profit in 1981.

Ans: (e)

19. How much is Janes salary?
(i). Janes salary is 70% of John's salary
(ii). Johns salary is 50% of Mary's salary

Ans: (e)

20. Is x>1
(i) x+y=2
(ii) y<0

Ans: (c)

21. How many of the numbers, x and y are positive? Both x and y are less than 20.
(i) x is less than 5
(ii) x+y =24

Ans: (b)

22. Is the angle ACB is right angle

(1) AC=CB
(2). $(AC)^2+CB^2=AB^2$

Ans: (b)

23. How far it from town A to town B? Town C is 12 miles east of town A
(i). Town C is south of town B
(ii). It is 9 miles from town B to town C

Ans: (c)

24. A rectangular field is 40 yards long. Find the area of the field.
(i). A fence around the boundary of the field is 140 yards long
(ii). The field is more than 20 yards width

Ans: (a)

25. An industrial plant produces bottles. In 1961 the number of bottles produced by the plant was twice the number of produced in 1960. How many bottles were produced altogether in the year 1960, 61,&62
(i). In 1962 the number of bottles produced was 3 times the number of produced in 1980
(ii). In 1963 the number of bottles produced was one half the total produced in the years 1960,1961,1962.

Ans: (e)

26. Is xy > 1 ? If x & y are both positive
(i) x is less than 1
(ii) y is greater than 1

Ans: (e)

27. Is it a Rhombus
(i) All four sides are equal
(ii) Total internal angle is 360

Ans: (e)

28. How many books are in the book shelf
(i) The book shelf is 12 feet long
(ii). The average weight of each book is 1.2 pound

Ans: (e)

29. What is the area of the circle?
(i) Radius r is given
(ii) Perimeter is 3 times the area

Ans: (a)

ARITHMETIC SECTION

1. If the total distance of a journey is 120 km .If one goes by 60 kmph and comes back at 40kmph what is the average speed during the journey?

Ans: 48kmph

2. A school has 30% students from Maharashtra .Out of these 20% are Bombey students. Find the total percentage of Bombay?

Ans: 6%

3. An equilateral triangle of sides 3 inch each is given. How many equilateral triangles of side 1 inch can be formed from it?

Ans: 9

4. If A/B = 3/5,then 15A = ?

Ans : 9B

5. Each side of a rectangle is increased by 100% .By what percentage does the area increase?

Ans : 300%

6. Perimeter of the back wheel = 9 feet, front wheel = 7 feet on a certain distance, the front wheel gets 10 revolutions more than the back wheel .What is the distance?

Ans : 315 feet.

7. Perimeter of front wheel =30, back wheel = 20. If front wheel revolves 240 times. How many revolutions will the back wheel take?

Ans: 360 times

8. 20% of a 6 litre solution and 60% of 4 litre solution are mixed. What percentage of the mixture of solution

Ans: 36%

9. City A's population is 68000, decreasing at a rate of 80 people per year. City B having population 42000 is increasing at a rate of 120 people per year. In how many years both the cities will have same population?

Ans: 130 years

10. Two cars are 15 kms apart. One is turning at a speed of 50kmph and the other at 40kmph . How much time will it take for the two cars to meet?

Ans: 3/2 hours

11. A person wants to buy 3 paise and 5 paise stamps costing exactly one rupee. If he buys which of the following number of stamps he won't able to buy 3 paise stamps.

Ans: 9

12. There are 12 boys and 15 girls, How many different dancing groups can be formed with 2 boys and 3 girls.

13. Which of the following fractions is less than 1/3

(a) 22/62
(b) 15/46
(c) 2/3
(d) 1

Ans: (b)

14. There are two circles, one circle is inscribed and another circle is circumscribed over a square. What is the ratio of area of inner to outer circle?

Ans: 1 : 2

Directions for questions 15-17: **The questions are based on the information given below**

Miss Dean wants to rennovate her house. She hires a plumber, a carpenter, a painter, an electrician and an interior decorator. The work to be finished in one working (Monday - Friday).
Each worker will take the full day to do his job. Miss Dean permits only one person to work each day.
I. The painter can work only after the plumber and the carpenter have finished their jobs
II. The interior decorator must do his job before the electrician.
III. The carpenter cannot work on Monday or Tuesday

15. If the painter work on Thursday, which one of the following alternatives is possible?

(a) The electrician works on Tuesday.
(b). The electrician works on Friday.
(c) The interior decorator works after the painter does.
(d). The painter works on consecutive days.
(e). Miss Dean cannot fit all of the workers int schedule

Ans: (b)

16. If the painter works on Friday which of the following must be false?

(a) . The carpenter may works on Wednesday
(b). The carpenter and the electrician may work on consecutive days

(c). If the carpenter works on Thursday, the electrician has to work on Wednesday
(d). The plumber may work before the electrician does
(e). The electrician may work on Tuesday

Ans: (c)

17. Which argument is possible?

(a). The electrician will works on Tuesday and the interior decorator on Friday
(b). The painter will work on wednesday and plumber on thursday
(c). The carpenter will works on Tuesday and the painter on Friday
(d). THe painter will work on Monday and the carpenter on Thursday
(e). The carpenter will work on Wednesday and the plumber on Thursday

Ans: (e)

CTS SYSTEM

:

   The written tests are based on critical reasoning type questions. Word -based problems, verbal ability, pattern recognition and pattern matching, series type, arithematic-based (including functions and permutations) are usually asked.
We are giving some sample tests with questions based on the pattern mentioned above to give you a general idea.

SECTION-1:

Find the next in the sequence:

1. BC CE EG GK ?

a)KN
b)KU
c)KM
d)None

2. AA AB BC CE?

a)EG
b)EH
c)EI
d)None

3. AB EF JK QR ?

a)YZ
b)ZA
c)AB
d)None

4.ACD EGL IKT MOB?

a)QST
b)QSZ
c)QSY
d)None

5.AC CG GO OE?

a)EJ
b)EI
c)EL
d)None

6.AE BH CM DU?

a)EH
b)EZ
c) EB
d)None

7. AD DP PL LV

a)VS
b)VK
c)VI
d)None

8. SE QU EN TI?

a)CN
b)BM
c)AI or AZ
d)None

SECTION-II:

Find the values for the following problem:
f(X)= 2X-1 + f(X-1) if X is not equal to zeroandiff(X=0)=0

9. Value of f(5)

a)15
b)24
c)22
d)None

10. Value of f(f(2))

11. Value of f(16)- f(15)

12. Value of f(16)+f(15)-480

13. If f(f(X))=81 then the value of X=?

14. If f(X)=4f(X-1) then the value of X=?

15.If f(X)= f(X-1)+f(X-2) for X>1 then X= ?

16. If f(X)-f(X-1)=f(X-8) for X>5 then X=

SECTION -III:

In the following questions a 'word' is given which may not have any meaning.Find diffing possible words or palindromes for the word as per the question.
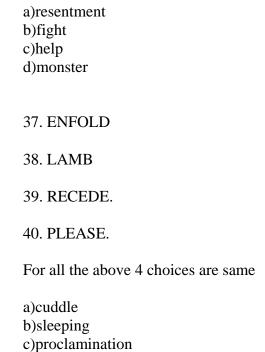
For the following find no of distinct words that can be formed.

17. TYGHHTT

a).420
b)1540
c)840
d)None

18. TYGHHTY

19. TYGHHTT

20. TYGHHTT

21. TYGHASD

22. TYGHHTY

Find the number of possible palindromes for following

23. TYGHHTY

24. TYHHHTYH.

SECTION-IV:

25 to 32 are based on the figures. You have to analyse them and find the odd one out. Five figures will be given out of which one is not correct.

Refer R.S Agarwal's book on Analytical Reasoning & TMHs Quantitative ability book by Edgar Thorpe.

SECTION -V:

For following first find out the anagram and then note the corresponding meaning.

33.TABLET
  Hint: anagram means first u arrange the letters in correct order like TABLET===BATTLE . So ans is FIGHT

34.RUGGED

35.GORE.

36.STASSI.

For all above choices are.

a)resentment
b)fight
c)help
d)monster

37. ENFOLD

38. LAMB

39. RECEDE.

40. PLEASE.

For all the above 4 choices are same

a)cuddle
b)sleeping
c)proclamination
d)ointment.

This is only a sample paper. We are not providing you with all the questions - just some questions to give you a general idea of the test pattern.

SECTION I - *8 questions based on series.*

1. These questions involve interchange of letters in a word at particular locations and also interchanging letters adjacent to those particular locations.Certain other conditions may also be given
For eg.
Let the word be ABBAABA
If we apply 25 on this, it means we have to interchange the letters at positions 2 and 5, also we have to change the letters adjacent to positions 2 and 5 i.e.from A to B and B to A.
A B B A A B after Step 1 i.e interchange of 2 and 5 becomes AABABB
Now change adjacent elements of 2 and 5...finally answer becomes
Ans: B A A B B A

Questions 1-5 are based on the pattern with changed numbers as described above

Questions 6-8 are of the following type

To get AAABBD from BBBAAA what number should be applied:-
a) 25
b) 34
c) 25 & 34
d) none

SECTION II

1. Given the following functions
(1) f(n a b c) = ac if n=1
(2) f(n a b c) = f(n-1 a c b) + f(1 a b c) + f(n-1 b a c) if n > 1

Then what is the value   f(2 a b c) = ?

Ans: f(2 a c b) = ab + ac + bc.

2. Similar question on functions.

3. *[Based on the function in the first question]* **For the function f(4 a b c) the number of terms is...?**
Hint **f(4 a b c) = f(3 a c b) + f(1 a b c) + f(3 b a c) etc.**

4. What is the value of the function f(5 a b c) = ?

SECTION III

Permutations and Combinations.
8 Questions.

1. r = number of flags;n = number of poles;
Any number of flags can be accommodated on any single pole.

1)r=5,n=5 The no. of ways the flags can be arranged ?

Questions 2-5 are based on the above pattern

6. r = 5 n = 3 . If first pole has 2 flags, third pole has 1 flag
   How many ways can the remaining be arranged?

Questions 7.& 8. are similar to Question 6.

SECTION IV
Question consisting of figures - Pattern-matching type.

Refer R.S Agarwal's book on Analytical Reasoning & TMHs Quantitative ability book by Edgar Thorpe.

SECTION V
In this section first part of compound word is given. Select meaning of the second part from the choice given:
1. Swan
2. Swans
3. Fool
4. Fools
5. Stare
6. Lady
For all above 4 choices are given.....

Eg. Swan ---> Swansong (compound word)
a) category b) music c) television d) none
Ans: Swansong is compound word. But song is not given as an option. so (b) music is the answer.

Analogies

1. slur : speech : : smudge :?
Ans. writing

2. epaulet : shoulder : : ring :?
Ans.finger

3. vernacular : place : : fingerprint : ?
Ans.identical

Opposites

Q. corpulent
Ans: emaciated

Q. officious
Ans: pragmate

Q. dextrous
Ans: clumsy

The following sentences are broken into 4 sections- A, B, C, D
Choose the part which has a mistake
Mark (E) if you find no mistake.

Q.A)psychologists point out that B)there are human processes C)which does not involve D) the use of words

Ans. (C) which <u>does</u> not involve (do)

Q.A)jack ordered for B)two plates of chicken C)and a glass D)of water

Ans. (A)jack ordered <u>for</u>

The following is a group of questions is based on a passage or a set of conditions for each question.
Select the best answer choice given.

(i). If it is fobidden by law if the object of agreement is the doing of an act,
that is forbidden by law the agreement is void.

(ii). If it is of the nature that,it would defeat the provision of any law
is the agreement is void.if the object of agreement is such that thing got
directly forbidden by law it would defeat the provision of statuary law.

(iii). If the object of agreement is fraddulent it is void.

(iv). An object of agreement is void if it involves or implies to the personnal property of another.

(v). An object of agreement is void where the constant regards as ignored.

(vi). An object of agreement is void where the constant regards is as opposed to public policy.

Q. An algorithm follws a six step process za,zb,zc,zd,ze,zf, it is governed by the following

(i) zd should follow ze
(ii) the first may be za,zd or zf

(iii) zb and zc have to be performed after zd
(iv) zc must be immediately after zb

Q. If za is the first set zd must be

a) 3rd
b) 5th
c) 2nd
d) 4th

Q. If zb must follow za then za can be

a) third or fourth
b) first or second
c) can not be third
d) fouth or fifth
e) none

Q. If ze is third term the number of different operations possible are

The following questions are based on the given statements
Ravi plants six seperate saplings -- x,y,z,w,u,v in rows no 1 to 6 ,according to the
follwing conditions
He must plant x before y and u
He must plant y and w
The third has to be z

Q. Which of the following is acceptable

a) xuywzv
b) xvzyuw
c) zuyxwv
d) zvxuwy
e) wyzuvx

Q. Which of the following is true

a) z before v
b) z before x
c) w before u
d) y before u
e) x before w

Q. If he plants v first, then which can be planted second

a) x
b) y
c) z
d) w
e) u

Q. Which of the following describes a correct combination of sapling and row?

a) x,3
b) y,6
c) z,1
d) w,2
e) u,6

Q. If he plants b 6th which would be planted first and second

a) x and w
b) x and y
c)y and x
d)w and z
e) w and u

Q. If he plants w before u and after v he should plant w at

a) first
b) second
c) fourth
d) fifth
e) sixth

Q. At a certain moment a watch shows 2 min lag although it is running fast.
   If it showed a 3 min lag at that moment, but also gains by 1/2 min more a day than its current speed
   it would show the true time one day sooner than it usually does.
   How many mins does the watch gain per day.

a).2
b).5
c).6

d).4
e).75

Q. In 400m race A gives B a start of 7 sec and beats him by 24 sec.
In another race A beats B by 10 sec.the speeds are in the ratio

a)8:7
b)7:6
c)10:8
d)6:8
e)12:10

Q. $3x+4y=10$
$x^3 + y^3=6$
What is the minimum value of $3x+11y=?$

Q. There are 600 tennis players
4% wear wrist band on one wrist
Of the remaining, 25% wear wrist bands on both hands
How many players don't wear a wrist band?

Ans. 432

Q. Three types of tea the a,b,c costs Rs. 95/kg,100/kg and70/kg respectively.
How many kgs of each should be blended to produce 100 kg of mixture worth
Rs.90/kg,
given that the quntities of band c are equal

a)70,15,15
b)50,25,25
c)60,20,20
d)40,30,30

Ans. (b)

Q. Two distinct no's are taken from 1,2,3,4......28
Find the probability that their sum is less than 13

DE SHAW AND CO.

:

The paper is technical based - with a **major emphasis on C**. At the moment

we are providing you with a few questions so that you have an idea of the paper and know what to expect.

SECTION-A

Write the programs for the following problems in C.

1. Swap two variables x,y without using a temporary variable.

2. Write algorithm for finding the GCD of a number.

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). Hint : 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
   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

6. For the following C program

```
#define AND &&
#define ARRANGE (a>25 AND a<50)
main()
{int a = 30;
if (ARRANGE)
printf("within range");
else
```

```
printf("out of range");
}
```

What is the output?

7. For the following C program

```
#define AREA(x)(3.14*x*x)
main()
{floatr1=6.25,r2=2.5,a;
a=AREA(r1);
printf("\n Area of the circle is %f", a);
a=AREA(r2);
printf("\n Area of the circle is %f", a);
}
```

What is the output?

Ans. Area of the circle is 122.656250
     Area of the circle is 19.625000

8. What do the following statements indicate. Explain.

- int(*p)[10]
- int*f()
- int(*pf)()
- int*p[10]

Refer to:
-- Kernighan & Ritchie page no. 122
-- Schaum series page no. 323

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.

DEUTSCHE S/W INDIA PVT LTD

:
       The written test is purely an aptitude test.It is a one hour test with 50 questions.The
test checks your basic mathematics and logical ability.

1. What is the percentage represented by 0.03 * 0.05 ?

(a)0.0015
(b)0.000015
(c)0.15
(d)15

Ans.B

2. (x-a)(x-b)(x-c)....(x-z) = ?

(a) 1
(b) -1
(c) 0
(d) Can't be determined

Ans. C

3. If a = 1, b = 2, c = 3.......z = 26 what is the value of p+q+r ?

(a)33
(b)51
(c)52
(d)48

Ans. B

4. A is 8 miles east of B.
   C is 10 miles north of B.
   D is 13 miles east of C and E is 2 miles north of D.
   Find shortest distance between A and E.

(a) 5 miles
(b) 6miles
(c) 13 miles
(d) 18 miles

Ans. C

5. If z = 1, y = 2.......a = 26. Find the value of z + y + x + ...+a.

(a) 351
(b) 221

(c) 400
(d) 200

Ans. A

6. There are 30 socks in a bag.
    Out of these 60 % are green and the rest are blue.
    What is the maximum number of times that socks have to be taken out so that atleast 1 blue pair is found.

(a) 21
(b) 2
(c)18
(d) 20

Ans. D

7. How many two digit numbers have their square ending with 8.

(a) 13
(b) 12
(c) 0
(d) 11

Ans. C

8. How many numbers are there between 100 and 300 with 2 in the end and 2 in the beginning.

(a) 10
(b) 9
(c) 11
(d) none of these

Ans. A

9. 0.000006 * 0.0000007 = ?

(a) 0.0000000042
(b) 0.000000000042

(c) 0.0000000000042
(d) 0.00000000000042

10. You have Rs 1000 with 8% p.a compounded every 6 months.
    What is the total interest you get after 1 year.

(a) Rs.116.40
(b) Rs.345.60
(c) Rs.224.50
(d) Rs.160

11. If x + y =12,
       x - y = 2
    Find x + 2y.

(a) 12
(b) 17
(c) 14
(d) none of these

12. With one gallon of petrol a person moves at a speed of 50 mph and covers 16 miles.
    3/4th of the distance is covered while moving at 60 mph.
    How many gallons does he need to cover 120 miles in 60 mph.

13. A tap drains at x speed while tap B is closed.
    When both taps are open they drain at y speed.
    What is the speed of draining when only tap B is open

(a) x - y
(b) y-x
(c) x
(d) can't be determined

14. What is twenty percent of 25 % of 20.

(a) 2
(b)1
(c) 5
(d) 4

Ans. B

15. A rectangle has the dimensions 6ft * 4ft.
   How many squares of 0.5 inches will it need to completely fill it.

(a) 32000
(b) 12824
(c) 13824
(d) 18324

Ans. C

Directions for questions 16-21: In each question,a series of letters satisfying a certain pattern are given. Identify the pattern and then find the letter/letters that will come in place of the blank/blanks.

16. a, c, e, g, _

(a) h
(b) i
(c) d
(d) j

Ans. B

17. a, e, i, m, q, u, _, _

(a) y, c
(b) b, f
(c) g, i
(d) none

Ans. A

18. ay , bz , cw , dx ,__

(a) gu
(b) ev
(c) fv
(d) eu

Ans. D

19. 1, 2, 3, 5, 7, 11, __

(a) 15
(b) 9
(c) 13
(d) 12

Ans. 13 , series of prime numbers

20. kp , lo , mn , __

(a) nm
(b) np
(c) op
(d) pq

Ans. A

21. abc , zyx , def , wvu , ___

(a) ghi
(b) tsr
(c) ihg
(d) str

Ans. A

22. How is my mother's sister's brother's wife's child related to me?

(a) brother
(b) uncle

(c) cousin
(d) nephew

23.What will my mother's husband's father-in-law's son's daughter to me?

(a) niece
(b) aunt
(c) sister
(d) none of these

DHARMA SYSTEM

The format of the dharma paper is like this:

There will be two sets of papers, one the technical which is full of c and the other is aptitude which has very simple questions (about 60 of them) but what matters is the speed at which one does the paper. The aptitude paper is fairly simple and is pretty straightforward so we aren't putting it up here. We would suggest that you view the aptitude papers of other companies put on this site to get an idea about it. The technical paper is slightly different as it covers C in depth. This is the paper that we have kept as the sample test given below..

Give the output of the programs in each case unless mentioned otherwise

1.
```c
void main()
{
int d=5;
printf("%f",d);
}
```

Ans: Undefined

2.
```c
void main()
{
int i;
for(i=1;i<4,i++)
switch(i)
case 1: printf("%d",i);break;
```

```
{
case 2:printf("%d",i);break;
case 3:printf("%d",i);break;
}
switch(i) case 4:printf("%d",i);
}
```

Ans: 1,2,3,4

3.
```
void main()
{
char *s="\12345s\n";
printf("%d",sizeof(s));
}
```

Ans: 6

4.
```
void main()
{
unsigned i=1; /* unsigned char k= -1 => k=255; */
signed j=-1; /* char k= -1 => k=65535 */
/* unsigned or signed int k= -1 =>k=65535 */
if(i<j)
printf("less");
else
if(i>j)
printf("greater");
else
if(i==j)
printf("equal");
}
```

Ans: less

5.
```
void main()
{
float j;
j=1000*1000;
printf("%f",j);
}
```

1. 1000000
2. Overflow
3. Error
4. None

Ans: 4

6. How do you declare an array of N pointers to functions returning pointers to functions returning pointers to characters?

Ans: The first part of this question can be answered in at least three ways:

  1. char *(*(*a[N])())();

  2. Build the declaration up incrementally, using typedefs:

     typedef char *pc;   /* pointer to char */
     typedef pc fpc();   /* function returning pointer to char */
     typedef fpc *pfpc;   /* pointer to above */
     typedef pfpc fpfpc();   /* function returning... */
     typedef fpfpc *pfpfpc;   /* pointer to... */
     pfpfpc a[N];   /* array of... */

  3. Use the cdecl program, which turns English into C and vice versa:

     cdecl> declare a as array of pointer to function returning
        pointer to function returning pointer to char
     char *(*(*a[])())()

  cdecl can also explain complicated declarations, help with
  casts, and indicate which set of parentheses the arguments
  go in (for complicated function definitions, like the one
  above).
  Any good book on C should explain how to read these complicated
  C declarations "inside out" to understand them ("declaration
  mimics use").
  The pointer-to-function declarations in the examples above have
  not included parameter type information. When the parameters
  have complicated types, declarations can *really* get messy.
  (Modern versions of cdecl can help here, too.)

7. A structure pointer is defined of the type time . With 3 fields min,sec hours having pointers to intergers.
    Write the way to initialize the 2nd element to 10.

8. In the above question an array of pointers is declared.
    Write the statement to initialize the 3rd element of the 2 element to 10;

9.
```
int f()
void main()
{
f(1);
f(1,2);
f(1,2,3);
}
f(int i,int j,int k)
{
printf("%d %d %d",i,j,k);
}
```

What are the number of syntax errors in the above?

Ans: None.

10.
```
void main()
{
int i=7;
printf("%d",i++*i++);
}
```

Ans: 56

11.
```
#define one 0
#ifdef one
printf("one is defined ");
#ifndef one
printf("one is not defined ");
```

Ans: "one is defined"

12.
```c
void main()
{
intcount=10,*temp,sum=0;
temp=&count;
*temp=20;
temp=&sum;
*temp=count;
printf("%d %d %d ",count,*temp,sum);
}
```

Ans: 20 20 20

13. There was question in c working only on unix machine with pattern matching.

14. what is alloca()

Ans : It allocates and frees memory after use/after getting out of scope

15.
```c
main()
{
static i=3;
printf("%d",i--);
return i>0 ? main():0;
}
```

Ans: 321

16.
```c
char *foo()
{
char result[100]);
strcpy(result,"anything is good");
return(result);
}
void main()
{
char *j;
j=foo()
printf("%s",j);
```

}

Ans: anything is good.

17.
```c
void main()
{
char *s[]={ "dharma","hewlett-packard","siemens","ibm"};
char **p;
p=s;
printf("%s",++*p);
printf("%s",*p++);
printf("%s",++*p);
}
```

Ans: "harma" (p->add(dharma) && (*p)->harma)
"harma" (after printing, p->add(hewlett-packard) &&(*p)->harma)
"ewlett-packard"

FUTURE S/W PVT LTD

:
      The written test is purely technical and mostly covers mainly computer engineering related subjects.The paper is multiple choice with negative marking. It consists of some 25 questions to be done in 1 hour.The questions are based on subjects such as Data Structures , Networking, Digital Circuits and Logic Design , C, Operating Systems, Automata Theory, Basic Communications, Compiler Design.
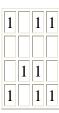
. S --> AB|AS
  A --> a|aA
  B --> b

What is the grammer accepted by the above?

Ans. aa*b

2. How many address lines are needed to address a 64Kb segment with each register storing upto 512 bytes.

Ans. 14 address lines

3. Find the expression representing the following K-map

1		1	1
	1	1	
1		1	1

4. For the POS form of the expression given below

$$\overline{X}.Y.\overline{Z} + X.\overline{Y}.Z + X.(Y + Z)$$

5. In a computer system the ROM :

(a) contains boot software
(b) is permanent
(c) Both of the above
(d) None of the above

Ans. (c)

6. The binary equivalent of 3B7F is

Ans. 0011 1011 0111 1111

7. The register used by the shift reduce passing method is

Ans. Stack

8. A microprogram can be defines as to consist of

Ans. A primitive operation

9. Find the output for the following C program

```
int array[4][4] = {1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16};
for (i=2;i<0;i--)
 for(j=2;j<=0;j--)
   printf("%d", arr[i][j]);
```

10. Find the output for the following C program

```
#include<stdio.h>
void main()
{int i,x,sum=0;
int arr[6]=[1,2,3,4,5,6]
for (i=0;i<4;i++)
sum+ = func(arr[i]);
printf("%d", sum);
}

func(int x)
{ int val,x;
val = 2;
return(x+ val++);
}
```

11. Given the following data:

- Process P1 takes 2 seconds
- Process P2 takes 3 seconds
- Process P3 takes 4 seconds
- Process P4 takes 1 second
- Process P5 takes 6 seconds

Find the average time in case of shortest job first (SJF) scheduling.

12. Given a string STOCK and a stack of size 4.
    Which of the following strings cannot be generated using this stack.

(a) TSOCK
(b) TOSKC
(c) STOCK
(d) TKOSC
(e) None of these

13. Inversion of a matrix will take which of the following time complexities?

(a) O(n)
(b) O(n²)
(c) O(log n)
(d) O(n³)
(e) None of these

14. A drum rotates at 4000 rpm. What is its average access time.

15. What range of integral values can be stored using 32 bits?

16. Where are the following variables stored

- Automatic
- Global
- Static

17. If a layer 4 transfers data at the rate of 3000 bytes/sec.
    What will be the size of data block transferred by Layer 2

18. What is the greatest disadvantage of dynamic RAM over static RAM

Ans. High Power and need to refresh every 2 ms.

19. What happens when the CPU gets interrupted?

20. Find the Postfix of the following string

 (a + b) * ((-d) *f (ab - cd))

21. E --> E + E| E * E | E/E | E - E| .... then which is correct

(a) It is ambigous
(b) It is inherently ambigous
(c) It is non inherently ambigous
(d) None of the above

22. If there are n nodes and K edges in a graph then what is the order of traversing

Ans. O(n²)

23. A graph is represented as an adjacency list with n vertices and e edges
    What is its time complexity

24. An array with address KV[a] had n elements. Which of the following correctly addresses the ith element of the array.

(a) KV(a) - 2a + 2i
(b) KV(a) +2i
(c) KV(a) - 2a
(d) None of these

25. Give an example of a primitive instruction in microprocessors.

26. A computer has 8 bit data bus and 16 bit address line.
    How many machine cycles will it take to store the contents to a memory location?

27. Where is a variable defined in a function stores?

Ans. Process Swappable Area

28. For the following C progralm

```
int d=0;
 for(int i=0;i<31;i++)
  for(int j=0;j<31;j++)
   for(int k=0;k<31;k++)
   if (((i+j+k) % 3)==0)
   d=d+1;
```

Find value of d

29. e=<e+e> | <e*e> | <(e)> | <id>
    What forms do the expressions created by the above definition fit in

Ans. All arithematic expressions

30. If a set of numbers are in sorted order then which of the following sorting method is best

Ans. Bubble Sort

31. A magnetic tape is similar to which of the following structures

Ans. List

32. The s/n id 3 dB Find the capacity of the line.

GEOMETRIC SOLUTION

 The written test consists of three sections.
Section 1 is an aptitude section and consists of MCQ's
Section 2 is basic computer awareness and also has MCQ's
Section 3 is a C Test which is a subjective test

SECTION 1- APTITUDE SECTION

Directions for questions 1-3: Complete the sequence given below

1. 5, 5, 13, 13, 21, 21, __

Ans: 29

2. 0, 7, 26, 63, 124, __

Ans: 215 (*hint:* n^3-1)

3. 1, 3, 5, 7, __

Ans: 9

4. If a person walks at 4/5th of his usual speed he reaches 40min late. If he walks at his usual speed for how much time does he travel ?

5. Two trains A&B start at opposite points 120km apart at 60kmph. A fly starting along with train A at 120kmph reaches B then returns back to touch A and continues the two and fro movement. By the time two trains meet how much distance would the fly have travelled?

6. In a class 80% have passed in english, 70% passed Hindi, 10% didn't pass either. If 144 students passed both the subjects. What is the total strength of the class?

7. Find the least number which when divided by 7 gives the reminder 6, when divided by 6 gives reminder 5, when divided by 5 gives reminder 4 and so on ?

8. If a man stands in front of sun what is the first letter of the direction which is left to him ?

9. (a)A square is to circle as cube is to
   (b)Success is to failure as joy is to

10. (a)Give the synonyms of the following words
(i) Joy
(ii) Inert
(iii) Jolly

(b) Give the opposites of the following words
(i) genuine
(ii) command
(iii) essential

11.Find the odd man out in the following sets
(i) Tiger, Elephant, King Cobra, Dolphin
(ii) Oasis, Lake, Pool, Valcano
(iii) Bengali, Karnataka, Mumbai, Kashmir
(iv) Lapidary, Lancet, Scapel, Surgeon
(v) Requiem, Dirge, Elegy, Paean

12. I bought a cycle 2days before my birthday and I broke it 3 days after my birthday. The day I broke it is Mar2,1956?

Directions: The following questions are to be answered on the basis of the above given statement

i) When is my birthday?
Hint: Keep in mind that 1956 was a leap year.
(ii) What is my age on Mar 4th, 1980?
(iii) My nephew is born exactly 20years after me. If I turned 20 in 1960, what is the nephews age on Feb 28th 1988 ?

13. Monday Aug25, 96 :
Hostess: "Mr A, you forgot your umbrella during the party on last friday. I expected you to collect it on your visit on wednesday as I plan to leave on this Friday."

Directions: The following questions are to be answered on the basis of the above given statement

(i) when A missed umbrella?
(ii)When A is supposed to collect it?
(iii)When K leaves?

14.What is my father's sons son to my son?

Ans. Cousin brother

15. On cutting a solid parabola what would be generated

Ans: Cone

16. What is Eulers formula?

Ans: F+V-E =2; where
F => faces; V => vertices; E => number of edges

17. What is Newton Raphson method used for?

Ans: To find the root of f(x) = 0;

18. How many tangents can be drawn on three circles if they don't lie within each other ?

19. xy - x + 2y = 6 equation is shifted to form equation xy=c what is c ?

20.When x is real what is the least value of $(x^2-6x+5)/(x^2+2x+1)$

21.When an object like cube or sphere is seen along x, y, z axis we get the same.Apart from these suggest another object which has similar characteristics as that mentioned above?

Ans: Triangular prism

22. When an object is seen from the front side we can see two concentric squares and top view also without any hidden lines. Draw the side view.

23. In common parlance, A=> B means what

Ans: if A is true B has to be true

23. If A is not invertible and BA = I is not possible, what is implied by this?

Ans: Determinant is Zero.

24. What is a free body diagram used for

25. A die is thrown twice what is the probability that you get same number

26. The sum of two numbers is 55. What is the larger number?

SECTION 2-TECHNICAL SECTION

1. Convert 251 in base 10 to octal(base 8)?

2. How much information can be stored in 1 byte of a IBM pc compatible?

3.What is the language used for Artificial Intelligence

Ans: lisp

4. Swap two variables without using temporary variable

Ans: a= a+b; b= a-b; a= a-b:

5.Which is not the operating system ?

Ans: BIOS

6. What is the optimum number of operations for $2x^3 + 3x^2 + 5x + 5$?

7. In the fortran language which of the following is true.
(i) fortran uses call by value
(ii) fortran is object oriented
(iii) fortran allows use of function overloading

Ans. (i)

8. When a program is compiled what does it produce?

Ans: Source code is converted to object code

9. What is the difference between function overloading and function overriding?

10. What is the character set used in JAVA 2.0 ?

Ans: Unicode

SECTION 3 - C TEST

1. What is the mistake in the following program segment ?

```
f()
{
int a;
void c;
f2(&c,&a);}
```

2. a=0;
   b=(a=0)?2:3;

a) What will be the value of b and why ?
b) If in first statement a= 0 is replaced by a= -1, b = ?
c) If in second statement a=0 is replaced by a = -1, b=?

3. char *a[2];
int const *p;
int *const p;
struct new { int a;int b; *var[5] (struct new)}

Describe the statements in the above given construct ?

4. f()
   {
      int a=2;
      f1(a++);
   }
f1(int c)

```
{
printf("%d", c);
}
```

What is the value of c ?

```
5. f1()
   {
      f(3);
   }
f(int t)
{
switch(t);
{
case 2: c=3;
case 3: c=4;
case 4: c=5;
case 5: c=6;
default: c=0;
}
```

What is the value of c?

6. What is the fallacy in the following program segment ?

```
int *f1()
{
int a=5;
return &a;
}
f()
int *b=f1()
int c=*b;
}
```

7. Give the C language equivalents of the following
a)Function returning an int pointer
b)Function pointer returning an int pointer
c)Function pointer returning an array of integers
d)Array of function pointer returning an array of integers

8. Find the fallacy in the following program segment?

```
int a;
short b;
b=a;
```

9. Define function ? Explain arguments in functions ?

10. How does C pass variables to a function ?

11. Explain the following program segment.
```
f(){
int *b;
*b=2;
}
```

12. Explain binary trees and their use ?

13. Draw the diagram showing the function stack, illustrating the variables that were pushed on the stack at the point when function f2 has been introduced .

```
type def struct
{ double x,double y} point; }
main( int argc, char *arg[3])
{ double a;
int b,c;
f1(a,b); }

f1(double x, int y)
{point p;
stack int n;
f2(p,x,y)
}

f2(point p, double angle)
{ int i,j,k,int max;
}
```

HCL TECHNOLOGY

:

The written test is purely technical and mostly covers mainly computer engineering related subjects. The paper is multiple choice with negative marking. It consists of some 25 questions to be done in 1 hour.The questions are based on subjects such as Data Structures, Networking, Digital Circuits and Logic Design, C, Operating Systems, Automata Theory, Basic Communications, Compiler Design.

Section A

1. Which of the following involves context switch,

(a) system call
(b) priviliged instruction
(c) floating poitnt exception
(d) all the above
(e) none of the above

Ans: (a)

2. In OST, terminal emulation is done in

(a) sessions layer
(b) application layer
(c) presentation layer
(d) transport layer

Ans: (b)

3. For a 25MHz processor , what is the time taken by the instruction which needs 3 clock cycles,

(a)120 nano secs
(b)120 micro secs
(c)75 nano secs
(d)75 micro secs

4. For 1 MB memory, the number of address lines required,

(a)11
(b)16
(c)22
(d) 24

Ans. (b)

5. Semaphore is used for

(a) synchronization
(b) dead-lock avoidence
(c) box
(d) none

6. Which holds true for the following statement

   class c: public A, public B

a) 2 member in class A, B should not have same name
b) 2 member in class A, C should not have same name
c) both
d) none

7. Question related to java

8. OLE is used in

a) inter connection in unix
b) interconnection in WINDOWS
c) interconnection in WINDOWS NT

9. Convert a given HEX number to OCTAL

10. Macros and function are related in what aspect?

(a)recursion
(b)varying no of arguments
(c)hypochecking
(d)type declaration

11.Preproconia.. does not do which one of the following

(a) macro
(b) conditional compliclation
(c) in type checking
(d) including load file

12. Piggy backing is a technique for

a) Flow control
b) Sequence
c) Acknowledgement
d) retransmition

Ans. (c)

13. In signed magnitude notation what is the minimum value that can be represented with 8 bits

(a) -128
(b) -255
(c) -127
(d) 0

14. There is an employer table with key fields as employer number data
in every n'th row are needed for a simple following queries will get required results.

(a) select A employee number from employee A , where exists from employee B where A employee no. >= B
employee having (count(*) mod n)=0
(b) select employee number from employe A, employe B where A employe number>=B employ number
group by employee number having(count(*) mod n=0)
(c) both (a) & (b)
(d) none of the above

15. Type duplicates of a row in a table customer with non uniform key field customer number you can see

a) delete from costomer where customer number exists(select distinct customer number from customer having count)
b) delete customer a where customer number in b rowid
c) delete customer a where custermor number in(select customer number from customer a, customer b)
d) none of the above

Section B

1. Given the following statement
   enum day = { jan = 1 ,feb=4, april, may}
   What is the value of may?

(a) 4
(b) 5
(c) 6
(d) 11
(e) None of the above

2. Find the output for the following C program

```
main
{int x,j,k;
j=k=6;x=2;
x=j*k;
printf("%d", x);
```


3. Find the output for the following C program

```
fn f(x)
{ if(x<=0)
return;
else f(x-1)+x;
}
```


4. Find the output for the following C program

```
i=20,k=0;
for(j=1;j<i;j=1+4*(i/j))
{k+=j<10?4:3;
}
printf("%d", k);
```

Ans. k=4

5. Find the output for the following C program

```
int i =10
main()
{int i =20,n;
```

```
for(n=0;n<=i;)
{int i=10;
i++;
}
printf("%d", i);
```

Ans. i=20

6. Find the output for the following C program

```
int x=5;
y= x&y
```

7.Find the output for the following C program

```
Y=10;
if( Y++>9 && Y++!=10 && Y++>10)
{printf("%d", Y);
else
printf("%d", Y);
}
```

Ans. 13

8. Find the output for the following C program

```
f=(x>y)?x:y
```

a) f points to max of x and y
b) f points to min of x and y
c)error

Ans. (a)

9. What is the sizeof(long int)

(a) 4 bytes
(b) 2 bytes
(c) compiler dependent
(d) 8 bytes

10. Which of the function operator cannot be over loaded

(a) <=
(b) ?:
(c) ==
(d) *

11. Find the output for the following C program

```
main()
{intx=2,y=6,z=6;
x=y==z;
printf(%d",x)
}
```


Section C (Programming Skills)

Answer the questions based on the following program

```
STRUCT DOUBLELIST
{ DOUBLE CLINKED
INT DET; LIST VOID
STRUCT PREVIOUS; (BE GIVEN AND A PROCEDURE TO DELETE)
STRUCT NEW; (AN ELEMENT WILL BE GIVEN)
}
DELETE(STRUCT NODE)
{NODE-PREV-NEXT NODE-NEXT;
NODE-NEXT-PREV NODE-PREV;
IF(NODE==HEAD)
NODE
}
```

Q. In what case the prev was

(a) All cases
(b) It does not work for the last element
(c) It does not for the first element
(d) None of these

Answer the questions based on the following program

```
VOID FUNCTION(INT KK)
{KK+=20;
}
VOID FUNCTION (INT K)
INT MM,N=&M
KN = K
KN+-=10;
}
```

Q. What is the output of the following program

```
main()
{ int var=25,varp;
varp=&var;
varp p = 10;
fnc(varp)
printf("%d%d,var,varp);
}
```

(a) 20,55
(b) 35,35
(c) 25,25
(d)55,55

Section D

1. a=2, b=3, c=6
   Find the value of **c/(a+b)-(a+b)/c**

2. What does the hexanumber E78 in radix 7.

(a) 12455
(b) 14153
(c) 14256
(d) 13541
(e) 131112

Ans. (d)

3. 10 : 4 seconds :: ? : 6 minutes

4. Q is not equal to zero and k = (Q x n - s)/2.What is n?

(a) (2 x k + s)/Q
(b) (2 x s x k)/Q
(c) (2 x k - s)/Q
(d) (2 x k + s x Q)/Q
(e) (k + s)/Q

5. From the following statements determing the order of ranking

- M has double the amount as D
- Y has 3 rupess more than half the amount of D

Questions 6 - 10 are to be answered on the following data

- A causes B or C, but not both
- F occurs only if B occurs
- D occurs if B or C occurs
- E occurs only if C occurs
- J occurs only if E or F occurs
- D causes G,H or both
- H occurs if E occurs
- G occurs if F occurs

6. If A occurs which of the following must occurs

I. F and G
II. E and H
III. D

(a) I only
(b) II only
(c) III only
(d) I,II, & III
(e) I & II (or) II & III but not both

7. If B occurs which must occur

(a) D
(b) D and G
(c) G and H
(d) F and G
(e) J

Ans. (a)

8. If J occurs which must have occured

(a) E
(b) either B or C
(c) both E & F
(d) B
(e) both B & C

Ans. (b)

9. Which may occurs as a result of cause not mentioned

I. D
II. A
III. F

(a) I only
(b) II only
(c) I & II
(d) II & III
(e) I,II & III

Ans. (c)

10. E occurs which one cannot occurs

(a) A
(b) F
(c) D
(d) C
(e) J

Ans. (b)

HUGHES S/W

At the moment we have just one paper of Hughes Software. The paper is **technical** based with a question or two of probabilty thrown in.Subjects stressed are Operating Systems, Data Structures,C Programming,Communications etc.We have given a rough idea on the kind of paper that you can expect. We are not providing you with the inputs of the interview for this company - but we hope to add it very shortly.

1. Find the probability of getting a number with 7 between 100 and 999 (both inclusive).

2. There are 10 items in a box, out of which 3 are defective.
   2 balls are taken one after the other.
   What is the probability that both of them are defective?

3. Context free grammar is accepted by

a) finite automata
b) push down automata
c) two way bounded automata
d) both b and c

4. Which is not a memory management scheme?

a) buddy system
b) swapping
c) monitors
d) paging

Ans : c

5. Simplify the Karnaugh map given below and derive its expression in SOP form

-	1	1	-
1	-	-	1
1	-	-	1
-	1	1	-

6. Question on NAND gates implementation.

7. Definition of Context Sensitive Grammar

8. An identifier can start with a letter followed by any number of letter or digits .

9. With the following configuration:
   8MB total memory, 256kb cache , 4kb is block size.
   Using direct mapping, how many different physical memory blocks can be mapped on to the cache.

(a) 64 (b) 256 (c) 128

10. CSMA/CD is used in

a) token ring
b) FDDI
c) ethernet

11. In TCP/IP header, checksum contains

a) sum of all the words
b) ones complement of the data
c) ones complement of the sum of all the words
d) ones complement of the sum in ones complement

12. What is the maximum number of acknowledgements for a 4 bit sequence number in a sliding window protocol.

13. Which is a good way of representing varaibles in recursion

a) local variables
b) static varaibles
c) global variables

14. Given the following c program

func()
{
static int i = 10;

```
printf("%d",i);
i++;
}
```

What is the value of i if the function is called twice ?

15. Given the following c program

```
func(int *i, int*j)
{*i=*i * *i;
 *j=*j* *j;
}

main()
{ int i = 5, j = 2;
  func(&i,&j);
  printf("%d %d", i, j);}
```

What is the output?

16. Given page table, page size and offset find the corresponding physical address ?

17. In a memory chip 4k size and 16bit words are to be stored.
    No of address and data lines required is:

18. Identify in which pass of the 2 pass compiler are the following compiled

1) literals
2) address resolution
3) listing

19. Object code does not require

a) relocation bits
b) external names and place where they are located
c) absolute adress
d) all the object codes

20. ARP is in reference to

a) MAC to IP
b) IP to MAC

21. Question on Balanced tree -
    A balanced tree is given and a node is addded at the leaf.
    Find the no of unbalanced nodes?

22. What is the order of Hashing time:

a) 0(1)
b) 0(n2)

23. Given that:
    s -> s + s ; s -> s * s ; s -> a
    Find the no of parse trees for a+a*a+a

a) 4
b) 5
c) 6
d) 7

24. Order of deleting a node from a linked list.
    (pointer is to an arbitrary node)

a)0(1)
b)0(n)

25. A choclate of size nXn is given and is to be made into pices of size 1x1.
    At a time both horizontal and a vertical cut is done.
    Find the order of complexity

a) O(n2)
b) O(nlogn)
c) O(logn)

26. A directed graph is represented by adjacency list.
    To find the complexity of indegree of the node. e - edge n- vertices

27) No of leaf nodes given. find the no of nodes with degree 2.

28) AX = B.
   A is mXn and B is mX1

a) there is a unique solution if rank of A is same as rank of augumented matrix [A b]
b) there are multiple solutions

29. LXI sp,2099h
    LXI b, 2012h
    PUSH b

30. A and B are sets.
    A's cardinality is m and B's is n where m < n
    How many one to one mappings can be obtained.

a) n ^ m
b) npm
c) mpn
d) mcn

31. In scheduling algorithnms which are logically executed but suspended

a) preemptive
b) SJF
c)non preemptive
d) all the above

32. I/O redirection is

a) copying programs files through a pipe
b) input files are created
c) input file taken from existing ones
d) none

33. Symmetric multiprocessing can be done in

a) snoopy protocols
b) cache coherence

34. In the dining philosophers problems to avoid dead lock

a) 1 person will take left one and all other will take right one
b) adjacent persons should not eat concurrently

35. In the process state cycle, which is the correct order

a) timeout: ready -> running
b) blocked: ready -> running

36. For converting infix expression to postfix what do we require

a) operand stack
b) operator stack

37. 0 is reprented as both and negative and positive in

a) ones complement
b) twos complement
c) two's complement has extra negative number

38. What is the difference between c and c++?

a)In c++ we can define variables in the middle
b)dynamic scoping

39. Which of the following is correct

a) Synchronous tranmission needs more badwidth than Asychronous.
b) Inasychronous transmission , the time is associated with data itself.....

. There was a circuit given using three nand gates with two inputs and one output.
   Find the output.

a) OR
b) AND
c) XOR
d) NOT

Ans. (a)

2. Suggest a sorting algorithm which is efficient (in worst case) to 10 values

a) Binary tree
b) Selection
c) Bubble
d) Any of the above

3. What is the number of comparisons in the worst case to merge two sorted lists containing n elements each.

a) 2n
b) 2n-1
c) 2n+1
d) 2n-2

4.Iintegrated check value(ICV) are used as:

Ans. The client computes the ICV and then compares it with the senders value.

5. Question on client-server system using asychronous request from the client

6. If a binary tree is constructed using nodes with two pointers each,
   how many null pointers does a tree with N nodes have

a) n-1
b) n
c) n+1
d) Depends on the number of edges

7. Which of following statements about heap is wrong

a) An n element heap has height log n(base of log is 2)
b) Smallest element of heap is always a leaf
c) A array in reverse sorted order is a heap
d) A heap can't contain any element more than once

8. When applets are downloaded from web sites , a byte verifier performs _____?

Ans. Status check.

9. For the following C program

```
void insert(key,r)
typekey key,data array r;
{extern int n;
if(n>=max) /*error table if full */
else r[n++].k=key;
}
```

This on executing, enables a

a) Basic sequential search
b) Binary search
c) Interpolation search
d) None

10. Find the outpur of the following C program

```
void f(char *p)
{p=(char *) malloc(6);
strcpy(p,"hello");
}

void main( )
{char *P="bye";
f(p);
printf("%s',p);
}
```


11. Time taken to access cache is 100ns and to access memory is 1000ns.
    Hit ratio given. Find the average access time

12. Path testing is

a) Black box testing strategy
b) White box testing strategy
c) An installation ....
d) An enviornment

13. X:verification' asks are we building the right product
    Y:validation' asks are we building the product right

14. Which one of the following can't be used to find an internet address given the domain name

a) /etc/host
b) NIS yellow pages
c) DNS
d) ARP

15. Flow control is necessary for the transport protocol layer due to the following reasons

a) Unreliable link
b) Congestion at receiver
c) Packets out of sequence
d) None of these

16. In public key encryption, if A wants to send a message to B so that no one else can read the message
    then A encrypts the message using

a) A's public key
b) A's private key
c) B's public key
d) B's private key

17. Which of the following is not condition having a deadlock resource previous granted
    can be forcebly taken away from a process

a) Resources need to be used in mutually exclusion fashion
b) Process can request new resources, as they continue to hold on to old ones
c) Here is a cycle in the resource allocation graph

16. An IP/IPX packet received by a computer using... having IP/IPX both how the packet is handled.

Ans. Read the, field in the packet header with to send IP or IPX protocol.

17. The range of the 32 bit number in two's complement form is _____

18. Cyclomatic complexity

```
{if((x=0) or (y=0))
p=0;
else
{p=x;i=1;
while(i!=y)
{p=p+x;
i=i+1; }
}
}
```

19. Activation record will contain the

a) Storage for simple names
b) Information about attributes for local names
c) Return address
d) All of the above

20. Global static variable within a file is intended to

a) Localize swap
b) Retain value persistently
c) Define constant
d) Fixed address in memory

21. Why is thread switch faster than a process switch

22. What is the binary equivalent of 41.6875

23. Checkpoint value will be calculated in

24. DHCP is used for

a) IP address allocation
b)dynamic host configuration protocol

25. For the following C program

```
int x(char *a)
{a=(char *) malloc(10*sizeof(char));
```

```
*a="hello";
}

main()
{char *a="new";
x(a);
printf("%s",a);
}
```

The output is

a) Hello
b) New
c) Hello new
d) Run time error

I2 TECHNOLOGIES

For details of the paper pattern click on the sample test below. The sample paper given here is only partial but most of the problems will be on these patterns. Further references and expected problems have also been mentioned in the sample paper.

Q1.Convert 0.9375 to binary

  a) 0.0111
  b) 0.1011
  c) 0.1111
  d) none

Ans. (c)

Q2.(1a00 * 10b)/ 1010 = 100

  a) a=0, b=0
  b)a=0, b=1
  c) none

Ans. (b)

Q3. In 32 bit memory machine 24 bits for mantissa and 8 bits for exponent. To increase the range of floating point.
  a) more than 32 bit is to be there.

b) increase 1 bit for mantissa and decrease 1 bit for exponent

c) increase 1 bit for exponent and decrease one bit for mantissa

Q4.In C, "X ? Y : Z " is equal to

  a) if (X==0) Y ;else Z

  b) if (X!=0) Y ;else Z

  c) if (X==0) Y ; Z

Ans. (b)

Q5. From the following program

```
        foo()
        int foo(int a, int b)
         {
           if (a&b) return 1;
           return 0;
         }
```

  a) if either a or b are zero returns always 0

  b) if both a & b are non zero returns always 1

  c) if both a and b are negative returns 0

Q6. The following function gives some error. What changes have to be made

```
        void ( int a,int b)
           {
               int t; t=a; a=b; b=t;
           }
```

  a) define void as int and write return t

  b) change everywhere a to *a and b to *b

Q7. Which of the following is incorrect

    a) if a and b are defined as int arrays then (a==b) can never be true

    b) parameters are passed to functions only by values

    c) defining functions in nested loops

Q8. include<stdio.h>

```
     void swap(int*,int*);
     main()
       {
          int arr[8]={36,8,97,0,161,164,3,9}
          for (int i=0; i<7; i++)
             {
             for (int j=i+1; j<8;j++)
             if(arr[i]<arr[j]) swap(&arr[i],&arr[j]);
             }
        }
```

```
void swap(int*x,int*y)
    {
        int temp; static int cnt=0;
        temp= *x;
        *x=*y;
        *y=temp;
        cnt++;
    }
```
What is cnt equal to

a) 7
b) 15
c) 1
d) none of these

Q9.   int main()
        {
            FILE *fp;
            fp=fopen("test.dat","w");
            fprintf(fp,'hello\n");
            fclose(fp);
            fp=fopen ("test.dat","w");
            fprintf (fp, "world");
            fclose(fp);
            return 0;
        }

If text.dat file is already present after compiling and execution how many bytes does the file occupy ?

a) 0 bytes
b) 5 bytes
c) 11 bytes
d) data is insufficient

Q10.   f1(int*x,intflag)
        int *y;
        *y=*x+3;
        switch(flag)
            {
                case 0:
                *x=*y+1;
                break;
                case 1:
                *x=*y;
                break;
```

```
            case 2:
             *x=*y-1;
             break;
          }
      return(*y)

       main()
       {
         *x=5;
         i=f1(x,0); j=f1(x,1);
         printf("%d %d %d ",i,j,*x);
       }
```

What is the output?

a) 8 8 8
b) 5 8 8
c) 8 5 8
d) none of these

Q12. A function is like this

```
   swap( int a,int b)
     {
        int temp;
        temp=a;
        a=b;<b
```

IBM
The written test consists of **two sections each of 45 minutes** duration.

Section#1
This is the **aptitude section** consisting of **45 questions** to be attempted in **45 minutes**.As
is in all the exams,this section is based on the **MBA pattern** of examination.

Section#2
This is the **technical section**.There is a **seperate paper for   hardware and
software**.**Candidates have to mention beforehand** whether they want to write the
software or the hardware paper.
This section also carries **45 questions** to be completed in **45   minutes**.

1. In 1978, a kg of paper was sold at Rs25/-.
   If the paper rate increases at 1.5% more than the inflation rate which is 6.5% a year,
   then what wil be the cost of a kg of paper after 2 years?

(a) 29.12
(b) 29.72
(c) 30.12
(d) 32.65
(e) none of these

2. In A,B,C are having some marbles with each of them.
   A has given B and C the same number of marbles each of them already have.
   Then, B gave C and A the same number of marbles they already have.
   Then C gave A and B the same number of marbles they already have.
   At the end A,B,and C have equal number of marbles.

(i) If x,y,z are the marbles initially with A,B,C respectively.
   Then the number of marbles B have at the end

(a) 2(x-y-z)
(b) 4(x-y-z)
(c) 2(3y-x-z)
(d) x + y-z

Ans. (c)

(ii) If the total number of marbles are 72, then the number of marbles with A at the starting

(a) 20
(b) 30
(c) 32
(d) 39

Ans. (d)

3. If a car starts from A towards B with some velocity.
   Due to some problem in the engine after travelling 30km, the car goes with 4/5 th of its actual velocity
   The car reaches B 45 min later to the actual time.
   If the car engine fails ofter travelling 45km, the car reaches the destination B 36min late to the actual time
   What is the initial velocity of car and what is the distance between A and B in km

Ans. 20 & 130.

4. A person has Rs 100/- in his pocket, he can as 25 pencils or 15 books.

He kept 15% of the money for travelling expenses and purchased 5 pencils.
So how many books he can purchase with the remaining money.

5. Ten questions on analogies.

eg: chief : tribe :: governer : state
epaulette : shoulder :: tiara : head
guttural : throat :: gastric : stomach
inept : clever :: languid : active
knife : butcher ::
hammer : carpenter ::

6. The values of shares (in Rs).of A, B and C from January to June are as follows.

Month	A	B	C
January	30	60	80
February	35	65	85
March	45	75	65
April	40	75	82
May	55	75	85
June	50	75	80

i) During this period which share has undergone maximium fluctuation?
ii) In which month it is possible to buy B and C selling A?
iii) In which month the share values are very low?
iv) By purchasing one share of A and 4 each of B and C in the beginning of the period,
when shoudl these be sold to get maximum profit?

7. In a computer institute 9 languages can be taught.
The module is of 6 months duration and of the six languages only one can be taught
each month .
In addition to that BASIC is always taught and should be in first month itself

- WORD PERFECT is to be taught in the preceeding week of WORD STAR.
- FORTRAN can not be taught until COBAL is taught prior to that
- BINO, FIFO can never be taught in single module

languages are BASIC, WORD STAR, WORD PERFECT, FORTRAN, COBAL, BINO,
FIFO, LOTUS, C

i) If word star is in 3rd month , what could be in 6th month.
ii) If COBAL is in the 2nd month and BINO in 6th month. FORTRAN will be taught in which month.

8. In a class, except 18 all are above 50 years.
   15 are below 50 years of age. How many people are there

(a) 30
(b) 33
(c) 36
(d) none of these.

Ans. (d)

9. A square plate of some size is cut at four corners. Equal squares of the same size are cut and is formed as open box.
   If this open box carries 128 ml of oil. What is the size of the side of the plate?

(a) 17
(b) 14
(c) 13
(d) None of these

10. In a square, all the mid points are joined. The inner square is shaded.
    If the area of the square is A, what is the area of the shaded area?

11. Two questions on basic angles i.e given a circle, a few chords or diameter is drawn etc.

12. If the follwoing statements are given

- @(a,b)= (a+b)/2
- /(a,b)= a/b
- *(a,b)= ab

If a=1, b=2 then find

i) /(a,(@(a,b),*(a,b)))

ii) */(a,@(*(a,b)))

13. If the follwoing statements are given

- (x#y) = x + y- xy
- (x*y) = (x + y)/2

i) Find the values of x, y will satisfy this equation (x#y)#(x*y) < (x#y)
ii) Find the values of x, y will satisfy this equation (a*b)#(b*c)< (a#b)*(b*c)

14. Export PS1 results in(PS1 pwd)

a) primary prompt being your current directory
b) primary prompt and secondary prompts being the current directory
c) primary prompt prompt being your home directory
d) primary prompt and secondary prompts being the home directory
e) None of the above.

15. If you type in the command

nohup sort employees > list 2 > error out &

and log off ,the next time you log in, the output will be

a) in a file called list and the error will de typed in a file error out
b) there will be no file called list or error out
c) error will be logged in a file called list and o/p will be in error out
d) you will not be allowed to log in
e) none of the above

16. In UNIX a files i-node ......?

Ans. Is a data structure that defines all specifications of a file like the file size, number of lines to a file, permissions etc.

17. 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) deos not allow calling one program from with in another
e) all of the above

Ans. (b)

18. 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

19. 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)

20. 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)

21. What is the ouptut in the following program

```
main()
{char c=-64;
int i=-32
unsigned int u =-16;
if(c>i)
{printf("pass1,");
if(c<u)
printf("pass2");
else
printf("Fail2");
}
else
printf("Fail1);
if(i<u)
printf("pass2");
else
printf("Fail2")
}
```

a) Pass1,Pass2
b) Pass1,Fail2
c) Fail1,Pass2
d) Fail1,Fail2
e) None of these

Ans. (c)

22. In the process table entry for the kernel process, the process id value is

(a) 0
(b) 1
(c) 2
(d) 255
(e) it does not have a process table entry

Ans. (a)

23. Which of the following API is used to hide a window

a) ShowWindow
b) EnableWindow
c) MoveWindow
d) SetWindowPlacement
e) None of the above

24. What will the following program do?

```
void main()
{
int i;
char a[]="String";
char *p="New Sring";
char *Temp;
Temp=a;
a=malloc(strlen(p) + 1);
strcpy(a,p); //Line number:9//
p = malloc(strlen(Temp) + 1);
strcpy(p,Temp);
printf("(%s, %s)",a,p);
free(p);
free(a);
} //Line number 15//
```

a) Swap contents of p & a and print:(New string, string)
b) Generate compilation error in line number 8
c) Generate compilation error in line number 5
d) Generate compilation error in line number 7
e) Generate compilation error in line number 1

25. In the following code segment what will be the result of the function,

```
value of x , value of y
{unsigned int x=-1;
int y;
y = ~0;
if(x == y)
printf("same");
else
printf("not same");
}
```

a) same, MAXINT, -1
b) not same, MAXINT, -MAXINT
c) same , MAXUNIT, -1

d) same, MAXUNIT, MAXUNIT

e) not same, MAXINT, MAXUNIT

Ans. (a)

26. PATH = /bin : /usr : /yourhome
    The file /bin/calender has the following line in it

cal 10 1997

The file /yourhome/calender has the following line in it

cal 5 1997

If the current directory is /yourhome and calender is executed

a) The calendar for May 1997 will be printed on screen
b) The calendar for Oct 1997 will be printed on screen
c) The calendar for the current month(whatever it is) will be printed
d) Nothing will get printed on screen
e) An error massage will be printed

27. What will be the result of the following program ?

```
char *gxxx()
{static char xxx[1024];
return xxx;
}

main()
{char *g="string";
strcpy(gxxx(),g);
g = gxxx();
strcpy(g,"oldstring");
printf("The string is : %s",gxxx());
}
```

a) The string is : string
b) The string is :Oldstring
c) Run time error/Core dump
d) Syntax error during compilation
e) None of these

Ans. (b)

28. What will be result of the following program?

```
void myalloc(char *x, int n)
{x= (char *)malloc(n*sizeof(char));
memset(x,\0,n*sizeof(char));
}

main()
{char *g="String";
myalloc(g,20);
strcpy(g,"Oldstring");
printf("The string is %s",g);
}
```

a) The string is : String
b) Run time error/Core dump
c) The string is : Oldstring
d) Syntax error during compilation
e) None of these

29. Which of the following function is used to repaint a window immediately

a) Sendmessage(hWnd,WM_PAINt,......)
b) InvalidateRect(.......)
c) MoveWindow
d) WM_COPY
e) None

30. Which function is the entry point for a DLL in MS Windows 3.1

a) Main
b) Winmain
c) Dllmain
d) Libmain
e) None

Ans. (b)

31. The standard source for standard input, standard output and standard error is

a) the terminal
b) /dev/null

c) /usr/you/input, /usr/you/output/, /usr/you/error respectively
d) None

Ans. (a)

32. What will be the result of the following program?

```
main()
{char p[]="String";
int x=0;
if(p=="String")
{printf("Pass 1");
if(p[sizeof(p)-2]=='g')
printf("Pass 2");
else
printf("Fail 2");
}
else
{
printf("Fail 1");
if(p[sizeof(p)-2]=='g')
printf("Pass 2");
else
printf("Fail 2");
}
}
```

a) Pass 1, Pass 2
b) Fail 1, Fail 2
c) Pass 1, Fail 2
d) Fail 1, Pass 2
e) syntax error during compilation

33. Which of the choices is true for the mentioned declaration ?

const char *p;
and
char * const p;

a) You can't change the character in both
b) First : You can't change the characterr & Second : You can;t change the pointer
c) You can't change the pointer in both
d) First : You can't change the pointer & Second : You can't chanage the character
e) None

34. The redirection operators > and >>

a) do the same function
b) differ : > overwrites, while >> appends
c) differ : > is used for input while >> is used for output
d) differ : > write to any file while >> write only to standard output
e) None of these

Ans. (b)

35. The command grep first second third /usr/you/myfile

a) prints lines containing the words first, second or third from the file /usr/you/myfile
b) searches for lines containing the pattern first in the files
second, third, and /usr/you/myfile and prints them
c) searches the files /usr/you/myfiel and third for lines containing the words first or
second and prints them
d) replaces the word first with the word second in the files third and /usr/you/myfile
e) None of the above

Ans. (b)

There are **two rounds** of interviews,viz.,the **technical** and and the **HR** round.

Technical and Personal Round for Software Candidates
Mainly subjective questions in C,Operating Systems,DBMS,Data Structures are asked
interspersed with some on the candidate's personal background.

Typical questions in C and Data Structures
1.WAP to interchange 2 variables without using the third one.
2.Explain quick sort and merge sort algorithms amn derive the time-constraint relation
for these.
3.Explain binary searching,fibonacci search.
4.General questions on binary trees,transversals
5.General questions on graphs and their representation.

Typical Questions on Operating Systems
1.Demand paging,page faults,replacement algos,thrashing,etc.
2.Paged segmentation and segment paging.

HR Round for Software Candidates
In this section, **case studies are presented** are presented before the candidate to percieve
his reaction and his/her **communication skills are tested**. *IBM expects teamwork and*

teamspirit from the candidates and their answers should reflect this attitude.

Typical question is:
You are a project manager of a big multinational project.There is a person X, assigned to you who has the best technical skills required for the project,even better than you.But he wishes to be the project manager ,which the management does not permit,due to which he threatens to quit.All others in the group are not as competent.Talk yourself out of this situation pretending that the interviewer is the disgruntled employee and explain the neceessary action.

IMR GLOBAL

The Paper is **Aptitude Type** .
The **Aptitude paper** is based on the GRE pattern and consists of analogies, reading comprehension, passages etc. There is more than one paper pattern and the other patterns may have questions on series and logical reasoning.

The **Technical paper** is same for all patterns .The important subjects are C, computer architecture , operating systems, microprocessors , etc.

Q. A man leaves office daily at 7pm A driver with car comes from his home to pick him from office and bring back home
One day he gets free at 5:30 and instead of waiting for driver he starts walking towards home.
In the way he meets the car and returns home on car He reaches home 20 minutes earlier than usual.
In how much time does the man reach home usually??

Ans. 1hr 20min

Q The following truth table is given What is Y equal to??

A	B	C	Y
0	0	0	1
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	1
1	1	1	1

Ans. (A')(B')(AB) , where ' stands for complement.

Q. A works thrice as much as B. If A takes 60 days less than B to do a work then find the number of days it would take to   complete the work if both work together?

Ans. 22½days

Q. How many 1's are there in the binary form of 8*1024 + 3*64 + 3

Ans. 4

Q. In a digital circuit which was to implement (A B) + (A)XOR(B), the designer implements (A B) (A)XOR(B)
**   What is the probability of error in it ?**

Q. A boy has Rs 2. He wins or loses Re 1 at a time If he wins he gets Re 1 and if he loses the game he loses Re 1.
**   He can loose only 5 times. He is out of the game if he earns Rs 5.**
**   Find the number of ways in which this is possible?**

Ans. 16

Q. If there are 1024*1280 pixels on a screen and each pixel can have around 16 million colors
**   Find the memory required for this?**

Ans. 4MB

Q. On a particular day A and B decide that they would either speak the truth or will lie.
**   C asks A whether he is speaking truth or lying?**
**   He answers and B listens to what he said. C then asks B what A has said B says "A says that he is a liar"**
**   What is B speaking ?**

(a) Truth
(b) Lie
(c) Truth when A lies
(d) Cannot be determined

Ans. (b)

Q. What is the angle between the two hands of a clock when time is 8:30

Ans. 75(approx)

Q. A student is ranked 13th from right and 8th from left. How many students are there in totality ?

Q. A man walks east and turns right and then from there to his left and then 45degrees to
  his right.In which direction did he go

Ans. North west

Q. A student gets 70% in one subject, 80% in the other. To get an overall of 75% how much should get in third subject.

Q. A man shows his friend a woman sitting in a park and says that she the daughter of my grandmother's only son.
   What is the relation between the two

Ans. Daughter

INFOSYS

The written paper consists mainly of puzzles followed by an essay. There are **10 puzzles to be completed within one hour** and a **short essay (usually based on the trends in the computer field) of 15 minutes**. We suggest that after going through the sample tests given below you also take time to go through some puzzle books like "Puzzles and teasers by **George W. Summers** " ,"**Shakuntla Devi**'s Puzzle books" , "Mind Stretching Puzzles by **Stickles**" etc.
       We give you some test papers, which consists of more than ten questions, which are selected from the above mentioned books and from older question papers. The paper can be **attended by students from all engineering streams** .

The written test consists of **two sections each of 45 minutes** duration.

Section#1
This is the **aptitude section** consisting of **45 questions** to be attempted in **45 minutes**.As is in all the exams,this section is based on the **MBA pattern** of examination.

Section#2
This is the **technical section**.There is a **seperate paper for   hardware and software**.**Candidates have to mention beforehand** whether they want to write the software or the hardware paper.
This section also carries **45 questions** to be completed in **45   minutes**.

1. At 6'o a clock ticks 6 times.
   The time between first and last ticks is 30 seconds.
   How long does it tick at 12'o clock.

Ans: 66 sec.   (2 marks)

2. Three friends divided some bullets equally.
   After all of them shot 4 bullets the total number of bullets remaining is equal to the bullets each had after division.
   Find the original number divided.

Ans: 18   (2 marks)

Initially .   x   x   x
Now   x-4   x-4   x-4
Equation is   3x-12 = x

3. A ship went on a voyage.
   After it had travelled 180 miles a plane statrted with 10 times the speed of the ship.
   Find the distance when they meet from starting point.

Ans: 200miles.   (2 marks)
    Distance travelled by plane = 1/10 distance travelled by ship + 180

4. Complete the Table given below:

   Three football teams are there. Given below is the group table. Fill in the x's

	Played	Won	Lost	Draw	Goals For	Goals Against
A	2	2	x	x	x	1
B	2	x	x	1	2	4
C	2	x	x	x	3	7

Ans: The filled table is given below   (4 marks)

	Played	Won	Lost	Draw	Goals For	Goals Against
A	2	2	0	0	7	1

B	2	0	1	1	2	4
C	2	0	1	1	3	7

5. There are 3 societies A, B, C.
   A lent cars to B and C as many as they had already.
   After some time B gave as many tractors to A and C
as many as they have. After sometime c did the same thing. At the end of this transaction
each one of them had 24.
Find the cars each orginally had.

Ans: A had 39 cars, B had 21 cars & C had 12 cars   (4 marks)

6. There N stations on a railroad.
   After adding X stations on the rail route 46 additional tickets have to be printed.
   Find N and X.

Ans. x=2 and N=11

Let initially, N(N-1) = t
After adding, (N+X)(N+X-1) = t+46
By trail and error method   (4 marks)

7. Given that April 1 is tuesday.
   A, B, C are 3 persons told that their farewell party was on

   * A - May 8, thursday
   * B - May 10,tuesday
   * C - June 5, friday

Out of A, B, C only one made a completetly true statement concerning date,day and
month
The other told two one told the day right and the other the date right..
What is correct date, month, day.

Ans: B - (May 10) SUNDAY
       C - June 6 (Friday).   (5 marks)

8. The Bulls, Pacers, Lakers and Jazz ran for a contest.
   Anup, Sujit, John made the following statements regarding results.

- Anup said either Bulls or Jazz will definitely win
- Sujit said he is confident that Bulls will not win
- John said he is confident that neither Jazz nor Lakers will win

When the result cameit was found that only one of the above three had made a correct statement.
Who has made the correct statement and who has won the contest.

Ans: Sujith; Lakers   (5marks)

9. Five people A ,B ,C ,D ,E are related to each other.
   Four of them make one true statement each as follows.

(i) B is my father's brother.
(ii) E is my mother-in-law.
(iii)C is my son-in-law's brother
(iv)A is my brother's wife.

Ans: (i) D
     (ii) B
     (iii) E
     (iv) C   (10 marks)

10. Some statements are given below:

- L says all of my other four friends have money
- M says that P said that exactly one among them has money
- N says that L said that precisely two among them have money
- O says that M said that three of the others have money
- P, L and N said that they have money

All the above statement are false..
Who has money & who doesn't have any money?

(5 marks)

2

Mr.Mathurs jewels have been stolen from his bank locker .
   The bank has lockers of 12 people which are arranged in an array of 3 rows and 4 columns like:

| 1 | 2 | 3 | 4 |

5	6	7	8
9	10	11	12

- The locker belonging to JONES was to the right of BLACK'S locker and directly above MILLAR'S.
- BOOTH'S locker was directly above MILLAR'S.
- SMITH'S locker was also above GRAY's (though not directly).
- GREEN'S locker was directly below SMITH'S.
- WILSON'S locker was between that of DAVIS and BOOTH.
- MILLAR'S locker was on the bottom row directly to the right of HERD'S.
- WHITE'S locker was on the bottom right hand corner in the same column as BOOTH'S.

Which box belonged to Mr.Mathurs?

Ans: Box number 9 belongs to Mr.Mathurs.

2. Fifty minutes ago if it was four times as many minutes past three o'clock,how many minutes is it to six o'clock?

Ans: Twenty six minutes.

3. If a clock takes 7seconds to strike 7, how long will the same clock take to strike 10?

Ans: The clock strikes for the first time at the start and takes 7 seconds for 6 intervals-thus for one interval time
    taken=7/6.
    Therefore, for 10 seconds there are 9 intervals and time taken is 9*7/6=10 and 1/2 seconds.

4. Three criminals were arrested for shop lifting.
    However, when interrogated only one told the truth in both his statements, while the other two each told one true
    statement and one lie.
    The statements were:

- **ALBERT** :(a)Chander passed the merchandise. (b)Bruce created the diversion.
- **BRUCE**   :(a)Albert passed the merchandise.   (b)I created the diversion.
- **CLIVE**   :(a)I took the goods out of the shop.   (b)Bruce passed them over.

Ans: Albert passed the goods.Bruce created the diversion..Clive took the goods out of the shop.

5. Everyday in his business a merchant had to weigh amounts from 1 kg to 121 kgs, to the nearest kg.
   What are the minimum number of weight required and how heavy should they be?

Ans: .The minimum number is 5 and they should weigh 1,3,9,27 and 81 kgs.

6. A hotel has 10 storeys.Which floor is above the floor below the floor, below the floor above the floor, below the
   floor above the fifth.

Ans: The sixth floor.

7. Seven members sat around a table for three days for a conference.
   The member's names were Abhishek, Amol, Ankur, Anurag,Bhuwan ,Vasu and Vikram.
   The meetings were chaired by Vikram.
   On the first evening members sat around the table alphabetically.
   On the following two nights, Vikram arranged the seatings so that he could have Abhishek as near to him as
   possible and abesent minded Vasu as far away as he could.
   On no evening did any person have sitting next to him a person who had previously been his neighbour.
   How did Vikram manage to seat everybody to the best advantage on the second and third evenings?

Ans:
Second evening:Vikram,Ankur,Abhishek,Amol,Vasu,Anurag and Bhuwan.
Third evening   :Vikram,Anurag,Abhishek,Vasu,Bhuwan,Ankur,Amol.

8. Two trains start from stations A and B spaced 50 kms apart at the same time and speed.
   As the trains start, a bird flies from one train towards the other and on reaching the second train, it flies back to the
   first train.This is repeated till the trains collide.
   If the speed of the trains is 25 km/h and that of the bird is 100km/h.
   How much did the bird travel till the collision.

Ans: 100 kms.

9. Four prisoners escape from a prison.
   The prisoners, Mr East, Mr West, Mr South, Mr North head towards different

directions after escaping.
   The following information of their escape was supplied:

- The escape routes were The North Road, South Road, East Road and West Road.
- None of the prisoners took the road which was their namesake.
- Mr.East did not take the South Road
- Mr.West did not the South Road.
- The West Road was not taken by Mr.East

What road did each of the prisoners take to make their escape?

Ans: Mr.East took the North Road
     Mr.West took the East Road
     Mr.North took the South Road
     Mr.South took the West Road.

10. Complete the series:
    5, 20, 24, 6, 2, 8, ?

Ans: 12 (as 5*4=20, 20+4=24, 24/4=6, 6-4=2, 2*4=8, 8+4=12).

3

1) A man collects cigarette stubs and makes one full cigarette with every 8 stubs.
   If he gets 64 stubs how many full cigarettes can he smoke.

Ans: 8+1=9

2) A soldier looses his way in a thick jungle. At random he walks from his camp but
mathematically in an interesting fashion. First he walks one mile East then half mile to
North. Then 1/4 mile to West, then 1/8 mile to South and so on making a loop.
Finally how far he is from his camp and in which direction.

Ans: Distance travelled in north and south directions
     1/2 - 1/8 + 1/32 - 1/128 + 1/512 - and so on
     = 1/2/((1-(-1/4))
    Similarly in east and west directions
     1- 1/4 + 1/16 - 1/64 + 1/256 - and so on
     = 1/((1- (- 1/4))
Add both the answers

3) How can 1000000000 be written as a product of two factors neither of them
containing zeros

4) Conversation between two mathematcians:

First : I have three childern. The product of their ages is 36.

If you sum their ages, it is exactly same as my neighbour's door number on my left.
The second mathematician verfies the door number and says that it is not sufficient.
Then the first says " Ok one more clue is that my youngest is really the youngest".
Immmediately the second mathematician answers .
Can you answer the question asked by the first mathematician?
What are the childeren ages?

Ans 1,6 and 6

5) Light glows for every 13 seconds . How many times did it glow between 1:57:58 and 3:20:47 am.

Ans : 383 + 1 = 384

6) 500 men are arranged in an array of 10 rows and 50 columns according to their heights.

Tallest among each row of all are asked to fall out.

And the shortest among them is A.

Similarly after resuming that to their original podsitions that the shortest among each column are asked to fall out.

And the tallest among them is B .

Now who is taller among A and B ?

Ans A

7) A person with some money spends1/3 for cloths, 1/5 of the remaining for food and 1/4 of the remaining for travel.

He is left with Rs 100/- .

How much did he have with him in the begining ?

Ans: Rs 250/-

8) There are six boxes containing 5 , 7 , 14 , 16 , 18 , 29 balls of either red or blue in colour.

Some boxes contain only red balls and others contain only blue.

One sales man sold one box out of them and then he says

" I have the same number of red balls left out as that of blue ".
Which box is the one he solds out ?

Ans: Total no of balls = 89 and (89-29 /2) = 60/2 = 30
and also 14 + 16 = 5 + 7 + 18 = 30

9) A chain is broken into three pieces of equal lenths containing 3 links each.
It is taken to a backsmith to join into a single continuous one .
How many links are to to be opened to make it ?

Ans : 2.

10) Grass in lawn grows equally thick and in a uniform rate.
It takes 24 days for 70 cows and 60 days for 30 cows to eat the whole of the grass.
How many cows are needed to eat the grass in 96 days.?

Ans : 20
g - grass at the beginning
r - rate at which grass grows, per day
y - rate at which one cow eats grass, per day
n - no of cows to eat the grass in 96 days
g + 24*r = 70 * 24 * y
g + 60*r = 30 * 60 * y
g + 96*r = n * 96 * y
Solving, n = 20.

Section B

1. Replace each letter by a digit.
   Each letter must be represented by the same digit and no beginning letter of a word can be 0.

```
O N E
O N E
O N E
O N E
-------
T E N
```

Ans: 0 =1, N = 8 ,E = 2, T = 7

2. Ann, Boobie, Cathy and Dave are at their monthly business meeting.
   Their occupations are author, biologist, chemist and doctor, but not necessarily in that order.
   Dave just told the biologist that Cathy was on her way with doughnuts.
   Ann is sitting across from the doctor and next to the chemist.
   The doctor was thinking that Boobie was a goofy name for parent's to choose,but didn't say anything.
   What is each person's occupation?

Ans: Since Dave spoke to the biologist and Ann sat next to the chemist and across the doctor, Cathy must be the author
      and Ann the biologist.
      The doctor didn't speak, but David did, so Bobbie is the doctor and Dave the chemist.

3. Sometime after 10:00 PM a murder took place.
   A witness claimed that the clock must have stopped at the time of the shooting.
   It was later found that the postion of both the hands were the same but their positions had interchanged.
   Tell the time of the shooting (both actual and claimed).

Ans: Time of shooting = 11:54 PM
     Claimed Time   = 10:59 PM

4. Next number in the series is
     1 , 2 , 4 , 13 , 31 , 112 , ?

Ans: 224.
     No number has digits more than 4. All of them are 1 , 2, 4, 8 , 16 , 32 , 64 converted to numbers in base 5

5. Shahrukh speaks truth only in the morning and lies in the afternoon, whereas Salman speaks truth only in the afternoon.   A says that B is Shahrukh. Is it morning or afternoon and who is A - Shahrukh or Salman.

Ans: Afternoon ; A is Salman.

6. Two trains starting at same time, one from Bangalore to Mysore and other in opposite direction arrive at their
   destination 1 hr and 4 hours respectively after passing each other. How nuch faster is one train from other?

Ans: Twice

7. There are 6 volumes of books on a rack kept in order (ie vol.1, vol. 2 and so on).
   Give the position after the following changes were noticed.

   - All books have been changed
   - Vol.5 was directly to the right of Vol.2
   - Vol.4 has Vol.6 to its left and both weren't at Vol.3's place
   - Vol.1 has Vol.3 on right and Vol.5 on left
   - An even numbered volume is at Vol.5's place

Find the order in which the books are kept now.

Ans: 2 , 5 , 1 , 3 , 6 , 4

8. I bought a car with a peculiar 5 digit numbered licence plate which on reversing could still be read.
   On reversing value is increased by 78633.Whats the original number if all digits were different?

Ans: Only 0 1 6 8 and 9 can be readupside down.So on rearranging these digits we get the answer as 10968

9. The shape in the sketch below is that of a square attached to half of a similar square.Divide it into four equal pieces

10. Supposing a clock takes 7 seconds to strike 7. How mlong will it take to strike 10?

Ans: 10 1/2 seconds.

4

1. Father's age is three years more than three times the son's age.
   After three years, father's age will be ten years more than twice the son's age.
   What is the father's present age.

Ans: 33 years.   (2 marks)

2. Find the values of each of the alphabets.

```
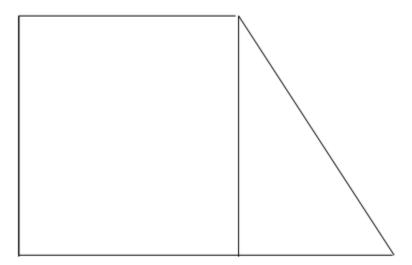    N O O N
    S O O N
+ M O O N
  ----------
    J U N E
```

Ans: 9326   (2 marks)

3. There are 20 poles with a constant distance between each pole
   A car takes 24 second to reach the 12th pole.
   How much will it take to reach the last pole.

Ans: 41.45 seconds   (2 marks)
   Let the distance between two poles = x
    Hence 11x:24::19x:?

4. A car is travelling at a uniform speed.
   The driver sees a milestone showing a 2-digit number.
   After travelling for an hour the driver sees another milestone with the same digits in reverse order.
   After another hour the driver sees another milestone containing the same two digits.
   What is the average speed of the driver.

Ans: 45 kmph   (4 marks)

5. The minute and the hour hand of a watch meet every 65 minutes.
   How much does the watch lose or gain time and by how much?

Ans: Gains; 5/11 minutes   (4 marks)

6. Ram, Shyam and Gumnaam are friends.
   Ram is a widower and lives alone and his sister takes care of him.
   Shyam is a bachelor and his neice cooks his food and looks after his house.
   Gumnaam is married to Gita and lives in large house in the same town.
   Gita gives the idea that all of them could stay together in the house and share monthly expenses equally.
   During their first month of living together, each person contributed Rs.25.
   At the end of the month, it was found that Rs 92 was the expense so the remaining amount was distributed equally
   among everyone.
   The distribution was such that everyone recieved a whole number of Rupees.
   How much did each person recieve?

Ans. Rs 2   (4 marks)
   (Hint: Ram's sister, Shyam's neice and Gumnaam's wife are the same person)

7. Four persons A, B, C and D are playing cards.
   Each person has one card, laid down on the table below him, which has two different colours on either side.

The colours visible on the table are Red, Green, Red and Blue.
They see the color on the reverse side and give the following comment.

A: Yellow or Green
B: Neither Blue nor Green
C: Blue or Yellow
D: Blue or Yellow

Given that out of the 4 people 2 always lie find out the colours on the cards each person.

Section B

1. From a vessel, 1/3rd of the liquid evaporates on the first day.
   On the second day 3/4th of the remaining liquid evaporates.
   What fraction of the volume is present at the end of the second day.

Ans: 50%

2. An orange glass has orange juice and white glass has apple juice both of equal volumes.
   50ml of the orange juice is taken and poured into the apple juice.
   50ml from the white glass is poured into the orange glass.
   Of the two quantities, the amount of apple juice in the orange glass and the amount of orange juice in the white glass,   which one is greater and by how much?

Ans: The two quantities are equal

3. There is a 4 inch cube painted on all sides.
   This is cut down into of 1 inch cubes.
   What is the no of cubes which have no pointed sides.

Ans: 8

4. Sam and Mala have a conversation.

   - Sam says I am certainly not over 40
   - Mala says I am 38 and you are atleast 5 years older than me
   - Now Sam says you are atleast 39

All the statements by the two are false.
How old are they really?

Ans: Mala = 38 yrs
     Sam = 41 yrs.

5. Ram Singh goes to his office in the city, every day from his suburban house.
   His driver Gangaram drops him at the railway station in the morning and picks him up in the evening.
in the evening.
   Every evening Ram Singh reaches the station at 5 O' Clock.
   Gangaram also reaches at the same time.
   One day Ram Singh started early from his office and came to the station at 4 O' Clock.
   Not wanting to wait for the car he starts walking home. Mangaram starts at normal time, picks him up on the way
time, picks him up on the way
   and takes him back house, half an hour early.
How much time did Ram Singh walk?

6. In a railway station, there are two trains going.
   One in the harbour line and one in the main line, each having a frequency of 10 minutes.
minutes.
   The main line service starts at 5 o'clock and the harbour line starts at 5.02A.M.
   A man goes to the station every day to catch the first train that comes.
   What is the probability of the man catching the first train?

Ans: 0.8

7. A family X went for a vacation.
   Unfortunately it rained for 13 days when they were there.
   But whenever it rained in the mornings, they had clear afternoons and vice versa.
   In all they enjoyed 11 mornings and 12 afternoons.
   How many days did they stay there totally?

Ans: 18

8. A survey was taken among 100 people to find their preference of watching T.V. programmes.
   There are 3 channels. Given the no of people who watch

   - at least channel 1
   - at least channel 2
   - at least channel 3
   - no channels at all
   - atleast channels 1and 3
   - atleast channels 1 and 2
   - atleast channels 2 and 3

Find the no of people who watched all three.

9. Albert and Fernandes have two leg swimming race.
   Both start from opposite ends of the pool.
   On the first leg, the boys pass each other at 18 m from the deep end of the pool.

During the second leg they pass at 10 m from the shallow end of the pool.
Both go at constant speed but one of them is faster.
Each boy rests for 4 seconds at the end of the first leg.
What is the length of the pool?

10. Each alphabet stands for one digit in the following multiplication.

```
   T H I S
   x   I S
   ---------
   X F X X
   X X U X
------------
X X N X X
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What is the maximum value T can take?

5

.An escalator is descending at constant speed.
  A walks down and takes 50 steps to reach the bottom.
  B runs down and takes 90 steps in the same time as A takes 10 steps.
  How many steps are visible when the escalator is not operating?

Ans: 150 steps

2. Every day a cyclist meets a train at a particular crossing.
   The road is straight before the crossing and both are travelling in the same direction.
   The cyclist travels with a speed of 10 Kmph.
   One day the cyclist comes late by 25 min. and meets the train 5km before the crossing.
   What is the speed of the train?

Ans: 60 kmph

3. There are five persons with surnames Mukherjee, Misra, Iyer, Patil and Sharma.
   There are 4 persons having first or middle name of Kumar, 3 persons with Mohan, 2 persons with Dev and 1 Anil.
   Either Mukherjee and Patil have a first or middle name of Dev or Misra and Iyer have their first or middle name of Dev.
   Of Mukherkjee and Misra, either both of them have a first or middle name of Mohan or neither have a first or
   middle name of Mohan.
   Either Iyer or Sharma has a first or middle name of Kumar but not both.
   Who has the first or middle name of Anil?

4. Boys are allowed to watch football at C.V.Raman auditorium subjected to conditions.

   - The boy over age 16 can wear overcoat
   - No boy over age 15 can wear cap
   - To watch the football either he has to wear overcoat or cap or both
   - A boy with an umberella or above 16 or both cannot wear sweater.
   - Boys must either not watch football or wear sweater.

   What is the appearence of the boy who is watching football.

5. A bird keeper has got P pigeons, M mynas and S sparrows.
   The keeper goes for lunch leaving his assistant to watch the birds.

   - Suppose p=10, m=5, s=8 when the bird keeper comes back, the assistant informs the x birds have escaped. The bird keeper exclaims: "Oh no! All my sparrows are gone."
     How many birds flew away?
   - When the bird keeper comes back, the assistant told him that x birds have escaped. The keeper realised that atleast 2 sparrows have escaped.
     What is minimum no of birds that can escape?

6. Answer the following questions based on the conditions from the choices A, B, C, D, E as described below:
(A) if a definete conclusion can be drawn from condition 1
(B) if a definete conclusion can be drawn from condition 2
(C) if a definete conclusion can be drawn from condition 1 and 2
(D) if a definete conclusion can be drawn from condition 1 or 2
(E) no conclusion can be drawn using both conditions

   - person 1 says N<5
   - person says N>5
   - person 3 says 3N>20
   - person 4 says 3N>10
   - person 5 says N<8

What is the value of N?

a) 1. No of persons who speak false being less than no of persons who tells the truth.

2. Person 2 is telling the truth.

b) 1. no of persong telling the truth is greater than no of persons telling lies
   2. person 5 is telling the truth.

7. There are N coins on a table and there are two players A & B.
   You can take 1 or 2 coins at a time.
   The person who takes the last coin is the loser.
   A always starts first.

   - If N=7
     (a) A can always win by taking two coins in his first chanse
     (b) B can win only if A takes two coins in his first chance.
     (c) B can always win by proper play
     (d) none of the above
   - 2. A can win by proper play if N is equal to
     (a) 13 (b) 37 (c) 22 (d) 34 (e) 48
     Ans: (e.)
   - 3. B can win by proper play if N is equal to
     (a) 25 (b)26 (c) 32 (d) 41 (e) none
   - 4. if N<4, can A win by proper play always?
     (a) Yes (b) No

8. Two twins have vertain peculiar charcteristics.
   One of them always lies on Monday, Wednesday, Friday.
   The other always lies on Tuesdays, Thursdays and Saturdays.
   On the other days they tell the truth. You are given a conversation.

   - Person A-- today is Sunday my name is Anil
   - Person B -- today is Tuesday, my name is Bill

What day is today?

Ans: Today is Tuesday.

9. There is a safe with a 5 digit number as the key.
   The 4th digit is 4 greater than second digit, while 3rd digit is 3 less than 2nd digit.
   The 1st digit is thrice the last digit.
   There are 3 pairs whose sum is 11.
   Find the number.

Ans: 65292

10. A hotel has two wings,the east wing and the west wing.
    Some east wing rooms but not all have an ocean view.
    All west wing rooms have a harbour view.
    The charge for all rooms is identical, except as follows :

- Extra charge for all harbour view rooms on or above the 3rd floor
- Extra charge for all ocean view rooms except those without balcony
- Extra charge for some harbour rooms on the first two floor & some east wing rooms without ocean view but
  having kitchen facilities.

Which of the following cannot be determined on the basis of the nformation given:

I. Whether there are any rooms without a balcony for which an extra charge is imposed.
II. Whether any room without a kitchen or a view involves an extra charge.
III. Whether two extra charges are impsed for any room.

(A) I only
(B) II only
(C) III only
(D) II and III only
(E) I, II and III

(This question is from 1999 Barrons GRE Guide model Test 3 - section 6, question 22)

Ans: (A)

6

. Three friends divided some bullets equally. After all of them shot 4 bullets the total number of bullets remaining is equal to the bullets each had after division. Find the original number divided.

 Ans: 18   (Initially . x   x   x
          Now   x-4   x-4   x-4) Equation is   3x-12 = x

2. A ship went on a voyage. After it had traveled 180 miles a plane started with 10 times the speed of the ship.
   Find the distance when they meet from starting point.
         Ans: 200miles.   (Distance traveled by plane = 1/10 distance traveled by ship + 180)

3. Replace each letter by a digit. Each letter must be represented by the same digit and no beginning letter of a word can be 0.
       O N E
       O N E

```
O N E
O N E
T E N
```
   Ans: O =1, N = 8 ,E = 2, T = 7

4. In a railway station, there are two trains going. One in the harbor line and one in the main line, each having a frequency of 10 minutes. The main line service starts at 5 o'clock and the harbor line starts at 5.02A.M. A man goes to the station every day to catch the first train that comes. What is the probability of the man catching the first train?
   Ans: 0.8

5. Next number in the series is: 1 , 2 , 4 , 13 , 31 , 112 , ?
   Ans: 224. (No number has digits more than 4. All of them are 1 , 2, 4, 8 , 16 , 32 , 64 converted to base 5)

6. Father's age is three years more than three times the son's age. After three years, father's age will be ten years more than twice the son's age. What is the father's present age?
   Ans: 33 years.

7. Light glows for every 13 seconds . How many times did it glow between 1:57:58 and 3:20:47 am.
   Ans : 383 + 1 = 384

8. From a vessel, 1/3rd of the liquid evaporates on the first day. On the second day 3/4th of the remaining liquid evaporates. What fraction of the volume is present at the end of the second day.
   Ans: 50%

9. Supposing a clock takes 7 seconds to strike 7. How long will it take to strike 10?
   Ans: 10 1/2 seconds.

10. There are 20 poles with a constant distance between each pole. A car takes 24 second to reach the 12th pole.
   How much will it take to reach the last pole.
   Ans: 41.45 seconds   (Let the distance between two poles = x, Hence 11x:24::19x:?)

11. How can 1000000000 be written as a product of two factors neither of them containing zeros
   Ans: 2 power 9 x 5 power 9

12. Two trains starting at same time, one from Bangalore to Mysore and other in opposite direction arrive at their
   destination 1 hr and 4 hours respectively after passing each other. How much faster is

one train from other?

Ans: Twice

13. Every day a cyclist meets a train at a particular crossing. The road is straight before the crossing and both are traveling in the same direction. The cyclist travels with a speed of 10kmph. One day the cyclist comes late by 25 min. and meets the train 5km before the crossing. What is the speed of the train?

Ans: 60kmph

14. A man collects cigarette stubs and makes one full cigarette with every 8 stubs. If he gets 64 stubs how many full cigarettes can he smoke.

Ans: 8+1=9

15. The minute and the hour hand of a watch meet every 65 minutes. How much does the watch lose or gain time and by how much?

Ans: Gains; 5/11 minutes

16. A survey was taken among 100 people to find their preference of watching T. V. programs. There are 3 channels. Given the no of people who watch

- at least channel 1
- at least channel 2
- at least channel 3
- no channels at all
- at least channels 1and 3
- at least channels 1 and 2
- at least channels 2 and 3

Find the no of people who watched all three.

Ans.

17. Two trains start from stations A and B spaced 50kms apart at the same time and speed. As the trains start, a bird flies from one train towards the other and on reaching the second train, it flies back to the first train. This is repeated till the trains collide. If the speed of the trains is 25 km/h and that of the bird is 100km/h. How much did the bird travel till the collision.

Ans: 100kms.

18. Four persons A, B, C and D are playing cards. Each person has one card, laid down on the table below him, which has two different colors on either side. The colors visible on the table are Red, Green, Red and Blue. They see the color on the reverse side and give the following comment.

A: Yellow or Green   B: Neither Blue nor Green
C: Blue or Yellow   D: Blue or Yellow

   Given that out of the 4 people 2 always lie find out the colors on the cards each person.

Ans.

19. Sometime after 10:00 PM a murder took place. A witness claimed that the clock must have stopped at the time of the shooting. It was later found that the position of both the hands were the same but their positions had interchanged.
Tell the time of the shooting (both actual and claimed).

Ans: Time of shooting = 11:54 PM
Claimed Time = 10:59 PM

20. Some statements are given below:

- L says all of my other four friends have money
- M says that P said that exactly one among them has money
- N says that L said that precisely two among them have money
- O says that M said that three of the others have money
- P, L and N said that they have money

All the above statement are false. Who has money & who doesn't have any money?

Ans.

21. The Bulls, Pacers, Lakers and Jazz ran for a contest. Anup, Sujit, John made the following statements regarding results.

- Anup said either Bulls or Jazz will definitely win
- Sujit said he is confident that Bulls will not win
- John said he is confident that neither Jazz nor Lakers will win

When the result came, it was found that only one of the above three had made a correct statement. Who has made the correct statement and who has won the contest.

Ans: Sujith; Lakers

22. There are five persons with surnames Mukherjee, Misra, Iyer, Patil and Sharma. There are 4 persons having first or middle name of Kumar, 3 persons with Mohan, 2 persons with Dev and 1 Anil. Either Mukherjee and Patil have a first or middle name of Dev or Misra and Iyer have their first or middle name of Dev. Of Mukherkjee and Misra, either both of them have a first or middle name of Mohan or neither have a first or middle name of Mohan. Either Iyer or Sharma has a first or middle name of Kumar but not both. Who has the first or middle name of Anil?

Ans: Kumar Misra Dev, Mohan Iyer Dev, Kumar Patil Mohan, Mohan Sharma Kumar

23. Ann, Boobie, Cathy and Dave are at their monthly business meeting. Their occupations are author, biologist, chemist and doctor, but not necessarily in that order. Dave just told the biologist that Cathy was on her way with doughnuts. Ann is sitting across from the doctor and next to the chemist. The doctor was thinking that Boobie was a goofy name for parent's to choose, but didn't say anything. What is each person's occupation?

Ans: Since Dave spoke to the biologist and Ann sat next to the chemist and across

24. There are 6 volumes of books on a rack kept in order (i.e. vol.1, vol. 2 and so on). Give the position after the following changes were noticed.

- All books have been changed
- Vol.5 was directly to the right of Vol.2
- Vol.4 has Vol.6 to its left and both weren't at Vol.3's place
- Vol.1 has Vol.3 on right and Vol.5 on left
- An even numbered volume is at Vol.5's place

Find the order in which the books are kept now.

Ans: 2 , 5 , 1 , 3 , 6 , 4

25. A soldier looses his way in a thick jungle. At random he walks from his camp but mathematically in an interesting fashion. First he walks one mile East then half mile to North. Then 1/4 mile to West, then 1/8 mile to South and so on making a loop. Finally how far he is from his camp and in which direction.

Ans: Distance traveled in north and south directions:
1/2 - 1/8 + 1/32 - 1/128 + 1/512 - .... = 1/2/((1-(-1/4))
Similarly in east and west directions:
1- 1/4 + 1/16 - 1/64 + 1/256 - .... = 1/((1- (- 1/4))   Add both the answers

26. Conversation between two mathematicians:
First : I have three children. The product of their ages is 36. If you sum their ages, it is exactly same as my neighbor's door number on my left.
The second mathematician verifies the door number and says that it is not sufficient. Then the first says " Ok one more clue is that my youngest is really the youngest". Immediately the second mathematician answers. Can you answer the question asked by the first mathematician? What are the children ages?

Ans 1,6 and 6

27. 500 men are arranged in an array of 10 rows and 50 columns according to their heights. Tallest among each row of all are asked to fall out. And the shortest among them is A. Similarly after resuming that to their original positions that the shortest among each column are asked to fall out. And the tallest among them is B. Now who is taller among A and B ?

Ans. A

28. There are six boxes containing 5 , 7 , 14 , 16 , 18 , 29 balls of either red or blue in color. Some boxes contain only red balls and others contain only blue. One sales man sold one box out of them and then he says, " I have the same number of red balls left out as that of blue ". Which box is the one he sold out ?

29. Ram Singh goes to his office in the city, every day from his suburban house. His driver Gangaram drops him at the railway station in the morning and picks him up in the evening. Every evening Ram Singh reaches the station at 5 O' Clock. Gangaram also reaches at the same time. One day Ram Singh started early from his office and came to the station at 4 O' Clock. Not wanting to wait for the car he starts walking home. Mangaram starts at normal time, picks him up on the way and takes him back house, half an hour early. How much time did Ram Singh walk?

Ans.

30. A family X went for a vacation. Unfortunately it rained for 13 days when they were there. But whenever it rained in the mornings, they had clear afternoons and vice versa. In all they enjoyed 11 mornings and 12 afternoons. How many days did they stay there totally?

Ans: 18

31. There are N coins on a table and there are two players A & B. You can take 1 or 2 coins at a time. The person who takes the last coin is the loser. A always starts first.

- If N=7
  (a) A can always win by taking two coins in his first chance
  (b) B can win only if A takes two coins in his first chance.
  (c) B can always win by proper play
  (d) none of the above
  Ans.
- 2. A can win by proper play if N is equal to
  (a) 13 (b) 37 (c) 22 (d) 34 (e) 48
  Ans: (e.)
- 3. B can win by proper play if N is equal to
  (a) 25 (b)26 (c) 32 (d) 41 (e) none
  Ans.
- 4. if N<4, can A win by proper play always?
  (a) Yes (b) No
  Ans.

32. Mr. Mathurs jewels have been stolen from his bank locker. The bank has lockers of 12 people which are arranged in an array of 3 rows and 4 columns like:

1	2	3	4
5	6	7	8
9	10	11	12

- The locker belonging to JONES was to the right of BLACK'S locker and directly above MILLAR'S.
- BOOTH'S locker was directly above MILLAR'S.
- SMITH'S locker was also above GRAY's (though not directly).
- GREEN'S locker was directly below SMITH'S.
- WILSON'S locker was between that of DAVIS and BOOTH.
- MILLAR'S locker was on the bottom row directly to the right of HERD'S.
- WHITE'S locker was on the bottom right hand corner in the same column as BOOTH'S.

Which box belonged to Mr. Mathurs?

Ans: Box number 9 belongs to Mr. Mathurs.

33. Five people A ,B ,C ,D ,E are related to each other. Four of them make one true statement each as follows.

(i) B is my father's brother.
(ii) E is my mother-in-law.
(iii) C is my son-in-law's brother
(iv) A is my brother's wife.

Ans: (i) D   (ii) B   (iii) E   (iv) C

7

1. There is a 4 inch cube painted on all sides. This is cut down into of 1 inch cubes. What is the no of cubes which have no pointed sides.

Ans: 8

2. At 6'o a clock ticks 6 times. The time between first and last ticks is 30 seconds. How long does it tick at 12'o clock.

Ans: 66 sec.

3. Complete the series: **5, 20, 24, 6, 2, 8, ?**

Ans: 12   (as 5*4=20, 20+4=24, 24/4=6, 6-4=2, 2*4=8, 8+4=12).

4. Find the values of each of the alphabets.

```
    N O O N
    S O O N
 +  M O O N
    J U N E
```
Ans: 9326

5. If a clock takes 7seconds to strike 7, how long will the same clock take to strike 10?

Ans: The clock strikes for the first time at the start and takes 7 seconds for 6 intervals-thus for one interval time taken=7/6. Therefore, for 10 seconds there are 9 intervals and time taken is 9*7/6=10 and 1/2 seconds.

6. An escalator is descending at constant speed. A walks down and takes 50 steps to reach the bottom. B runs down and takes 90 steps in the same time as A takes 10 steps. How many steps are visible when the escalator is not operating?

Ans: 150 steps

7. A chain is broken into three pieces of equal lengths containing 3 links each. It is taken to a blacksmith to join into a single continuous one. How many links are to to be opened to make it ?

Ans : 2.

8. There is a safe with a 5 digit number as the key. The 4th digit is 4 greater than second digit, while 3rd digit is 3 less than 2nd digit. The 1st digit is thrice the last digit. There are 3 pairs whose sum is 11. Find the number.

Ans: 65292

9. An orange glass has orange juice and white glass has apple juice both of equal volumes. 50ml of the orange juice is taken and poured into the apple juice. 50ml from the white glass is poured into the orange glass. Of the two quantities, the amount of apple juice in the orange glass and the amount of orange juice in the white glass, which one is greater and by how much?

Ans: The two quantities are equal

10. The shape in the sketch below is that of a square attached to half of a similar square. Divide it into four equal pieces

Ans: Hint : the figure can be divided into 12 equal triangles

11. Fifty minutes ago if it was four times as many minutes past three o'clock, how many minutes is it to six o'clock?

Ans: Twenty six minutes.

12. Everyday in his business a merchant had to weigh amounts from 1 kg to 121kgs, to the nearest kg.
  What are the minimum number of weight required and how heavy should they be?

Ans: .The minimum number is 5 and they should weigh 1,3,9,27 and 81kgs.

13. A car is traveling at a uniform speed. The driver sees a milestone showing a 2-digit number. After traveling for an hour the driver sees another milestone with the same digits in reverse order. After another hour the driver sees another milestone containing the same two digits. What is the average speed of the driver.

Ans: 45kmph

14. A hotel has 10 storeys. Which floor is above the floor below the floor, below the floor above the floor, below the
   floor above the fifth.

Ans: The sixth floor.

15. Albert and Fernandes have two leg swimming race. Both start from opposite ends of the pool. On the first leg, the boys pass each other at 18 m from the deep end of the pool. During the second leg they pass at 10 m from the shallow end of the pool. Both go at constant speed but one of them is faster. Each boy rests for 4 seconds at the end of the first leg. What is the length of the pool?

Ans.

16. Shahrukh speaks truth only in the morning and lies in the afternoon, whereas Salman speaks truth only in the afternoon. A says that B is Shahrukh. Is it morning or afternoon and who is A - Shahrukh or Salman.

Ans: Afternoon ; A is Salman.

17. A person with some money spends1/3 for cloths, 1/5 of the remaining for food and 1/4 of the remaining for travel.
   He is left with Rs 100/- . How much did he have with him in the beginning ?

Ans: Rs 250/-

18. Ram, Shyam and Gumnaam are friends.
   Ram is a widower and lives alone and his sister takes care of him.
   Shyam is a bachelor and his niece cooks his food and looks after his house.
   Gumnaam is married to Gita and lives in large house in the same town.
   Gita gives the idea that all of them could stay together in the house and share monthly expenses equally.
   During their first month of living together, each person contributed Rs.25. At the end of the month, it was found that Rs 92 was the expense so the remaining amount was distributed equally among everyone. The distribution was such that everyone received a whole number of Rupees. How much did each person receive?

Ans. Rs 2   (Hint: Ram's sister, Shyam's niece and Gumnaam's wife are the same person)

19. There are 3 societies A, B, C. A lent cars to B and C as many as they had already. After some time B gave as many tractors to A and C as many as they have. After sometime c did the same thing. At the end of this transaction each one of them had 24. Find the cars each originally had.

Ans: A had 39 cars, B had 21 cars & C had 12 cars

20. Sam and Mala have a conversation.

- Sam says I am certainly not over 40
- Mala says I am 38 and you are at least 5 years older than me
- Now Sam says you are at least 39

All the statements by the two are false. How old are they really?

Ans: Mala = 38 yrs, Sam = 41 yrs.

21. Each alphabet stands for one digit in the following multiplication.

```
        T H I S
      x     I S
      X F X X
      X X U X
    X X N X X        What is the maximum value T can take?
```
Ans: T max value = 4

22. Grass in lawn grows equally thick and in a uniform rate. It takes 24 days for 70 cows and 60 days for 30 cows to eat the whole of the grass. How many cows are needed to eat the grass in 96 days.?

Ans : 20

[Hint: g - grass at the beginning   r - rate at which grass grows, per day

y - rate at which one cow eats grass, per day   n - no of cows to eat the grass in 96 days

g + 24*r = 70 * 24 * y   g + 60*r = 30 * 60 * y

g + 96*r = n * 96 * y, Solving, n = 20.]

23. Three criminals were arrested for shop lifting. However, when interrogated only one told the truth in both his statements, while the other two each told one true statement and one lie. The statements were:

- **ALBERT** :(a) Chander passed the merchandise. (b) Bruce created the diversion.
- **BRUCE**   :(a) Albert passed the merchandise.   (b) I created the diversion.
- **CLIVE**   :(a) I took the goods out of the shop.   (b) Bruce passed them over.

Ans: Albert passed the goods. Bruce created the diversion. Clive took the goods out of the shop.

24. I bought a car with a peculiar 5 digit numbered license plate which on reversing could still be read. On reversing value is increased by 78633.Whats the original number if all digits were different?

Ans: Only 0 1 6 8 and 9 can be read upside down. So on rearranging these digits we get the answer as 10968

25. There N stations on a railroad. After adding X stations on the rail route 46 additional tickets have to be printed.

   Find N and X.

   Ans. x=2 and N=11   (Let initially, N(N-1) = t; After adding, (N+X)(N+X-1) = t+46;Trail and error method)

26. Complete the Table given below:

   Three football teams are there. Given below is the group table. Fill in the x's

	Played	Won	Lost	Draw	Goals For	Goals Against
A	2	2	x	x	x	1
B	2	x	x	1	2	4
C	2	x	x	x	3	7

   Ans: The filled table is given below

	Played	Won	Lost	Draw	Goals For	Goals Against
A	2	2	0	0	7	1
B	2	0	1	1	2	4
C	2	0	1	1	3	7

27. A bird keeper has got P pigeons, M mynas and S sparrows. The keeper goes for lunch leaving his assistant to watch the birds.

- Suppose p=10, m=5, s=8 when the bird keeper comes back, the assistant informs the x birds have escaped. The bird keeper exclaims: "Oh no! All my sparrows are gone."
  How many birds flew away?
- When the bird keeper comes back, the assistant told him that x birds have escaped. The keeper realized that at least 2 sparrows have escaped.

   What is minimum no of birds that can escape?

        Ans.

28. Seven members sat around a table for three days for a conference.

   The member's names were Abhishek, Amol, Ankur, Anurag, Bhuwan ,Vasu and Vikram.

   The meetings were chaired by Vikram.

   On the first evening members sat around the table alphabetically.

   On the following two nights, Vikram arranged the seating so that he could have

Abhishek as near to him as

possible and absent minded Vasu as far away as he could.

On no evening did any person have sitting next to him a person who had previously been his neighbor.

How did Vikram manage to seat everybody to the best advantage on the second and third evenings?

Ans: **Second evening**: Vikram, Ankur, Abhishek, Amol, Vasu, Anurag and Bhuwan.

Third evening :Vikram, Anurag, Abhishek, Vasu, Bhuwan, Ankur, Amol.

29. Two twins have certain peculiar characteristics. One of them always lies on Monday, Wednesday, Friday. The other always lies on Tuesdays, Thursdays and Saturdays. On the other days they tell the truth. You are given a conversation.

- Person A-- today is Sunday my name is Anil
- Person B -- today is Tuesday, my name is Bill

What day is today?

Ans: Today is Tuesday.

30. Four prisoners escape from a prison. The prisoners, Mr. East, Mr. West, Mr. South, Mr. North head towards different directions after escaping. The following information of their escape was supplied:

- The escape routes were The North Road, South Road, East Road and West Road.
- None of the prisoners took the road which was their namesake.
- Mr. East did not take the South Road
- Mr. West did not the South Road.
- The West Road was not taken by Mr. East

What road did each of the prisoners take to make their escape?

Ans: Mr. East took the North Road

Mr. West took the East Road

Mr. North took the South Road

Mr. South took the West Road.

31. A hotel has two wings, the east wing and the west wing. Some east wing rooms but not all have an ocean view.

All west wing rooms have a harbor view. The charge for all rooms is identical, except as follows :

- Extra charge for all harbor view rooms on or above the 3rd floor
- Extra charge for all ocean view rooms except those without balcony

- Extra charge for some harbor rooms on the first two floor & some east wing rooms without ocean view but
  having kitchen facilities.

Which of the following cannot be determined on the basis of the information given:
   I. Whether there are any rooms without a balcony for which an extra charge is imposed.
   II. Whether any room without a kitchen or a view involves an extra charge.
   III. Whether two extra charges are imposed for any room.
   (A) I only   (B) II only   (C) III only   (D) II and III only   (E) I, II and III
          Ans: (A)

32. Given that April 1 is Tuesday. A, B, C are 3 persons told that their farewell party was on

- A - May 8, Thursday
- B - May 10, Tuesday
- C - June 5, Friday

Out of A, B, C only one made a completely true statement concerning date, day and month. The other told two one told the day right and the other the date right. What is correct date, month, day.
          Ans: B - (May 10) SUNDAY , C - June 6 (Friday).

33. Answer the following questions based on the conditions from the choices A, B, C, D, E as described below:
    (A) if a definite conclusion can be drawn from condition 1
    (B) if a definite conclusion can be drawn from condition 2
    (C) if a definite conclusion can be drawn from condition 1 and 2
    (D) if a definite conclusion can be drawn from condition 1 or 2
    (E) no conclusion can be drawn using both conditions

- person 1 says N<5
- person says N>5
- person 3 says 3N>20
- person 4 says 3N>10
- person 5 says N<8

What is the value of N?
a) 1. No of persons who speak false being less than no of persons who tells the truth.
   2. Person 2 is telling the truth.
          Ans.
b) 1. no of persons telling the truth is greater than no of persons telling lies
   2. person 5 is telling the truth.

LUCENT TECHNOLOGY

The written test is of two parts:
> **Section A** : Aptitude Test
> **Section B** : Technical Test

The **aptitude** is a mixture of verbal, analytical and quantitative questions. It is based on a pattern similar to the CAT and GRE tests. Also questions on the patterns of these in R.S Agarwal can be practiced.

The **technical section** tests your knowledge in **C with Data Structures and Pointers, Computer Networks, DBMS** and **Operating Systems**

People with **electronics** background can expect to be tested on **core subjects.**

1. 6*12*15 is the volume of some material. How many cubes of edge 3 can be inserted into it ?

   a. 20   b. 30   *c. 40*   d. 46

2. Two pipes can fill a tank in 10 and 12 hours respectively while third pipe will make the tank empty in 20 hours. If all three pipes operate simultaneously, in how many hours the tank will be filled ?

   a. 11 Hrs   b. 9 Hrs 15 minutes   c. 8 Hrs   *d. 7 Hrs 30 minutes*

3. Cost of an item is x. It's value increases by p% and decreases by p% Now the new value is 1 rupee, what is the actual value ?
> Ans.(1000)/(1000-p*p).

4. A right circular cylinder and a cone are there. Base radius of cone is equal to radius of cylinder. What is the ratio of height to slant side if their volume are the same?

5. Distance between two poles is 50 meters. A train goes by 48 at a speed of kmph. In one minute how many poles will be crossed by the train ?

6. A pole seen from a certain distance at an angle of 15 degrees and 100 meters ahead by 30 degrees. What is the height of pole ?

7. For 15 people--each has to pay Rs.20.For 20 people--each has to pay Rs.18. For 40 people--how much has each to pay ?

8. If p=2q then q=r*r , if p-odd then q is even, whether r is even or odd ?
   a) first condition is sufficient   b) second condition is sufficient
   c) both are sufficient   d) both are not sufficient

9. If he sells 40 mangoes, he will get the selling price of 4 mangoes extra, What is his percentage increase in profit ?

    a. 25%   b. 30%   c. 15%
d.18%

10. 100 glasses are there. A servant has to supply glasses to a person If he supplies the glasses without any damage he will get 3 paise otherwise he will loose 3 paise. At the end of supplying 100 glasses if he gets 270 paise, how many glasses were supplied safely.

    a. 100   b. 98   *c. 95*   d. 93

11. Q is not equal to zero and $k = (Q \times n - s)/2$ find n?

    (a) $(2 \times k + s)/Q$ (b) $(2 \times s \times k)/Q$ (c) $(2 \times k - s)/Q$ (d) $(2 \times k + s \times Q)/Q$ (e) $(k + s)/Q$

Questions 12 - 16:
   A causes B or C, but not both
   F occurs only if B occurs
   D occurs if B or C occurs
   E occurs only if C occurs
   J occurs only if E or F occurs
   D causes G, H or both
   H occurs if E occurs
   G occurs if F occurs

12. If A occurs which of the following must occurs

          I. F & G   II. E and H   III. D
    (a) I only   (b) II only   (c) III only
    (d) I, II, III   *(e) I, II (or) II, III but not both*

13. If B occurs which must occur

    (a) D   (b) D and G   (c) G and H   (d) F and G   (e) J

14. If J occurs which must have occurred

    (a) E   *(b) either B or C*   (c) both E F   (d) B   (e) both B and C

15. Which may occurs as a result of cause not mentioned:

         I. D   II. A   III. F
    (a) 1 only   (b) 2 only   *(c) 1 and 2*   (d) 2 and 3   (e) 1,2,3

16. E occurs which one cannot occurs

    (a) A   *(b) F*   (c) D   (d) C   (e) J

Technical

1. Which is the fastest logic ?

        Ans. ECL

2. 202.141.65.62 type of IP address belong to which class ?

        Ans. class B

3. Mod K ring counter requires how many number of flip flops ?

        Ans. K

4. What is the ideal op-amp CMRR ?

        Ans. infinity.

5. For a 13-bit DAC the MSB resistance is 2kohms. What is the LSB resistance ?

        Ans. 2 kohms $* 2^{12}$

6. How many mod 3 counters are required to construct mod 9 counter.

        Ans.2

7. Piggy backing is a technique for

   a) Flow control   b) Sequence   *c) Acknowledgement*   d) Retransmission

8. The layer in the OST model handles terminal emulation

   a) session   *b) application*   c) presentation   d) transport

9. Long int size is

   a) 4 bytes   b) 2 bytes   *c) compiler dependent*   d) 8 bytes

10. Find theoutputof
         x=2,y=6,z=6;< BR>   x=y=z;

        printf("%d",x);

   a. 2   *b. 6*   c. 0   d. error

11. FTP is carried out in _____ layer ?

a.   b.   c.   d.

Other questions : Problem related to pointers.Refer Page.123 of C Programming, by Kernighan and Ritchie.

        Few question related to C++

MASCOT SYSTEM

There are a total **6 sections** in the test. Each section has **10 questions** and the total time given is **60 minutes**.
All questions are **MCQ type**. The following are the sections:

- **Computer Fundamentals**
- **Algorithms**
- **Hardware**
- **Software**
- **General Awareness**
- **Languages**

There is also an **aptitude test** which is held along with the technical test. Refer **R.S. Aggarwal** for more sample questions.
The pattern of this test is known to vary with respect to the number of sections and time. Another variant of this test has two sections -- a **technical** (with **40 questions, 40 marks** in **40 minutes**) and an **aptitude** section (with **30 questions, 30 marks** in **30 minutes**) -- with **negative marking (1:4)**. We have included one test on this pattern also. We recommend that you go through both the tests to get the feel of the kind of paper that you could expect.

. One Nibble = ?

a) 8 bits
b)16 bits
c) 4 bits
d)32 bits

Ans. (c)

2. Hexadecimal and Octal representation of 1024 ?

3. What a compiler does ?

4.What type of interface does DOS have?

a) Graphical interface
b) Character interface
c) Symbolic interface
d) None of the above

Ans. (b)

5.What is the abbrevation of CPU?

a) Control Processing Unit
b) Central Processing Unit
c) Central Programming Unit
d) Control Programming Unit

Ans. (b)

6. Fortran is used as a

a) Scientific Language
b) Business Language
c) Language used in LANs
d) Applications Language

Ans. (a)

7.The total numberof characters in the ASCII code?

a) 126
b) 256
c) 258
d) 128

Ans. (d)

8. In Windows NT- What NT stands for?

a) Network Techniques
b) New Technology
c) Network Transmission
d) None of the above

Ans. (b)

9. Which is not an input device ?

a) Keyboard
b) Disk
c) Mouse
d) Lightpen

Ans. (b)

10. Which is not a pointing device ?

a) Mouse
b) Joy stick
c) Lightpen
d) None

11. Who is the CEO of Microsoft ?

a) Bill Gates
b) Steve Jobs
c) Steve Balmer
d) Andy Grove

Ans. (c)

12. 4GL ?

a) Fortran
b) SQL
c) ADA

13.Who is the father of Computers?

a) Alan Turing
b) Charles Babbage
c) Bill Gates
d) None of the above

Ans. (b)

14. Which of them is Object Oriented Language.?

a) Basic
b) C
c) C++
d) Fortran

Ans. (c)

15. Power PC is the product of ?

a) Microsoft
b) IBM
c) Apple
d) Motorola

Ans. (c)

16. The latest processor being used these days by Intel is?

a) Pentium-III
b) Power PC
c) Pentium pro
d) None

17. MS Word is ?

18. First Super Computer built in India.

a) Cray
b) Param
c) Aryabhatta
d) Arjun

Ans. (b)

19. Which of the following companies do not manufacture chips?

a) Microsoft
b) Motorola
c) Intel
d) HP

Ans. (a)

20.What is the full form of LAN

a) Local Area Network
b) Local Arial Networking
c) Loop Around Network
d) Loop Area Network

Ans. (a)

21. What is the full form of WAN

a) Wireless Application Networking
b) Wireless Access Network
c) Wired Access Network
d) Wide Area Network

Ans. (d)

22.What is a Modem ?

a) Modulator Emmulator
b) Modulator Demodulator
c) Mode Modulator
d) None of the above

Ans. (b)

23. What is the full form FDD

a) Floppy Drive Detector
b) Floppy Drive Demodulator
c) Floppy Disk Drive
d) None of the above

Ans. (c)

24. What is the full form BIT

a) Binary Integer
b) Binary Term
c) Binary Digit
d) None of the above

Ans. (c)

25. Information is ?

a) Message
b) Data
c) Processed data
d) None

Ans. (b)

26. Which is not networking ?

a) Internet
b) Ethernet
c) Arcnet
d) None

27. One Gigabyte =?

a) 2^{30}
b) 2^{20}
c) 2^{10}
d) None

Ans. (a)

28. Which of the following is not RDBMS ?

a) Sybase
b) SQL
c) Acess
d) None

Ans. (b)

29. Oracle is ?

a) HLL
b) OS
c) RDBMS
d) Query Language

Ans. (c)

30. In Oracle, Table means (Ans : Collection of records)

31. DMA - abbrevation

a) Direct Memory Access
b) Discrete Memory Access
c) Disk Memory Access
d) None of the above

Ans. (a)

32. What is meant by Static Variable ?{refer data storage techniques}

33. What is meant by QUEUE? {refer any data structures text}

34. What is meant by STACK? {refer any data structures text}

35. The processor used in first IBM PC?

(8086,8088,zig4,intel)

36. Difference between 80286 and 80287

37. In bubble sort , no. of comparisons required are ?

a) N*(N+1)/2
b) N*(N-2)/2
c) N*(N-1)/2)
d) None of the above

Ans. (c)

38. No. of comparisons of an item in 100 items by binary comparison?

a) 10
b) 25
c) 50
d) 100

39. What is the full form of CRT

a) Cathode Ray Terminal
b) Cathode Ray Tube
c) Common Resistor Transistor
d) None of the above

Ans. (b)

40. No. of entryvalues are there in ideally in a subroutine.

41. Binary tree?

42. In which of the following is the flow in both the directions ?

a) Single linked list
b) Double linked
c) Queue
d) None of the above

Ans. (b)

43. Electron screen size ? (here, 2 lines of algorithm is given. Name the algoirithm)

44. Which is not storage device.?

a) Floppy Disk
b) CD ROM
c) Disk
d) None

Ans. (d)

45. A question regarding memory ? (least used memory,recently unused

memory,..)

46.What is the full form of ISO

a) International Software Organisation
b) International Standard Organisation
c) International Solutions Organisation
d) None of the above

Ans. (b)

47.What is the full form of HTML

a) Hyper Text Makeup Language
b) Hyper Text Markup Language
c) Hyper Terminal Markup Language
d) None of the above

48. Flow chart for factorial N? (ans :choice a)

49. What is meant by Recursion ?

50. For the following C program

Struct(s)
{int a;
long b;
}

Union (u)
{int a;
long b;
}

Print sizeof(s)and sizeof(u) if sizeof(int)=4 and sizeof(long)=4

51. For the following C program

Switch (i)
i=1;
case 1
i++;
case 2
++i;
break;
case 3
--i;

Output of i after executing the program

52. For the following C program

char S;
char S[6]= " HELLO";
printf("%s ",S[6]);

output of the above program ?

(a) 0
(b) ASCII 0
(c) I
(d) unpredictable

53. For the following C program

```
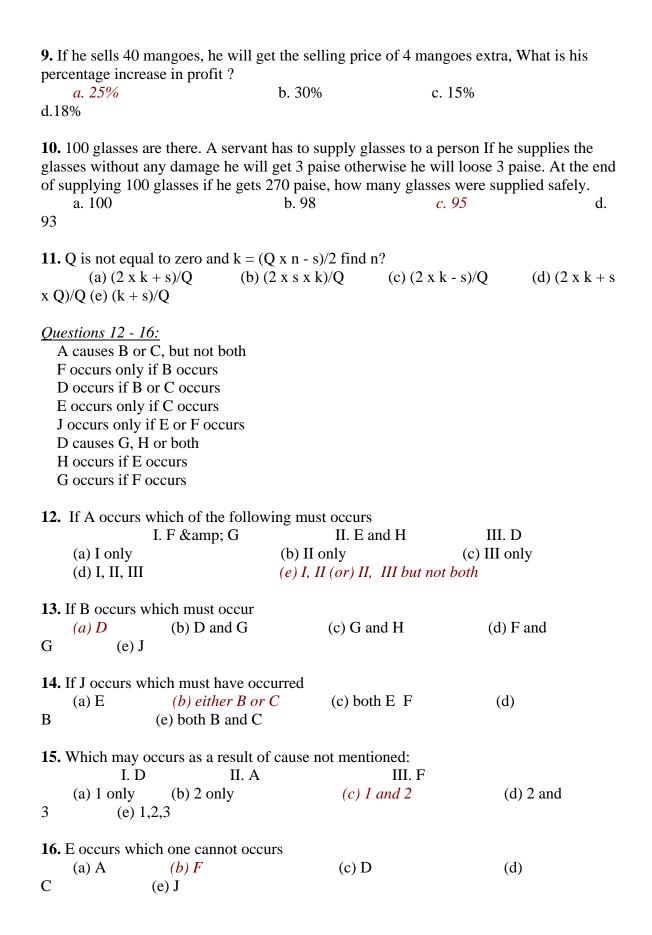Unsigned char c;
for(c=0;c!=256;c++2)
printf("%d",c);
```

No. of times the loop is executed ?

(a) 127
(b) 128
(c) 256
(d) infinitely

54. For the following program

```
int i;
i=0;
repeat
i=i+1; <====== PASCAL PROGRAM
print i;
until(i<10)
end
```

No. of times the loop is executed?

55. For the following program

```
Convert (int A,var ,int B;int c)
{A=10;
B=4-;
C=120;
}
```

```
Convert (inta,b,c)
{ <====== PASCAL PROGRAM
a=1;
b=4;
```

```
c=12;
}
```

56. For the following program

```
Procedure A
Begin
--------
end <====== PASCAL PROGRAM
```

Procedure B No. Of errors in the program ?(1,2,3,none)

```
Begin
-----------
end
```

57. For the following program

```
int i;
i=2;
i++;
if(i==4)
{printf(i=4);
}
else
{printf(i=3);
}
```

Output of the program ?

a) 4
b) 3
c) unpredictable
d) none

Ans. (b)

58. What is FAT?.

a) File Allocation Table
b) File Access Table
c) FDD Allocation Table
d) None of the above

Ans. (a)

QUANTITATIVE APTITUDE TEST :

Total 44 questions are there.

1. How many degrees hours hand rotate in 10 minutes?

a) 6°
b) 5°
c) 4°
d) None of the above

Ans. (b)

2. $1/(10^{18}) - 1/(10^{20}) = ?$

a) $99/10^{16}$
b) $99/10^{14}$
c) $99/10^{15}$
d) None of the above

Ans. (a)

3. $0 < x < 1$: Which is greater ?
a) $1/x^2$
b) $1/x$
c) x
d) x^2

Ans. (a)

4. c=a/b ; a-1=c What is the relation between a&b.b=?

a) a/(a-1)
b) a/(a+1)
c) (a+1)/a
d) None of the above

Ans. (a)

5. The sum of 7 consecutive odd integers with 27 as the fourth number.

a) 183
b) 181
c) 185
d) 179

Ans. (b)

6. For $(66666666666666)^2 + 888888888888$,what is the number at the unit's place

a) 2
b) 4
c) 8
d) None of the above

Ans. (b)

7.32736 Express it in product of 3 numbers.

a) 41,42,43
b) 31,32,33
c) 32,34,33
d) 38,38,33

Ans. (b)

8. Radius of sphere is increased by 50%. By how much percentage is surface area is increased.

a) 150%
b) 125%
c) 128%
d) 225%

Ans. (b)

9. In which of the following , 2 as a common factor , can be eliminated.

a) $\log(x^2)/\log(y^2)$
b) (logx*logx*logx)/(logy*logy*logy)
c) (logx*logx)/logy
d) None of the above

Ans. (a)

Antonyms :

11. Auspiciously

12. Recalcitrant

13. & 14. - Sentence correction

15, 16 , 17 - Spelling Mistakes

18, 19 - Two Questions

6 letters are assigned certain numbers.
In each question , 4 combination of digits are given .
Find which gives a meaningful word.

20 & 21. - 4 sentences will be given in each question. Arrange them in logical order .

22. 5 straight lines are cut in a circle. A question regarding this.

In this section ,a question is followed by 2 statements A and B.Any one of these statements,or both are sufficient to answer the question.Mark your answer as :

a) **If statement A alone is required**
b) **If statement B alone is required**
c) **If both the statements A & B are required**
d) **Neither of the statements are required**

23. Does Mr. Mathew give tution ?

A) Mathew is a teacher
B) In school, the teacher is not expected to give tutions

Ans. (d)

24. There is no power cut in advanced country. If T is a city, Is there power cut in that city?

A) Z is a advanced country
B) T ia a capital city of country Z

Ans. (c)

25. Tanzanians are in East Africa. Tanzanians are good in either education ,dance or music

A) Tanzanians are good at Education
B) East Africa are good at dance & Music.

Ans. (a)

Remaining questions 26 - 29 are of the same type.

30. On a single day, 14 children are admitted in a school by their mothers.2 are sisters, 3 are brothers,2 are brother and sister and 2 are twins.The rest are singles. How many mothers came?

(a) 5
(b) 7
(c) 9
(d) 14

Problem on cisterns & pipes.

31.It will take 8hrs to fill a cistern. But due to leak at the bottom, it takes 10 hrs to fill it. In how many hrs, the full tank will be emptied because of the leak.?

(a) 18
(b) 8
(c) 40
(d) 10

Ans. (c)

Question regarding men & work

32. A does alone a piece of work in 4 days.B does the same piece of work alone in 8 days.C does alone a work in 10 days.In how many days will A, B, C together complete the work

(a) 40/19
(b) 19/40
(c) 1/22
(d) 2

Ans. (a)

33. In 3.5 Kg rod , there is 74% silver. If it is alloyed with a 0.5 Kg rod, the % of silver goes up to 84%. The percent of silver in 0.5 Kg rod?

34. Two chords of lengths L1 and L2 are drawn in a circle. Their lengths are inversely proportional to the straight distance joining the centre.Find the radius of circle.

35. A Kg of tea costs Rs 49.50 . But the supplier gives 10 gms less for every Kg he sold. What is the actual cost.

(a) 49.001
(b) 49.005
(c) 49.01
(d) Same

Ans. (b)

Questions 36 - 40 are based on the transportation table.

	A	B	C	D	E
A	X	12	8	20	6
B	12	X	12	5	9
C	20	8	X	4	7
D	3	15	6	X	10
E	12	5	8	3	X

A,B,C,D,E denote the stages.
X denotes the start of the stage.
The bus goes from A to E and E to A with back stops at B,C, &D.
For each the charge is Rs.0.70.
The numbers in the table are how many passengers are there in the bus upto that stage.(the numbers given the table are not correct)

36. Total no. of passengers in onward journey

37. Total amount in the conductors bag just before the bus reaches the stage C

38. How many Rs. 1.40 tickets are issued to passengers in backward journey.

39. If the bus breaks down between the stages C & D , the amount refunded to passengers.

40. If the ticket costs Rs.1.50, how much is the profit in Backward journey.

GENERAL APTITUDE TEST (Time:30 min)

SECTION 1:READING COMPREHENSION

....

..(passage of one and half page.)

The question & answers based on this passage were given. There were 5 questions.
You shouldn't expect the same passage to be given to you but we havw written down the questions to give you a general
view of the type of RC questions that you can expect

1. A reductive cycle is one in which

a. an employer attempts to reduce costs
b. the work-force is gradually reduced in number
c. costs decreases as....
d. there is less productive effort on the part of employees

Ans. (d)

2. If a substantial number of employees remain the reductive cycle one may assume that

a. the org. is enjoying increased business
b. the personnel dept....
c. the boss is not...
d. there is an unwholessome..

Ans. (a)

3. The passage indicates that unionisation of a worker...

a. opportunities for the workers realise..
b. opportunities for the workers to ...
c. more please working...
d. greater fringe benifits include

Ans. (d)

4. According to the author management failures in supervision mainly attributable to

a. carrying...
b. a soft-hearted...
c. ignorance.
d. lack of consideration.

Ans. (d)

5. Employees will get together to seek an improvement of conditions because of dissatisfaction stemming from
i. social just
ii. economic
iii. moral decadence

a. i only
b. ii only
c. i and ii only
d. i & iii only

Ans. (d)

SECTION II:QUANTITATIVE AND NUMERICAL ABILITY

6. The monthly personal maintenance allowance for a family of an employee is determined by the average age of family and size of the family. Jacob was drawing rs.570 as PMA after he got married 6 years back.At present he draws Rs 720 as PMA with his family of 3 after the birth of son?

a. 2 years
b. 3 years
c. 4 years
d. 5 years

Ans. (d)

7. White collar sells a shirt for an amount. Due to off season sale white collar started offering a discount of 20% on tag price. come diwali, white collar offered a further discount of 10% on the reduced price. If i get the shirt for Rs 108 what was the original price?

a. Rs.180
b. 160
c. 145
d. none

Ans. (d)

8. A vertical stick 10-cm long casts a shadow 6 cm long on the ground under similar conditions a tower casts a shadow 10m long determine the height of the tower to the 2nd place of the decimal.

a. 16.67m
b. 17.70m
c. 16.8m
d. none

Ans. (a)

9. In the fig given below ...... which curve rep.the monthly savage*(the fig.cannot be recollected by the candidate)*

a. LR
b. ST
c. PQ
d. none

Ans. (b)

10. Two poles of height 7m and 12m stand on a play ground. If the distance between their feet is 12m,find the distance between their tops.

a. 12m
b. 13m
c. 11m
d. none

Ans. (b)

SECTION III : ANALOGY

11. saint : holiness : : mongol :

a. chinese
b. barbarity
c. tribal
d. courageousness

Ans. (d)

12. entomologist : insects : : ornithologist :

a. marine life
b. birds
c. wild life
d. astronomy

Ans. (b)

13. ostracize : exclude : :

a. war : death
b. shipping : transport
c. war : surrender
d. population : people

Ans. (a)

14. rain : downpour : : joy :

a. happiness
b. triumph
c. ecstasy
d. laughter

Ans. (b)

15. niggardly : generous : : dolorous :

a. understandable
b. practical
c. happy
d. ostentatious

Ans. (d)

SECTION IV : INTELLIGENCE AND CRITICAL REASONING

16. Which one of the following is venn diagram true.(4 diagrams are there.)

17. In the given fig. (triangle.square.,circle)...

a. A
b. B
c. D
d. E

Ans. (b)

Direction : (18-20) : In column one are listed certain groups of individual while in column 2 are listedsome of the characteristics against each group of individuals which are common to each member of that group

Coloumn1	Column 2
BCDFH	TU
DEGH	QRS
DEF	PN
ACDE	NS
GDE	PVQ
DEG	VQRS
CDE	VNO
BCD	VTS
ABD	PT

18. Which characteristcs are found either in 'E' or 'F' or in both but not in 'H'?

a. QRS
b. NOP
c. PVT
d. UVW

Ans. (b)

19. Which character is common to 'B' &amp 'C' but is not present in 'H'?

a. U
b. V
c. W
d. T

Ans. (a)

20. Which characteristics are common to 'C' &amp 'E' but are not present in 'F'?

a. T,V
b. V,W
c. T,U
d. O,P

Ans. (d)

SECTION V : VERBAL ABILITY

In the following questions mark the option that is nearest to the given word

21. Synonym for **quixotic**

a. rapid
b. exotic
c. longing
d. timid
e. idealistic

Ans. (e)

22. Antonym of **recondite**

a. unfriendly
b. easily comprehensive
c. closely juxtaposed
d. broad minded
e. sardonic

Ans. (b)

23. antonym of **servile**

a. moral
b. pue
c. futile
d. foul
e. haughty

Ans. (e)

24. Antonym of **tacit**

a. spoken
b. allowed
c. neutral
d. impertinent
e. unwanted

Ans. (a)

25. Synonym for **macabre**

a. musical
b. frightening
c. chewed
d. wicked
e. exceptional

Ans. (b)

SECTION VI : ANALYTICAL ABILITY

26. Fran: i want to stay out of ...

Sid:that's not true....

a. makes unfair demands on her students
b. only gives grades to a few favoured students
c. never gives out grades of A

Ans. (c)

For Q27 - 28 A small passage was given.
The answers though are the following

27. The major logical.weakness of the argument above is the fact that

a. it draws meaningful distinction between hands out and subsidies
b. it supports only the subsidy and does not provide the other side view.
c. it draws no meaningful distinction between hands out and subsidies
d. subsidies should not be given
e. none of the above

Ans. (c)

28. Which of the following persons would be most likely to disagree with the conclusions reached above argument

a. the president..
b. the patenee of a new device designed to make the widget absolute
c. the worker who worked with the patentee

Ans. (b)

29.- 30 (a small passage)

In a laboratory study,160 rabbits in an experimental group were injected with serum d, while 160 rabbits in a control group were injected with in two weeks, 39% of the experimental group rabbits had contracted jungle fever, a highly contagious and usually fatal disease therefore jungle fever must be caused by some substance similar to the substance
found in serum d

29. The above argument would be most greatly strengthened if it were shown that

a. the normal...
b. 40% of ..
c. serum...
d. the blood of jungle fever victims invariably contains a high level of a certain toxic substance also

Ans. (d)

30. The above argument would be most seriously weakened if it were shown that

a. none of the rabbits in the experimental group had had jungle fever prior to the start of the experiment

b. the rabbits in the experimental group had had jungle fever prior to the start of the experiment.

c. some of the rabbits in the experimental group had had jungle fever prior to the start of the experiment .

d. four of the rabbits had had jungle fever prior to the start of the experiment .

e. one of the rabbits in the experimental group had had jungle fever prior to the start of the experiment

Ans. (e)

GENERAL TECHNICAL TEST

1) Which of the following language is a functional language

a. RPG
b. Small Talk
c. PI/I
d. LISP

Ans. (c)

2) What is the full form of ATM

a. Automated teller machine
b. All time money
c. Asynchronous transfer mode
d. Active test monitor

Ans. (c)

3) FDDI is a

a. ring network
b. star network
c. mesh network
d. bus based network

Ans. (a)

4) Which is pure object oriented language?

a. Effiel
b. C++
c. object pascal
d. Small talk

Ans. (d)

5) x.25 transfer protocal is used for

a. packet switching
b. circuit switching
c. framing
d. datagram

Ans. (b)

6) What is the binary equivalent of decimal 269?

a. 100001100
b. 100001010
c. 101001011
d. 100001101

Ans. (c)

7) The 4NF is for

a. related to Multi-Value Dependency
b. related to transitive dependency
c. related to function dependency
d. non trival function or multi value dependency

Ans.

8) The LRU algorithm

a. pages out pages that have been used recently
b. pages out pages that have not been used recently
c. pages out pages that have been least used recently
d. pages out the first page in given data

Ans. (c)

9) A search procedure which assosiates an address with a key value and provides a mechanism for dealing with two or more values assigned to the same address to the same address is called.

a. linear search
b. binary search
c. hash coded search
d. radix search

Ans. (c)

10) A t-switch is used to

a. control how message are passed between computers
b. echo every character that received
c. transmit characers one at a time
d. rearrange the ....

Ans. (c)

11) EE-ROM is

a. electricity erasable
b. easily erasable
c. non erasable
d. effective erasable

Ans. (a)

12) Which device can sense inventory data specified in bar codes?

a. mouse
b. light pen
c. holographs
d. joysticks

Ans. (c)

13) Corba stands for ...

a. common object request broker architecture
b. combined recovery based system
c. code recovery bench architecture
d. none of the above

Ans. (a)

14) Which is non-procedural language?
a. effiel
b. ada
c. small talk
d. sql

Ans. (a)

15) Which of the following language supports associative arrays?

a. pl/i
b. rpg
c. perl
d. ada

Ans. (c)

16) Which network protocol IBM mainframe and midrange support

a. SNA
b. TCP/IP
c. X.25
d. IEEE 802.5

Ans. (a)

17) The achronym DAN stands for

a. data acess network
b. distributed area network
c. desktop area network
d. disk access node

Ans. (a)

18) The program fragment that follows is written in a block-structured language . Assume that it is syntactically correct and determine its output

begin
integer x,y;
x:=3;y:=7;
begin
integer x;
begin
integer y;
y:=9;

```
x:=2*y;
end;
x:=x+y;
print(x);
end;
print(x);
end;
```

a. 25 27
b. 27 27
c. 27 3
d. 25 3
e. 25 25

Ans. (e)

19) Which of the following is responsible for coordinating various operations using timing signals?

a. arithmetic-logic unit
b. control unit
c. memory unit
d. input/output unit

Ans. (b)

20) Microprocessors can be used to make

a. computers
b. calculators
c. digital systems
d. all the above

Ans. (d)

21) FORTRAN implimentation do not permit recursion because

a. they use static allocation for variables
b. they use dynamic allocation for variables
c. stacks are not avalible on all machines
d. it is not possible to impliment recursion on all m/c s

Ans. (a)

22) What does the following code do
var a,b :integer

```
begin
a :=a+b
b :=a-b
a :=a-b
end;
```

a. exchange a and b
b. doubles a and stores in b
c. leaves a and b unchanged
d. none

Ans. (a)

23) For program segment given bellow, which of the follwing are true?

```
program main(output)
type link = ^data
data = record
d : record
n : link
end;
var ptr : link;
begin
new(ptr);
ptr :=nil;
ptr ^.d :=5.2
written(ptr);
end;
```

a. the program leads to compile time error
b. the program leads to run time error
c. the program produces error relating to nil pointer dereferencing
d. both b and a

24) What is the output of the program segament below if the compiler operates call byreference?

```
procedure CALC(P,Q,R);
begin
Q:=Q-1.0
R:=Q+P
end;
begin{main}
A:=2.5; B:=9.0;
CALC(B-A,A,A);
```

print(A);
end; {main}

a. 1.5
b. 2.5
c. 10.5
d. 8
e. 6.5

Ans. (d)

25) Which of the following is not provided in C?

a. test loops
b. grouping and subprograms
c. synchronization, coroutines,and parallel processing
d. all the above

Ans. (c)

26) Data encryption

a. is most used by public billboard networks
b. is most used by public financial networks
c. cannot be used by private installation
d. is not necessary ..

Ans. (a)

27) An ideal compiler should

a. be a smaller in size
b. produce object code that is smaller in size and executes faster
c. take less time of compiling
d. all the above

Ans. (d)

28) What will be the value of x and y after execution of the following statment (C language)

n== 5; x = n++; y = --x;

a. 5,4
b. 6,5
c. 6,6

d. 5,5

29) For athe following code

```
1i:=1;sum:=0;
repeat
begin
2 sum:=sum+1;
3 i:=i+1
end;
4 until i=n
```

let"A" representtheinitialization(i:=1;sum:=0)of line 1.let"B"represent the summing action within the loop(loop 2),and let "i" represent the increment (line 3).if "T"represents the best contained in line 4,which of the following regular expressions represents all possiblee sequences of the steps taken by this program fragment?

a. A(BIT)(BI) T
B. A(BIT)
C. A(BIT)
D. A(BIT) T
E. A(BIT) T

30) Consider the production grammer

S -> AB
S -> BC
A -> WA
A -> X
B -> Y
B -> ZB
C -> W

Consider this grammer together with one and only one of the productions (A) through(E).what production from the list may not be added to retain its status as an LL(1) grammer?

a. S -> CA
b. S -> Z
c. C -> Z
d. C -> BC
e. More than one of the above

31) Consider the function below:

function calc(x,y:integer):integer;
begin
if y=1
then calc:=x
else calc:=calc(x,y-1)+x
end;

assuming that the invocation call is "calc(a,b)"and that "a"and "b"are positive integers,what result does this function return?

a. a*(b-1)
b. a*b
c. a+b
d. a power b
e. a*b

32) In a left-to-right breadth-first search of the tree below,which would be first terminal node to be explored?

‾‾‾

‾‾‾

/ \

/ \

__/__ ____

__B__ ‾‾‾‾

a. F
b. B
c. I
d. J
e. E

33) Which data structure is needed to convert infix notations to postfix notations?

a. linear list
b. queue
c. tree
d. stack

34) Recursive procedures are implemented by

a. queues
b. stacks
c. linked lists
d. strings

35) A linear list of elments in which deletion can be done from one end (front)and insertion can take place only at the other end(rear)is known as

a. queues
b. stacks
c. trees
d. deque

36) A linear list in which elements can be added or removed at either end but not in the middle is known as

a. queue
b. deque
c. stack
d. tree

37) Which of the following sorting procedure is slowest

a. quick sort
b. heap sort
c. shell sort
d. bubble sort

38) How many 1's are present in the binary representation of 3 x 512 + 7 x 64 + 5 x 8 =3?

a. 8
b. 9
c.10
d.11
e.12

Ans. (d)

39) File record length

a. should always be fixed
b. should always be variable
c. depends upon the size of the file
d. should be choosen to match the data characteristics

Ans. (a)

40) NLP stands for

a. natural language processing
b. neuro logic programming
c. normal logic pad
d. nominal loadable process
e. none

Ans. (a)

MAHINDRA BRITISH TELECOM

There are **105 questions** to be done in **70 minutes**. The test is further subdivided and includes

   Quantitative Section (23Q)
   Analytical Section (20Q)
   Series& Venn Diagrams
   Logical Section (20Q)
   Reading Comprehension (10Q).
   Flow Sheets

Time span for each section is different. There is negative marking. We think that the cut-off would have been around 35-40.
We recommend that you refer to RS Agarwal Verbal and Nonverbal book for more questions on the same pattern.

ARITHMETIC SECTION
This section consists of 29 problems. The questions are simple though time consuming.

1. If a boat is moving in upstream with velocity of 14 km/hr and goes downstream with a velocity of 40 km/hr, then what is the speed of the stream ?

(a) 13 km/hr
(b) 26 km/hr
(c) 34 km/hr
(d) none of these

Ans. A

2. Find the value of (0.75 * 0.75 * 0.75 - 0.001) / (0.75 * 0.75 - 0.075 + 0.01)

(a) 0.845
(b) 1.908
(c) 2.312
(d) 0.001

Ans. A

3. A can have a piece of work done in 8 days, B can work three times faster than the A, C can work five times faster than A. How many days will they take to do the work together ?

(a) 3 days
(b) 8/9 days
(c) 4 days
(d) can't say

Ans. B

4. A car travels a certain distance taking 7 hrs in forward journey, during the return journey increased speed 12km/hr takes the times 5 hrs.What is the distance travelled

(a) 210 kms
(b) 30 kms
(c) 20 kms
(c) none of these

Ans. B

5. Instead of multiplying a number by 7, the number is divided by 7. What is the percentage of error obtained ?

6. Find (7x + 4y) / (x-2y) if x/2y = 3/2 ?

(a) 6
(b) 8
(c) 7
(d) data insufficient

Ans. C

7. A man buys 12 lts of liquid which contains 20% of the liquid and the rest is water. He then mixes it with 10 lts of another mixture with 30% of liquid.What is the % of water in the new mixture?

8. If a man buys 1 lt of milk for Rs.12 and mixes it with 20% water and sells it for Rs.15, then what is the percentage of gain?

9. Pipe A can fill a tank in 30 mins and Pipe B can fill it in 28 mins.If 3/4th of the tank is filled by Pipe B alone and both are opened, how much time is required by both the pipes to fill the tank completely ?

10. If on an item a company gives 25% discount, they earn 25% profit. If they now give 10% discount then what is the profit percentage.

(a) 40%
(b) 55%
(c) 35%
(d) 30%

Ans. D

11. A certain number of men can finish a piece of work in 10 days. If however there were 10 men less it will take 10 days more for the work to be finished. How many men were there originally?

(a) 110 men
(b) 130 men
(c) 100 men
(d) none of these

Ans. A

12. In simple interest what sum amounts of Rs.1120/- in 4 years and Rs.1200/- in 5 years
?

(a) Rs. 500
(b) Rs. 600
(c) Rs. 800
(d) Rs. 900

Ans. C

13. If a sum of money compound annually amounts of thrice itself in 3 years. In how
many years
will it become 9 times itself.

(a) 6
(b) 8
(c) 10
(d) 12

Ans A

14. Two trains move in the same direction at 50 kmph and 32 kmph respectively. A man
in the slower train
observes the 15 seconds elapse before the faster train completely passes by him.
What is the length of faster train ?

(a) 100m
(b) 75m
(c) 120m
(d) 50m

Ans B

15. How many mashes are there in 1 squrare meter of wire gauge if each mesh
is 8mm long and 5mm wide ?

(a) 2500
(b) 25000
(c) 250
(d) 250000

Ans B

16. x% of y is y% of ?

(a) x/y

(b) 2y
(c) x
(d) can't be determined

Ans. C

17. The price of sugar increases by 20%, by what % should a housewife reduce the consumption of sugar so that expenditure on sugar can be same as before ?

(a) 15%
(b) 16.66%
(c) 12%
(d) 9%

Ans B

18. A man spends half of his salary on household expenses, 1/4th for rent, 1/5th for travel expenses, the man deposits the rest in a bank. If his monthly deposits in the bank amount 50, what is his monthly salary ?

(a) Rs.500
(b) Rs.1500
(c) Rs.1000
(d) Rs. 900

Ans C

20. The population of a city increases @ 4% p.a. There is an additional annual increase of 4% of the population due to the influx of job seekers, find the % increase in population after 2 years ?

21. The ratio of the number of boys and girls in a school is 3:2 Out of these 10% the boys and 25% of girls are scholarship holders. % of students who are not scholarship holders.?

22. 15 men take 21 days of 8 hrs. each to do a piece of work. How many days of 6 hrs. each would it take for 21 women if 3 women do as much work as 2 men?

(a) 30
(b) 20
(c) 19
(d) 29

Ans. A

23. A cylinder is 6 cms in diameter and 6 cms in height. If spheres of the same size are made from the material obtained, what is the diameter of each sphere?

(a) 5 cms
(b) 2 cms
(c) 3 cms
(d) 4 cms

Ans C

24. A rectangular plank $(2)^{1/2}$ meters wide can be placed so that it is on either side of the diagonal of a square shown below.(Figure is not available)What is the area of the plank?

Ans :$7*(2)^{1/2}$

25. The difference b/w the compound interest payble half yearly and the simple interest on a
certain sum lent out at 10% p.a for 1 year is Rs 25. What is the sum?

(a) Rs. 15000
(b) Rs. 12000
(c) Rs. 10000
(d) none of these

Ans C

26. What is the smallest number by which 2880 must be divided in order to make it into a perfect square ?

(a) 3
(b) 4
(c) 5
(d) 6

Ans. C

27. A father is 30 years older than his son however he will be only thrice as old as the son after 5 years
what is father's present age ?

(a) 40 yrs
(b) 30 yrs
(c) 50 yrs
(d) none of these

Ans. A

28. An article sold at a profit of 20% if both the cost price and selling price would be Rs.20/- the profit would be 10% more. What is the cost price of that article?

29. If an item costs Rs.3 in '99 and Rs.203 in '00.What is the % increase in price?

(a) 200/3 %
(b) 200/6 %
(c) 100%
(d) none of these

Ans. A

LOGICAL SECTION

Directions: For questions 30-39 fill the missing number or letter in the given series

30. a, c, e, g, _

(a) h
(b) i
(c) d
(d) j

Ans. B

31. a, e, i, m, q, u, _, _

(a) y,c
(b) b,f
(c) g,i
(d) none

Ans. A

32. ay , bz , cw , dx ,__

(a) gu
(b) ev
(c) fv
(d) eu

Ans. D

33. 1, 2, 3, 5, 7, 11, __

(a) 15
(b) 9
(c) 13
(d) 12

Ans. C (series of prime numbers)

34. kp , lo , mn , __

(a) nm
(b) np
(c) op
(d) pq

Ans. A

35. R,M,__,F,D,__

(a) I, C
(b) A, Q
(c) L, N
(d) B, Q

Ans. A

36. ___, ayw, gec, mki, sqo

(a) awx
(b) usq
(c) prs
(d) lmn

Ans. B

37. 1, 3, 4, 8, 15, 27, __

(a) 60
(b) 59
(c) 43
(d) 50

Ans D

38. 0, 2, 3, 5, 8, 10, 15, 17, 24, 26,__

(a) 45
(b) 55
(c) 35
(d) 48

Ans. C

39. 2, 5, 9, 19, 37,__

(a) 64
(b) 55
(c) 75
(d) 40

Ans C

Directions for questions 40 to 45: Select the alternative that logically follows form the two given statements.

40. All scientists are fools. All fools are literates.

(a)All literates are scientists
(b) All scientists are literates
(c) No scientists are literates
(d) Both (a) and (b) are correct

Ans. B

41. No apple is an orange. All bananas are oranges.

(a) All apples are oranges
(b) Some apples are oranges
(c) No apple is a banana
(d) None of the above

Ans. A

42. All pens are elephants. Some elephants are cats.

(a) Some pens are cats
(b) No pens are cats
(c) All pens are cats
(d) None of the above

43. All shares are debentures.No debentures are deposits.

(a) All shares are deposits
(b) Some shares are deposits
(c) No shares are deposits
(d) None of the above

44. Many fathers are brothers. All brothers are priests.

(a) No father is a priest
(b) Many fathers are not priests
(c) Many fathers are priests
(d) Both (b) and (c)

45. Some green are blue. No blue are white.

(a) No green are white
(b) Some green are white
(c) No green are white
(d) None of the above

46. If the word "CODING" is represented as DPEJOH , then the word "CURFEW" can be represented?

(a) dvsgfx
(b) dvshfx
(c) dgshfx
(d) dtsgfy

47. If in a certain code "RANGE" is coded as 12345 and "RANDOM" is coded as 123678, then the code for the word "MANGO" would be

(a) 82357
(b) 84563
(c) 82346
(d) 82543

Ans. D

*Directions for questions 48-50:*The questions are based on the following data

In a class of 150 students 55 speak English;85 speak Telugu and 30 speak neither English nor Telugu

48. How many speak both English and Telugu?

(a) 10
(b) 15
(c) 20
(d) 12

Ans. C

49.How many speak only Telugu?

(a) 55
(b) 45
(c) 65
(d) none of the above

Ans.C

50.How many speak at least one of the two languages?

(a) 120
(b) 100
(c) 250
(d) 50

Ans. A

Refer R.S Agarwal books for more questions of the same kind
Verbal -- Page 254 problems 53 to56
          246 eg.2
          Page 104 Exercise.3a (Series Questions)
          Page 354-355 8,13,
          Page 115

Nonverbal -- Pages 5,41,54,108,145,158

MISTRAL SOLUTIONS

:

    :

   The written test consists of two sections: **Aptitude Section** and **C Section.** The **aptitude section** consists of **25 questions** to be solved **in minutes.** The **C Section** also consists of 25 questions, but to be solved **in minutes.**

   Both the sections are of **objective type.**

APPTITUDE TEST

1. At A&R auto repair shop, 2 mechanics can repair six cars in three hours. By this same reasoning how many mechanics will it take to repair 22 cars in five hours?

   a. 8   *b. 5*   c. 7   d. 6   e. not sure

2. A worker of the CIA(cybernetic information association) is translating information in to a code sequence, so that competitors who might steal the information will not be able to make use of it. The worker is currently translating a word that u can find somewhere in this problem into this code. What number completes this word.: 8 22 10 6 22 13 24 ?

   a. 5   b. 16   *c. 22*   d. 26

e. not sure

3.I really need to get a new watch. It correctly reads the time as 4:12pm,but three hours later it reads 8pm.two hours after that it reads 10.32pm.what time will it read when it is actually 3.42am?

   a. 6:46am   b. 1:38am   c. 8:24am   d. 6:26am

e. not sure

4.how many cards are there in a full tarot deck?

   a. 52   b. 78   c. 96

d. 113   e. not sure

5.what is Excalibur?

   a. King   b. Mage   c. Mythical

city   d. sword   e. not sure

6.How many days are there in a fortnight?

   a. 15   *b. 14*   c. 10

d. 2   e. not sure

7.What was sundial used for?

   a. regulating temperature   b. refracting light

c. measuring time

   d. scrambling radio waves   e. not sure

8.who wrote hunchback of Notre dame?

   a. Hugo   b. Pierre

c. Walters   d. Anderson   e. not sure

9.What is Clark Kent also known as??

a. Dr. Death   b. Human Torch   *c. Superman*   d. Lone Avenger   e. not sure

10.A dresser drawer contains 15 garments. If 40% of those are blouses. How many are not blouses?

a. 6   b. 8   *c. 9*
d. 10   e. not sure

11. If the length of each of the sides of 3square garden plots is increased by 50%,by what % is the sum of the areas of the 3plots increased?

a. 375%   b. 200%   c. 150%   d. 125%
e. not sure

12. Which of the following equations gives the relationship between R and S in table below?

R	1	2	3	4	5	6
S	2	5	8	11	14	17

a. S=2R   b. S=R^2+1   c. S=R^2-1   *d. S=3R-1*
e. not sure

13. If the length of a rectangle is increased by 20% and the width of the same rectangle is decreased by 20% then the area of the rectangle?

a. decr.by 20%   *b. decr.by 4%*   c. unchanged   d. incr.by 20%   e. not sure

14. If n and p r both odd numbers, which of the following numbers must be an even number??

a. n+p   b. np   c. np+2   d. n+p+1
e. not sure

15. If 2 places r one inch apart on a map, then they r actually 160miles apart. (the scale on the map is 1inch=160miles)if Seton is 2 7/8 inches from Monroe on the map, how many miles is it from Seton to Monroe?

a. 460   b. 300   c. 27   d. 360
e. not sure

16. A screw driver and a hammer currently have the same price. If the price of the screw driver rises by 5% and the price of hammer goes up by 3%, by what percent will the cost of 3 screwdrivers and 3 hammers price?

a. 3%   *b. 4%*   c. 8%
d. 25%   e. not sure

17. If the average (or arithmetic mean) of six numbers is 4.5, what is the sum of the numbers?

    a. 4.5   b. 24

c. 27   d. 30   e. not sure

Read the following and answer the questions below:

        The office staff of XYZ corporation presently consists of 3 bookkeepers (A, B, C) and 5 Secretaries (D, E, F, G, H). Management is planning to open a new office in another city using 3 secretaries and 2 book keepers of the present staffs. To do so they plan to separate certain individuals who do not function well together. The following guidelines were established to set up the new office.

  A) Book keepers A & C are constantly finding fault with one another and should not be send as a team to the new office

  B) C & E function well alone but not as a team . They should be separated.

  C) D & G have not been on speaking term for many months. They should not go together.

  D) Since D & F have been competing for promotion, they should not be a team.

18. If A is to be moved as one of the book keepers, which of the following cannot be the possible working unit

    a. ABDEH   *b. ABDGH*   c. ABEFH

d. ABEGH   e. not sure

19. If C &F are moved to the new office, how many combinations are possible.

    a. 1   b. 2   c. 3

d. 4   e. not sure

20. If C is send to the new office which member of the staff cannot go with C

    a. B   *b. D*   c. F

d. G   e. not sure

21. Under the guidelines developed, which of the following must go to the new office.

    a. B   b. D   c. E

d. G   e. not sure

22. If D goes to the new office which of the following is (are) true?

      i. C cannot go

      ii. A cannot go

      iii. H must also go

    a. i only   b. ii only   *c. i&iii only*   d. i, ii,

iii   e. not sure

23. At luncheon table were 12 men are seated, one-half of the men belongs to club A,

one-third belongs to club B and one-fourth belongs to both club. How many belongs to neither.

    a. 3   b. 4   *c. 5*
d. 6   e. not sure

For each analogy, find the answer that best completes the problem:

24. Thieves: Den :: Cards: ?

    a. Game   *b. Deck*   c. Set
d. Group   e. not sure

25. Body: Helmet :: Finger: ?

    a. Thimble   b. Nail   *c. Glove*
d. Bandage   e. not sure

C TEST

. What does the following program print?

```
#include <stio.h>
int sum,count;
void main(void)
{< BR>                    for(count=5;sum+=--count;)
   printf("%d",sum);
}
```

    a. The pgm goes to an infinite loop   b. Prints 4791010974
c. Prints 4791001974
    d. Prints 5802112085   e. Not sure

2. What is the output of the following program?

```
#include <stdio.h>
void main(void)
{
   int i;< BR>                    for(i=2;i<=7;i++)
   printf("%5d",fno());
}
fno()
{
   staticintf1=1,f2=1,f3;
   return(f3=f1+f2,f1=f2,f2=f3);
}
```

    a. produce syntax errors   b. 2 3 5 8 13 21 will be displayed   c.
2 2 2 2 2 2 will be displayed
    d. none of the above   e. Not sure

3. What is the output of the following program?

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

```
{
    int x = 0x1234;
    int y = 0x5678;
    x = x & 0x5678;
    y = y | 0x1234;
    x = x^y;
    printf("%x\t",x);
    x = x | 0x5678;
    y = y & 0x1234;
    y = y^x;
    printf("%x\t",y);
}
```
a. bbb3   bbb7   b. bbb7   bbb3   c.
444c   4448
    d. 4448   444c   e. Not sure

4. What does the following program print?
```
#include <stdio.h>
void main (void)
{
    int x;
    x = 0;
    if (x=0)
    printf ("Value of x is 0");
    else
    printf ("Value of x is not 0");
}
```
    a. print value of x is 0   b. print value of x is not 0   c. does not
print anything on the screen
    d. there is a syntax error in the if statement   e. Not sure

5. What is the output of the following program?
```
#include <stdio.h>
#include <string.h>
int foo(char *);
void main (void)
{
    char arr[100] = {"Welcome to Mistral"};
    foo (arr);
}
foo (char *x)
{
    printf ("%d\t",strlen (x));
    printf ("%d\t",sizeof(x));
    return0;
}
```

a. 100 100   b. 18 100   c. 18 18   d. 18
2   e. Not sure

6. What is the output of the following program?

```
#include <stdio.h>
display()
{
   printf ("\n Hello World");
   return 0;
}
void main (void)
{
   int (* func_ptr) ();
   func_ptr = display;
   printf ("\n %u",func_ptr);
   (* func_ptr) ();
}
```

a. it prints the address of the function display and prints Hello World on the screen
b. it prints Hello World two times on the screen
c. it prints only the address of the fuction display on the screen
d. there is an error in the program   e. Not sure

7. What is the output of the following program?

```
#include <stdio.h>
 void main (void)
{
   int i = 0;
   char ch = 'A';
   do
      putchar (ch);
   while(i++ < 5 || ++ch <= 'F');
}
```

a. ABCDEF will be displayed   b. AAAAAABCDEF will displayed
c. character 'A' will be displayed infinitely   d. none   e. Not sure

8. What is the output of the following program?

```
#include <stdio.h>
#define sum (a,b,c) a+b+c
#define avg (a,b,c) sum(a,b,c)/3
#define geq (a,b,c) avg(a,b,c) >= 60
#define lee (a,b,c) avg(a,b,c) <= 60
#define des (a,b,c,d) (d==1?geq(a,b,c):lee(a,b,c))
void main (void)
{
```

```
                      int num = 70;
                      char ch = '0';
                      float f = 2.0;
                      if des(num,ch,f,0) puts ("lee..");
                      else puts("geq...");
                  }
```

a. syntax error   b. geq... will be displayed   c. lee.. will be displayed

d. none   e. Not sure

9. Which of the following statement is correct?

a. sizeof('*') is equal to sizeof(int)   b. sizeof('*') is equal to sizeof(char)

c. sizeof('*') is equal to sizeof(double)   d. none   e. Not sure

10. What does the following program print?

```
            #include <stdio.h>
            char *rev(int val);
            void main(void)
            {
               extern char dec[];
               printf ("%c", *rev);
            }
            char *rev (int val)
            {
               char dec[]="abcde";
               return dec;
            }
```

a. prints abcde   b. prints the address of the array dec

c. prints garbage, address of the local variable should not returned   d. print a   e. Not sure

11. What does the following program print?

```
            void main(void)
            {
               int i;
               static int k;
               if(k=='0')
                  printf("one");
               else if(k== 48)
                  printf("two");
               else
                  printf("three");
            }
```

a. prints one   b. prints two   c. prints three

        d. prints one three   e. Not sure

12. What does the following program print?

```
#include<stdio.h>
void main(void)
{
  enum sub
  {
    chemistry, maths, physics
  };
  struct result
  {
    char name[30];
    enum sub sc;
  };
  struct result my_res;
  strcpy (my_res.name,"Patrick");
  my_res.sc=physics;
  printf("name: %s\n",my_res.name);
  printf("pass in subject: %d\n",my_res.sc);
}
```

a. name: Patrick   b. name: Patrick   c. name: Patrick

        pass in subject: 2   pass in subject:3   pass in subject:0

    d. gives compilation errors   e. Not sure

13. What does

        printf("%s",_FILE_); and printf("%d",_LINE_); do?

    a. the first printf prints the name of the file and the second printf prints the line no: of the second printf in the file

    b. _FILE_ and _LINE_ are not valid parameters to printf function

    c. linker errors will be generated   d. compiler errors will be generated   e. Not sure

14. What is the output of the following program?

```
#include <stdio.h>
void swap (int x, int y, int t)
{
  t = x;
  x = y;
  y = t;
  printf ("x inside swap: %d\t y inside swap : %d\n",x,y);
}
```

```
void main(void)
{
   int x;
   int y;
   int t;
   x = 99;
   y = 100;
   swap (x,y,t);
   printf ("x inside main:%d\t y inside main: %d",x,y);
}
```

a. x inside swap : 100   y inside swap : 99   x inside main : 100   y inside main : 99
b. x inside swap : 100   y inside swap : 99   x inside main : 99   y inside main : 100
c. x inside swap : 99   y inside swap : 100   x inside main : 99   y inside main : 100
d. x inside swap : 99   y inside swap : 100   x inside main : 100   y inside main : 99
e. Not sure

15. Consider the following statements:
        i) " while loop " is top tested loop   ii) " for loop " is bottom tested
loop
        iii) " do - while loop" is top tested loop   iv) " while loop" and "do - while
loop " are top tested loops.
   Which among the above statements are false?
     a. i only   b. i & ii   c. iii & i   d. ii, iii &
iv   e. Not sure

16. Consider the following piece of code:
```
            char *p = "MISTRAL";
            printf ("%c\t", *(++p));
            p -=1;
            printf ("%c\t", *(p++));
```
   Now, what does the two printf's display?
     a. M M   b. M I   c. I M   d. M
S   e. Not sure

17. What does the following program print?
```
            #include <stdio.h>
            struct my_struct
            {
               int p:1;
               int q:1;
               int r:6;
               int s:2;
            };
            struct my_struct bigstruct;
            struct my_struct1
```

```
                  {
                     char m:1;
                  };
                  struct my_struct1 small struct;
                  void main (void)
                  {
                     printf ("%d %d\n",sizeof (bigstruct),sizeof (smallstruct));
                  }
```
   a. 10 1   b. 2 2   c. 2 1   d. 1
1   e. Not sure

18. Consider the following piece of code:
```
                  FILE *fp;
                  fp = fopen("myfile.dat","r");
```
   Now fp points to
      a. the first character in the file.
      b. a structure which contains a char pointer which points to the first character in the
file.
      c. the name of the file.   d. none of the
above.   e. Not sure.

19. What does the following program print?
```
                  #include <stdio.h>
                  #define SQR (x) (x*x)
                  void main(void)
                  {
                     int a,b=3;
                     a = SQR (b+2);
                  }
```
   a. 25   b. 11   c. 17   d.
21   e. Not sure.

20. What does the declaration do?
```
                  int (*mist) (void *, void *);
```
      a. declares mist as a function that takes two void * arguments and returns a pointer
to an int.
      b. declares mist as a pointer to a function that has two void * arguments and returns
an int.
      c. declares mist as a function that takes two void * arguments and returns an int.
      d. there is a syntax error in the declaration.   e. Not sure.

21. What does the following program print?
```
                  #include <stdio.h>
                  void main (void)
                  {
```

```
                int mat [5][5],i,j;
                int *p;
                p = & mat [0][0];
                for (i=0;i<5;i++)
                   for (j=0;j<5;j++)
                     mat[i][j] = i+j;
                printf ("%d\t", sizeof(mat)); < BR>                    i=4;j=5;
                printf( "%d", *(p+i+j));
              }
```

  a. 25 9   b. 25 5   c. 50 9   d. 50
5   e. Not sure

22. What is the output of the following program?
```
                #include <stdio.h>
                void main (void)
                {
                   short x = 0x3333;
                   short y = 0x4321;
                   long z = x;
                   z = z << 16;
                   z = z | y;
                   printf("%1x\t",z);
                   z = y;
                   z = z >> 16;
                   z = z | x;
                   printf("%1x\t",z);
                   z = x;
                   y = x && y;
                   z = y;
                   printf("%1x\t",z);
                }
```
  a. 43213333   3333   1   b. 33334321   4321   4321   c.
33334321   3333   1
  d. 43213333   4321   4321   e. Not sure

23. What is the output of the following program?
```
                #include <stdio.h>
                void main (void)
                {
                   char *p = "Bangalore";
                   #if 0
                      printf ("%s", p);
                   #endif
                }
```
  a. syntax error #if cannot be used inside main function   b. prints
Bangalore on the screen

c. does not print anything on the screen

d. program gives an error "undefined symbol if"   e. Not sure

24. If x is declared as an integer, y is declared as float, consider the following expression:

     y = *(float *)&x;

   Which one of the following statments is true?

   a. the program containing the expression produces compilation errors;

   b. the program containing the expression produces runtime errors;

   c. the program containing the expression compiles and runs without any errors;

   d. none of the above   e. Not sure

25. What is the return type of calloc function?

   a. int *   b. void *   c. no return type: return type is void

   d. int   e. Not sure

The test is followed by a Technical and a HR interview. The technical interview is highly specialized and covers almost all subjects you have done in your curriculum. Special emphasis is laid on C and Data Structures. The technical interview is followed by an H R interview

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NOVEL NETWARE

The written paper is of **one hour duration and consists 30 questions which are divided into three sections** :

- **Aptitude** Section   - 15 questions in 20 minutes.
- **Technical** Section   - 25 questons in 20 minutes.
- **C Programming** Section - 15 questions in 20 minutes.

   In the technical section, questions from **Microprocessors, Operating Systems, Computer Networks etc**. are asked.

   All questions are multiple choice type.

The paper consists of three sections.

1. Aptitude 15 questions 20 min
2. System concepts 20 questions 20 min.
3. 'C' 15 questions 20 min.

Section 1

Question 1 to 5 have to be answered on the basis of the information given below:

On Sunday, December 23, four ships were berthed at the Port.

- Ship W left at 4 PM on Sunday, December 23, for a series of 8-day cruises to Bermuda and Nassau.
- Ship X left at 4:30 PM on Sunday, December 23, for a series of alternating11-day and 13-day cruises.
- Ship Y sailed at 5 PM on Sunday, December 23, for a series of 5-day cruises to Bermuda.
- Ship Z sailed on Monday, Decmeber 24, for a series of 7-day cruises to Nassau.

Each cruise begins on the day after departure.
Each ship is scheduled to return to the Port early in the morning after the last day of the cruise and leave again in the afternoon of the same day.
(From 1999 Barrons GRE book Model Test 3 - Section 5 - Q8 to Q12)

1. On December 31, which ships will be sailing from the Port on a New Year's Eve.

(a) W and X
(b) X and Y
(c) W and Z
(d) X and Z
(e) X, Y and Z

Ans: (c)

2. On how many sailing dates between December 24 and February 28 will ship W be moored alongside another ship

(a) 0
(b) 2
(c) 4
(d) 5
(e) 6

Ans: (d)

3. On how many occasions between December 24 and February 28 will three ships be moored at the Port.

(a) 0
(b) 1
(c) 2
(d) 3
(e) 4

Ans: (a)

4. On which day of the week will these four ships make most of their departures?

(a) Sunday
(b) Monday
(c) Tuesday
(d) Thursday
(e) Saturday

Ans: (b)

5. On which days of the week in the period between December 24 and February 28 will the pier be least crowded?

(a) Tuesday and Friday
(b) Tuesday and Thursday
(c) Friday and Saturday
(d) Wednesday and Thursday
(e) Thursday and Saturday

Ans: (a)

6. A family with a husband, his wife and their child are at one side of river.
   They want to cross the river on a boat. The child can't be left alone.
   The only available boat can hold only one person and the boatboy.
   Only the boatboy can row the boat.
   What is the minimum number of trips from on bank to the other, that the boatboy has to make
   for the whole family to reach the other side.

Question 7 to 10 have to be answered on the basis of the information given below:

The workweek in a small business is a five-day workweek running from Monday through Friday.
In each workweek, activities L,M,N,O and P must all be done.The work is subject to the following restrictions:

- L must be done earlier in the week than O and earlier than P
- M must be done earlier in the week than N and earlier than O
- No more than one of the activities can ever be done on any one day

7.Which of the following is an acceptable schedule starting from Monday to Friday

a) L, M, N, O, P
b) M, N, O, N, M
c) O, N, L, P, M
d) P, O, L, M, L
e) P, O, L, M, N

Ans. (a)

8. Which of the following pair of activies could be done on Monday and Tuesday

a) L and O
b) M and L
c) M and P
d) N and O
e) O and M

Ans. (b)

9.If P and N are done on Thursday and Friday, then which of the following is true

a) L is done on Tuesday
b) L is done on Wednesday
c) M is done on Monday
d) O is done on Tuesday
e) O is done on Wednesday

Ans. (e)

10. Which of the following could be true

a) L on Friday
b) M on Thursday
c) N on Monday
d) O on Monday
e) P on Tuesday

Ans. (e)

Rest of the paper is based on similar questions.
I donot remember them completely but I'll just give a basic idea about them below

* 5 programs are sheduled from monday to saturday, monday is not holiday, PQRST are the programs. The day before P is holiday, and some other clues are given, we have to find the sequence (4 questions)

* Suppose U R the presoner, There are two guards Who will tell truth or one will tell truth. There is a gate for liberty and another foe hell.
asking about which sequencing is sufficient to find the gate for liberty??

* There are 7 targets, A B and C has to shoot them.
All should be shot down consecutively.
1. The number of chances for A and B are not less then 2,
2. C has only one chance
3. A can't shot 3 times consicutively.
4. B is permited to shoot in even chances only.

They have given some 2 or 3 MCQ questions on this.

Section 2

1. Encryption and decryption is done in the following layer.

a) DLL
b) Network layer
c) Transport
d) Presentation

Ans: (d)

2. Floating point has different formats on two different machines.
   This modifications are taken care by which layer?

a) DLL
b) Network layer
c) Transpor layer
d) Presentation

Ans: (d)

3. Time complexity of quick sort algorithm is

a) N*N
b) log(N)
c) N*log(N)
d) N

Ans: (c)

4. Time complexity of AVL tree is .

a) N*N
b) log(N)
c) N*log(N)
d) N

Ans: (b)

5. Cycle stealing is used in which concept?

a) Programmed I/O
b) DMA
c) Interrupts

Ans: (b)

6. How many octets are there in an IP address

a) 6
b) 8
c)10
d)12

7.What are the maximum number of hosts that can be served by an IP

a) 254
b) 256
c) 2**24(2 to the power 24)

8. Which of the following is model representation of life cycle software

a) Water fall model
b) Spiral

9. The purpose of reviewing code is

a) To find syntax error
b) Tocheck for the proper design

10. Semaphores are used for the resolution of

a) Contention
b) Accessing of same resources by more than one

11.In threading of processes when the race condition will happen

a) Low priority process
b) Higher priority process

(See O.S.Concepts by Silberschatz)

12.Which of the following function is not performed by O.S.

a) CPU sheduling
b) Memory management
c) Transaction

Ans: (c)

13. If two applicaltion programmes uses same libraries which of following are shared

a) Lib code
b) Code and stack
c) Data
d) Data, code and stack

14. Which is the maximum 16 bit signed integer.

a) 66337
b) 66338
c) 257
d) 258

15.When will interrupt occurs?

a) Divide by zero
b) DMA completed
c) Insufficient memory

16. Which of the following has low power cosumption

a) EIL
b)CMOS
c) Totempole Arrangement

17. Which of the following is the wrong statement

a) Cominational circuits has memory
b) Sequential circuits has memory
c) Sequential circuits is a function of time

Ans: (a)

18.Virtual address is

a) More than physical address
b) Lessthan physical memory
c) Equal to physical memory
d) None

Ans : (a)

19. Which of the following reduces CPU burden

Ans : DMA

20. Malloc function allocates memory at

a) compilation time
b)link
c)load
d)running

Ans: d

Section 3

1.Max value of SIGNED int

2. A long C program is given -- try to be familiar with few of the concepts listed below

```
int *num={10,1,5,22,90};
main()
{
int *p,*q;
int i;
p=num;
q=num+2;
i=*p++;
print the value of i, and q-p, and some other operations are there.
}
```
how the values will change?

3. One pointer diff is given like this:

int *(*p[10])(char *, char*)

Explain the variable assignment

4. char *a[4]={"jaya","mahe","chandra","buchi"};
   What is the value of sizeof(a) /sizeof(char *)

5. For the following C program

```
void fn(int *a, int *b)
{int *t;
t=a;
a=b;
b=t;
}

main()
{int a=2;
```

```
int b=3;
fn(&a,&b);
printf("%d,%d", a,b);
}
```

What is the output?

a) Error at runtime
b) Compilation error
c) 2 3
d) 3 2

6. For the following C program

```
#define scanf "%s is a string"
main()
{printf(scanf,scanf);
}
```

What is the output.

Ans. %s is string is string

7. For the following C program

```
{char *p="abc";
char *q="abc123";
while(*p=*q)
print("%c %c",*p,*q);
}
```

a) aabbcc
b) aabbcc123
c) abcabc123
d) infinate loop

8. What is the value of the following:

```
printf("%u",-1)
```

a) -1
b) 1
c) 65336

9. For the following C program

```
#define void int
int i=300;
void main(void)
{int i=200;
{int i=100;
print the value of i;}
print the value of i;}
```

What is the output?

10. For the following C program

```
int x=2;
x=x<<2;
printf("%d ",x);
```

Ans. 8

11. For the following C program

```
int a[]={0,0X4,4,9}; /*some values are given*/
int i=2;
printf("%d %d",a[i],i[a]);
```

What is the value?

NECLEUS S/W

The written test consists of three sections.
Section 1 is an **aptitude section** and consists of **MCQ's**
Section 2 is **technical section** and also has **MCQ's** with questions concerning **OS** and
programming languages like **C , Cobol and Java**

Aptitude Section

Q. 5 men or 8 women do equal amount of work in a day. a job requires 3 men and 5 women to finish the job in 10 days how many woman are required to finish the job in 14 days.

a) 10
b) 7
c) 6
d) 12

Ans 7

Q. A simple interest amount of rs 5000 for six month is rs 200. what is the anual rate of interest?

a) 10%
b) 6%
c) 8%
d) 9%

Ans 8%

Q. In objective test a correct ans score 4 marks and on a wrong ans 2 marks are ---. a student score 480 marks from   150 question. how many ans were correct?

a) 120
b) 130
c) 110
d) 150

Ans130.

Q. An artical sold at amount of 50% the net sale price is rs 425 .what is the list price of the artical?

a) 500
b) 488
c) 480
d) 510

Ans 500

Technical Section

Q. You are creating a Index on EMPNO column in the EMPLOYEE table. Which statement will you use?
a) CREATE INdEX emp_empno_idx ON employee, empno;
b) CREATE INdEX emp_empno_idx FOR employee, empno;
c) CREATE INdEX emp_empno_idx ON employee(empno);
d) CREATE emp_empno_idx INdEX ON employee(empno);

Ans. c

Q. Which program construct must return a value?
a) Package
b) Function
c) Anonymous block
d) Stored Procedure
e) Application Procedure

Ans. b

Q. Which Statement would you use to remove the EMPLOYEE_Id_PK PRIMARY KEY constraint and all depending constraints fromthe EMPLOYEE table?
a) ALTER TABLE employee dROP PRIMARY KEY CASCAdE;
b) ALTER TABLE employee dELETE PRIMARY KEY CASCAdE;
c) MOdIFY TABLE employee dROP CONSTRAINT employee_id_pk CASCAdE;
d) ALTER TABLE employee dROP PRIMARY KEY employee_id_pk CASCAdE;
e) MOdIFY TABLE employee dELETE PRIMARY KEY employee_id_pk CASCAdE;

Ans. a

Q. Which three commands cause a transaction to end? (Chosse three)
a) ALTER
b) GRANT
c) DELETE
d) INSERT
e) UPdATE
f) ROLLBACK

Ans. a ,b ,f

Q. Under which circumstance should you create an index on a table?
a) The table is small.
b) The table is updated frequently.
c) A columns values are static and contain a narrow range of values

d) Two columns are consistently used in the WHERE clause join condition of SELECT statements.

Ans.d

Q. What is the common standard naming convention of checkbox control?

a) CHB
b) CHK
c) CHX
d) CBX

Q. Which of the function returns a reference to an object provided by an ActiveX component.

a) createobject
b) getobjectname
c) createobjectx
d) getobject

Q. We have something like Global functions in JAVA, they are called as .....

a) class
b) package
c) file
d) include

Q. Which all OS supports Networking?

a) Windows 95
b) Linux
c) Windows 3.0
d) Unix

Q. Which of the following is not an RdBMS?

a) Ingres
b) Oracle
c) Unify
d) Clipper

Q. Shell function in VB is used for calling

a) Another Function
b) Another Procedure
c) Another Application
d) None

Q. The RdBMS which satisfies the most number of its Principle among the followings

a) MS SqlServer
b) Oracle 7.3
c) Informix
d) Sybase

Q. Normalization is considered to be complete when it is in

a) Second Form
b) Third Form
c) First Form
d) None

Q. Two databases can be connected with

a) Where Clause
b) creating link
c) using dbo.<database>
d) Both B & C

Q. C++ is similar to that of C in following ways

a) C++ has classes
b) Supports Inheritance
c) File Handling
d) None

Q. Which of the following is not system file.

a) .ini
b) .sys
c) .com
d) None

Q. Following command is used to register any dll or ocx in registry of the system

a) regserver32
b) registersvr
c) regsrv32
d) regsvr32

Q. Which keyword is used to unregister any dll or ocx in registry of the system

a) -u
b) -r
c) -d
d) -x

Q. Which is not the most important & widely used form of Normalization ?

a) Boyce-Codd Normal Form
b) Second Form
c) Third Form
d) Royce-Codd Normal Form

Q. How can the word YES be stored in any array.

a)
array[1] = 'Y'
array[2] = 'E'
array[3] = 'S'
array[4] = '\0'
b)
array[0] = "Y"
array[1] = "E"
array[2] = "S"
array[3] = "\0"
c)
array[1] = "Y"
array[2] = "E"
array[3] = "S"
d)
array[0] = 'Y'
array[1] = 'E'
array[2] = 'S'
array[3] = '\0'

Q. Which of the following keyword is used to exit unconditionally from the batch?

a) go
b) return
c) Begin & End
d) Commit Tran

Q. != is a ---------- operator.

a) relational
b) logical
c) String
d) arithmetic

Q. What was the first name given to Java Programming Language.

a) Oak - Java
b) Small Talk
c) Oak
d) None

Ans.a

Q. The syntax of Java is similar to that of

a) C
b) Small Talk
c) FORTRAN
d) C++

Q. Which of the following statement is true

Table in a database can have
a) One Non-Clustered Index and Many Clustered Indexes.
b) One Clustered Index and Many Non-Clustered Indexes.
c) One Index each of Clustered and Non-Clustered Index.
d) None

Q. Check the error in the following statement

Country[7] = 'CANADA'

a) A string terminator is not added to the string, when declared.
b) Country array should be of six
c) Canada should be specified in double quotes.
d) Country array should have the keyword char to ensure array type.

Q. An application updates table "A",which causes trigger T1 to fire. T1 updates table "B", which in turns fires trigger T2.   T2 updates table "A", which causes trigger T1 to fire again. This is an example of

a) Indirect Recursive Trigger
b) direct Recursive Trigger
c) Multiple Trigger
d) Non Recursive Trigger

Q. Linda wants to obtain the nearest integer of a numeric expression for some calculation purpose. Which mathematical   function will she use:

a) Round
b) ABS
c) About
d) None

Q. Alphanumeric constants are

a) used for arithmetic calculations
b) Used with double quotas
c) Of integer type or float type
d) Not used for arithmetic calculations

Q. Pseudocode is a

a) set of Instructions to perform a particular task
b) is a formalized graphic representation of program logic.
c) is a algorithm expressed in a simple language
d) Both A & C

Q. A company has closed down its advertisement dept and is now getting all advertisement done by an Ad-Agency. All 20 people working in the dept has quit the job. The dept to which an employee belonged was stored in the "cdept" attribute of "emp" table. Which of the following statement would be used to do the changes in the "emp"

table

a) Alter Table
b) Drop Table
c) Delete Table
d) Truncate Table

Q. John wants to retrieve all records from students table who live in any city beginning with WAS . Which of the following statement is to be executed by him

a) Select * from students where city = 'WAS'
b) Select * from students where city = 'WAS%'
c) Select * from students where city in 'WAS'
d) Select * from students where city like 'WAS%'

Q. Why is a Modulo operator used?

a) It is used to determined the remainder, when an integer is divided by another.
b) It is used to calculate the percentage
c) It is used to determine the factorial of a number.
d) It is used as a relational operator.

Q. Consider the following program:

```
character cName[5] = 'great'
Numeric nNum1,nNum2 =0

For (nNum1 = 0;nNum1=>5;nNum1++)
{
if(cName[nNum1] == 'a'| cName[nNum1] != 'e'| cName[nNum1] = = 'i'| cName[nNum1]
!= 'o'| cName[nNum1] == 'u'|)
{
nNum2 ++
}
}
display nNum2
```

What does nNum2 display.

a) 2
b) 1
c) 5
d) 3

The test is followed by a Technical and a HR interview. The technical interview is highly specialized and covers almost all subjects you have done in your curriculum. Special emphasis is laid on C and Data Structures. The technical interview is followed by an H R interview.

ORACLE CORPORATION

The written test consists of **30 questions** which are of **M**ultiple **C**hoice **Q**uestion type. The first ten questions are based on the **analytical** and **reasoning** abilities. The next ten questions are **database** based and are simple. The last ten questions are based on **C** language. The **duration** of the test is minutes

1. Three beauty pageant finalists-Cindy, Amy and Linda-The winner was musician. The one who was not last or first was a math major. The one who came in third had black hair. Linda had red hair. Amy had no musical abilities. Who was first?
    (A) Cindy   (B) Amy   (C) Linda   (D) None of these

2. Two twins have certain peculiar characteristics. One of them always lies on Monday, Wednesday, Friday. The other always lies on Tuesdays, Thursday and Saturdays. On the other days they tell the truth. You are given a conversation.
        Person A- today is Sunday, my name is Anil
        Person B-today is Tuesday, my name is Bill   What day is today?
    (A) Sunday   (B) Tuesday   (C) Monday
(D) Thursday

3. The difference of a number and its reciprocal is 1/2.The sum of their squares is
    (A) 9/4   (B) 4/5   (C) 5/3   (D) 7/4

4. The difference of a number and its square is 870.What is the number?
    (A) 42   (B) 29   (C) 30   (D) 32

5. A trader has 100 Kg of wheat, part of which he sells at 5% profit and the rest at 20% profit. He gains 15% on the whole. Find how much is sold at 5% profit?
    (A) 60   (B) 50   (C) 66.66
(D) 33.3

6. Which of the following points are collinear?
    (A) (3,5) (4,6) (2,7)   (B) (3,5) (4,7) (2,3)
    (C) (4,5) (4,6) (2,7)   (D) (6,7) (7,8) (2,7)

7. A man leaves office daily at 7pm.a driver with car comes from his home to pick him from office and bring back home. One day he gets free at 5.30 and instead of waiting for driver he starts walking towards home. In the way he meets the car and returns home on

car. He reaches home 20 minutes earlier than usual. In how much time does the man reach home usually?

      (A) 1 hr 20 min   (B) 1 hr   (C) 1 hr 10 min
(D) 55 min

8. If m:n = 2:3,the value of 3m+5n/6m-n is

      (A) 7/3   (B) 3/7   (C) 5/3   (D) 3/5

9. A dog taken four leaps for every five leaps of hare but three leaps of the dog is equal to four leaps of the hare. Compare speed?

      (A) 12:16   (B) 19:20   (C) 16:15   (D) 10:12

10. A watch ticks 90 times in 95 seconds. And another watch ticks 315 times in 323 secs. If they start together, how many times will they tick together in first hour?

      (A) 100 times   (B) 101 times   (C) 99 times
(D) 102 times

11. The purpose of defining an index is

      (A) Enhance Sorting Performance   (B) Enhance Searching Performance

      (C) Achieve Normalization   (D) All of the above

12. A transaction does not necessarily need to be

      (A) Consistent   (B) Repeatable   (C) Atomic   (D) Isolated

13. To group users based on common access permission one should use

      (A) User Groups   (B) Roles   (C) Grants   (D) None of the above

14. PL/SQL uses which of the following

      (A) No Binding   (B) Early Binding   (C) Late Binding
(D) Deferred Binding

15. Which of the constraint can be defined at the table level as well as at the column level

      (A) Unique   (B) Not Null   (C) Check   (D) All the above

16. To change the default date format in a SQLPLUS Session you have to

      (A) Set the new format in the DATE_FORMAT key in the windows Registry.
      (B) Alter session to set NLS_DATE-FORMAT.
      (C) Change the Config.ora File for the date base.
      (D) Change the User Profile USER-DATE-FORMAT.

17. Which of the following is not necessarily an advantages of using a package rather than independent stored procedure in data base.

      (A) Better performance.   (B) Optimized memory

usage.
      (C) Simplified Security implementation.   (D) Encapsulation.

18. Integrity constrains are not checked at the time of
      (A) DCL Statements.   (B) DML Statements.
      (C) DDL Statements.   (D) It is checked all the above cases.

19. Roll Back segment is not used in case of a
      (A) DCL Statements.   (B) DML Statements.   (C) DDL Statements.
(D) all of the above.

20. An Arc relationship is applicable when
      (A) One child table has multiple parent relation, but for anyone instance of a child record only one of the relations is applicable.
      (B) One column of a table is related to another column of the same table.
      (C) A child table is dependent on columns other than the primary key columns of the parent table.
      (D) None of the above.

21. What is true about the following C functions?
      (A) Need not return any value.   (B) Should always return an integer.
      (C) Should always return a float.   (D) Should always return more than one value.

22. enum number { a=-1, b=4, c,d,e,} what is the value of e?
      (A) 7   (B) 4   (C) 5   (D) 3

23. Which of the following about automatic variables within a function is correct?
      (A) Its type must be declared before using the variable.   (B) They are local.
      (C) They are not initialized to zero.   (D) They are global.

24. Consider the following program segment
```
                int n, sum=5;
                switch(n)
                {
                   case 2:sum=sum-2;
                   case 3:sum*=5;
                   break;
                   default:sum=0;
                }
```
   if n=2, what is the value of the sum?
      (A) 0   (B) 15   (C) 3   (D) None of these.

25. Which of the following is not an infinite loop?

  (A) x=0;   (B) # define TRUE 0....
      do{   While(TRUE){....}
          /*x unaltered within the loop*/   (C) for(;;)   {....}
        ....}
      While(x==0);   (D) While(1) {....}

26. 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;
          }
   }
}
```

    (A) 5,9,13,17   (B) 12,17,22   (C) 16,21   (D) syntax
error.

27. What does the following function print?

```
func(int i)
{
   if(i%2) return 0;
   else return 1;
}
main()
{
   int i=3;
   i=func(i);
   i=func(i);
   printf("%d",i);
}
```

    (A) 3   (B) 1   (C) 0   (D) 2

28. What will be the result of the following program?

```
char*g()
{
    static char x[1024];
    return x;
}
main()
{
    char*g1="First String";
    strcpy(g(),g1);
    g1=g();
    strcpy(g1,"Second String");
    printf("Answer is:%s", g());
}
```

(A) Answer is: First String   (B) Answer is: Second String
(C) Run time Error/Core Dump   (D) None of these

29. Consider the following program

```
main()
{
    int a[5]={1,3,6,7,0};
    int *b;
    b=&a[2];
}
```

The value of b[-1] is

(A) 1   (B) 3   (C) -6
(D) none

30. Given a piece of code

```
int x[10];
int *ab;
ab=x;
```

To access the 6th element of the array which of the following is incorrect?

(A) *(x+5)   (B) x[5]   (C) ab[5]
(D) *(*ab+5} .

RAMCO SYSTEM

The written test consists of both **aptitude** and a **technical** test.
The **aptitude section** of the test has **60 Questions** of **MCQ** type. These further consist of
30 Questions each on **Quantitative** and **Verbal**. A good guide for this section will be
Baron's GRE preperation book.
The **technical section** is based mostly on **C** concepts and programming.

APTITUDE TEST

Directions: Each of the following question has a question and two statements labelled as (i) and (ii). Use the data/information given in (i) and (ii) to decide whether the data are sufficient to answer the question record your answer as

A) If you can get the answer from (1)alone but not from (2)
B) If you can get the answer from (2)alone but not from (1)
C) If can get the answer from (1)and (2)together ,although neither statement by itself suffice
D) If statement (1)alone suffices and statement (2) alone also suffice.
E) If can't get the answer from statements (1) and (2) together and you need more data.

Q1)What will be the population of city X in 1991?

1) Population of the city has 55% annual growth rate
2) in 1991,the population of city X was 8 million

Ans:C

Q2) Was it Rani's birthday yesterday?

1)Lata spends Rs.100 on Rani's birthday
2)Lata spent Rs.100 yesterday

Ans: E

Q3)Is 3*5 or is 4*6 greater ?

1)a*b =b*a
2)a*b is the remainder of ab%(a+b)

Ans:B

Q4)Will the graph X-Y pass through the origin?

1) x proportional to the Y
2)increment in y per units rise of x is fixed.

Ans:E

Q5) What was the value of the machine 2 years ago?

1) the deprecition of the value of the machine per year is 10%
2)present value of the machine is rs 8000/

Ans:C

Q6) What will be the area of a square that can be inscribed in a circle?

1) Radius of the circle is T
2) Length of a diagonal of the square is 2r

Ans:D

Q7) Can it be concluded that the port made more profit in 1988 than in 1987

1) 1987

Total tonnage handled by the port 10 million tonnes	Expenditure made by the port to handle one tonne of cargo Rs.20/-

2) 1988

Total tonnage handled by the port 12.5 million tonnes	Expenditure made by the port to handle one tonne of cargo Rs 25/-

Ans: E

Q8) There are two figures viz., a circle and a square. Which having greater area?

1) Perimeter of the circle is the same as the perimeter of the square.
2) Eleven times the radius is equal to seven times the length of one side of the square.

Ans: D

Q9) A candidate who was found to be under weightin medical test had been selected provisionally subject to his attainment of 60Kg weight within one year. What should be the percentage increase of his weightso that selection is confirmed after one year.

1) Weight (Kg)=16+8 Height (ft) is standard equation for the Indian population. The candidates height is 5.5
2) His present weight is 55Kg.

Ans: D

Q10) Is angle µ=90

1) sin**2(µ)+cos**2(µ)=1
2) sin**2(µ)-+cos**2(µ)=1

Ans: E

Q11) What will be the average age of workers of an Institution after two years?

1) Present average age is 35 years
2) There are total 20 workers in the Institution

Ans: A

Q12) Can it be concluded that firestry is getting increasing importance in India? (Disregarding the change in money value)

1)

Name of the plan	Expenditure on Forest (Crores of rupees)
First five year plan	10
Second five year plan	19

2)

Name of the plan	Expenditure on Forest (Crores of rupees)
First five year plan	46
Second five year plan	92.5

Ans: E

Q13) Is AB>AM (A Triangle is given)

1) AB<AC
2) M is any point other than B and C on BC

Ans: E

Q14) Is X^2+Y^2<X+Y?

1) 0<X<1
2) 0<Y<1 and X!=Y (X not equal to Y)

Ans: C

Q15) Can it be concluded that angle ABO = angle ODC

1) ABCD is a Parallelogram and O is the point of intersection of the diagonals.
2) Angle DOC =75deg. and angle DAO =35deg.

Ans: A

Q16) What is the value of x+y?

1) 2y=x+6
2) 5x=10y-30

Ans: E

Q17) How many students are there in the class?

1) 30 students play foot ball and 40 play cricket .
2)Each student plays either foot ball or cricket or both.

Ans: E

Q18) What is the value of a:b?

1) a=x+10%ofx
2) b=a+10%ofa

Ans: B

Q19) What is the maximum value of the expression 5+8x-8x^2?

1) x is real
2) x is not positive

Ans: C

Q20) What will be the value of the greatest angle of the triangle ABC?

1) Angles of the triangle are in the ration 2:5:3
2) The side opposite to the greatest angle is the longest side.

Ans: A

Q21) What is the range of values of x?

1)(x-2) / (2x + 5) < 1/3
2)2x /3 + 17/3 > 3x - 20

Ans: D

Q22) Of the two which one is the greater --   -3/x , -3/y?

1) x,y>0
2) x<y

Ans: C

Q23) What percentage of the candidates passed both in science and mathematics?

1) 52 percent of the candidates failed in science
2) 42% of the candidates failed in mathematics

Ans: C

Q24) How much pure H_2SO_4 (Hydro Sulphuric Acid) should be added to bring down the percentage of impuritity to 5%?

1). 50 liters of pure H2SO4 was diluted
2). dilution was to the extent of 20%

Q25) What is the cost of building when archtects feeses was 70,000

1. Architect gets 10% for the first Rs. 50000 of the cost of building
2. Architect gets 3% on the cost of the building over 50000

Q26) What is the value of BC?(here one triangle figure is there)

1). AP=4
2). PQ=5

Q27) What is the area of the shaded portion (assume AB, CD are arcs of two circles with centre at 0.)Here one arc figure is there

1). CA=20m
2). CB=5m

Q28) What is the area of the greatest circle that can be out from rectangular paper

1). length of the paper is 30cm
2). Width of the paper is 21cm

Q29) Y is what percentage of X?

1). 0.3x=Y
2). 3x-10y=0

Q30) What is the area of the trapezium abcd where ab is 5cm

1. BC=7CM
2. AB+CD= 16CM

Directions :- Each sentence below has one or two blanks.Choose the word from the set of words for each blank that best fits the meaning of the sentence as a whole.

Q31) The air was bitter cold, the temperature well below the freezing point , yet they found themselves ------ freely as they clambered up the steep northern slope

Ans: disporting

Q32) We were taken when we heard of his defection , never having suspected that he was anything but loyal. So capable had been his ---- or and devotion to cease

Ans: presentiment

Q33) War and peace are mutually ------- states of being and war to preserve peace is not a paradox . It is a -----

Ans: incompatible -- contradiction

Q34) Although the injury appeared ------, the examination by the ophthomologist revealed that he would need immediate surgery to save his sight.

Ans: superficial

Q35 to Q40 - On similar pattern as above.

Antonyms

Q41. corroborative ---- refutable

Q42. obnoxious ---- harmless

Q43. sanction ---- hinder

Q44. empirical ---- experimental

Q45. aborigine ---- emigrant

Directions for questions 56- 60 . Questions 56 -60 are based on the following information:

A port has four berths W,V,X,Y. Of these two are general cargo berth, one is a fertiliser berth and one is for liquid cargo, When vessel A arrived it was berthed at berth V but vessel B which along with A had to wait prior to berthing as vessel C was working in berth Y and vessel D was working in berth W .Vessel E came to unload fertiliser and did not have to wait. All are specilised berths i.e. general cargo vessel has to work only in a general cargo berth. So is true for fertiliser vessel and liquid cargo vessel.

Q56. The vessel E should be alotted to the berth.

Ans: X

Q57. Which of the following berth can accept a vessel carrying liquid cargo--W, V, X, Y

Ans: V

Q58. Which of the following is not a general cargo vessel--A ,B, C, D, E

Ans:A

Q59. Total number of general cargo vessels mentioned in the above description is

Ans:3

Q60. Whcih of the following allotments is possible

Ans: B to W

C TEST

1) Find the output for the following C program

```
main()
{
char *p1="Name";
char *p2;
p2=(char *)malloc(20);
while(*p2++=*p1++);
```

```
printf("%s\n",p2);
}
```

Ans. An empty string

2) Find the output for the following C program

```
main()
{
intx=20,y=35;
x = y++ + x++;
y = ++y + ++x;
printf("%d %d\n",x,y);
}
```

Ans. 57 94

3) Find the output for the following C program

```
main()
{
int x=5;
printf("%d %d %d\n",x,x<<2,x>>2);
}
```

Ans. 5 20 1

4) Find the output for the following C program

```
< P>#defineswap1(a,b)a=a+b;b=a-b;a=a-b;
main()
{
intx=5,y=10;
swap1(x,y);
printf("%d %d\n",x,y);
swap2(x,y);
printf("%d %d\n",x,y);
}
int swap2(int a,int b)
{
int temp;
temp=a;
b=a;
```

a=temp;
return;
}

5) Find the output for the following C program

```
main()
{
char *ptr = "Ramco Systems";
(*ptr)++;
printf("%s\n",ptr);
ptr++;
printf("%s\n",ptr);
}
```

6) Find the output for the following C program

```
#include<stdio.h>
main()
{
char s1[]="Ramco";
char s2[]="Systems";
s1=s2;
printf("%s",s1);
}
```

7) Find the output for the following C program

```
#include<stdio.h>
main()
{
char *p1;
char *p2;
p1=(char *) malloc(25);
p2=(char *) malloc(25);
strcpy(p1,"Ramco");
strcpy(p2,"Systems");
```

```
strcat(p1,p2);
printf("%s",p1);
}
```

Ans. RamcoSystems

8) Find the output for the following C program given that
[1]. The following variable is available in file1.c
static int average_float;

Ans. All the functions in the file1.c can access the variable

9) Find the output for the following C program

```
# define TRUE 0
some code
while(TRUE)
{
some code
}
```

Ans. This won't go into the loop as TRUE is defined as 0

10) Find the output for the following C program

```
main()
{
int x=10;
x++;
change_value(x);
x++;
Modify_value();
printf("First output: %d\n",x);
}
x++;
change_value(x);
printf("Second Output : %d\n",x);
Modify_value(x);
printf("Third Output : %d\n",x);
}
Modify_value()
{
return (x+=10);
```

```
}
change_value()
{
return(x+=1);
}
```

11) Find the output for the following C program

```
main()
{
intx=10,y=15;
x=x++;
y=++y;
printf("%d %d\n",x,y);
}
```

12) Find the output for the following C program

```
main()
{
int a=0;
if(a=0) printf("Ramco Systems\n");
printf("Ramco Systems\n");
}
```

13) Find the output for the following C program

```
#include<stdio.h>
int SumElement(int *,int);
void main(void)
{
int x[10];
int i=10;
for(;i;)
{
i--;
*(x+i)=i;
```

```
}
printf("%d",SumElement(x,10));
}
int SumElement(int array[],int size)
{
int i=0;
float sum=0;
for(;i<size;i++)
sum+=array[i];
return sum;
}
```

Q14) Find the output for the following C program

```
#include<stdio.h>
void main(void);
int printf(const char*,...);
void main(void)
{
inti=100,j=10,k=20;
-- int sum;
float ave;
charmyformat[]="ave=%.2f";
sum=i+j+k;
ave=sum/3.0;
printf(myformat,ave);
}
```

Q15) Find the output for the following C program

```
#include<stdio.h>
void main(void);
{
int a[10];
printf("%d",((a+9) + (a+1)));
}
```

Q16) Find the output for the following C program

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

```c
int x;
float y;
}s1={25,45.00};
union u{
int x;
float y;
} u1;
u1=(union u)s1;
printf("%d and %f",u1.x,u1.y);
}
```

Q17) Find the output for the following C program

```c
#include<stdio.h>
void main(void)
{
unsigned int c;
unsigned x=0x3;
scanf("%u",&c);
switch(c&x)
{
case 3: printf("Hello!\t");
case 2: printf("Welcome\t");
case 1: printf("To All\t");
default:printf("\n");
}
}
```

Q18) Find the output for the following C program

```c
#include<stdio.h>
int fn(void);
void print(int,int(*)());
int i=10;
void main(void)
{
int i=20;
print(i,fn);
}
void print(int i,int (*fn1)())
{
printf("%d\n",(*fn1)());
}
int fn(void)
```

```
{
return(i-=5);
}
```

Q19) Find the output for the following C program

```
#include<stdio.h>
void main(void);
{
char numbers[5][6]={"Zero","One","Two","Three","Four"};
printf("%s is %c",&numbers[4][0],numbers[0][0]);
}
```

Q20) Find the output for the following C program

```
int bags[5]={20,5,20,3,20};
void main(void)
{
int pos=5,*next();
*next()=pos;
printf("%d %d %d",pos,*next(),bags[0]);
}
int *next()
{
int i;
for(i=0;i<5;i++)
if (bags[i]==20)
return(bags+i);
printf("Error!");
exit(0);
}
```

Q21) Find the output for the following C program

```
#include<stdio.h>
void main(void)
{
inty,z;<BR>intx=y=z=10;
int f=x;
float ans=0.0;
f *=x*y;
ans=x/3.0+y/3;
```

```c
printf("%d %.2f",f,ans);
}
```

Q22) *Find the output for the following C program*

```c
#include<stdio.h>
void main(void);
{
doubledbl=20.4530,d=4.5710,dblvar3;
double dbln(void);
dblvar3=dbln();
printf("%.2f\t%.2f\t%.2f\n",dbl,d,dblvar3);
}
double dbln(void)
{
double dblvar3;
dbl=dblvar3=4.5;
return(dbl+d+dblvar3);
}
```

Q23) *Find the output for the following C program*

```c
#include<stdio.h>
static int i=5;
void main(void)
{
int sum=0;
do
{
sum+=(1/i);
}while(0<i--);
}
```

Q24) *Find the output for the following C program*

```c
#include<stdio.h>
void main(void)
{
intoldvar=25,newvar=-25;
int swap(int,int);
swap(oldvar,newvar);
printf("Numbers are %d\t%d",newvar,oldvar);
}
```

```c
int swap(int oldval,int newval)
{
int tempval=oldval;
oldval=newval;
newval=tempval;
}
```

Q25) Find the output for the following C program

```c
#include<stdio.h>
void main(void);
{
inti=100,j=20;
i++=j;
i*=j;
printf("%d\t%d\n",i,j);
}
```

Q26) Find the output for the following C program

```c
#include<stdio.h>
void main(void);
int newval(int);
void main(void)
{
int ia[]={12,24,45,0};
int i;
int sum=0;
for(i=0;ia[i];i++)
{
sum+=newval(ia[i]);
}
printf("Sum= %d",sum);
}
int newval(int x)
{
static int div=1;
return(x/div++);
}
```

Q27) Find the output for the following C program

```c
#include<stdio.h>
void main(void);
{
int var1,var2,var3,minmax;
var1=5;
var2=5;
var3=6;
minmax=(var1>var2)?(var1>var3)?var1:var3:(var2>var3)?var2:var3;
printf("%d\n",minmax);
```

Q28) Find the output for the following C program

```c
#include<stdio.h>
void main(void);
{
void pa(int *a,int n);
int arr[5]={5,4,3,2,1};
pa(arr,5);
}
void pa(int *a,int n)
{
int i;
for(i=0;i<n;i++)
printf("%d\n",*(a++)+i);
}
```

Q29) Find the output for the following C program

```c
#include<stdio.h>
void main(void);
void print(void);
{
print();
}
void f1(void)
{
printf("\nf1():");
}
```

Q30) Find the output for the following C program

```c
#include "6.c"
void print(void)
```

```
{
extern void f1(void);
f1();
}
static void f1(void)
{
printf("\n static f1().");
}
```

Q31) *Find the output for the following C program*

```
#include<stdio.h>
void main(void);
static int i=50;
int print(int i);
void main(void)
{
static int i=100;
while(print(i))
{
printf("%d\n",i);
i--;
}
}
int print(int x)
{
static int i=2;
return(i--);
}
```

Q32) *Find the output for the following C program*

```
#include<stdio.h>
void main(void);
typedef struct NType
{
int i;
char c;
long x;
} NewType;
void main(void)
{
NewType *c;
c=(NewType *)malloc(sizeof(NewType));
```

```
c->i=100;
c->c='C';
(*c).x=100L;
printf("(%d,%c,%4Ld)",c->i,c->c,c->x);
}
```

Q33) Find the output for the following C program

```
#include<stdio.h>
void main(void);
const int k=100;
void main(void)
{
int a[100];
int sum=0;
for(k=0;k<100;k++)
*(a+k)=k;
sum+=a[--k];
printf("%d",sum);
}
```

SATYAM COMPUTERS

:

The Satyam paper provided here is a two year old paper. The pattern could have changed by now. We will try to get the latest papers as soon as possible. The paper is primarily divided into 2 sections:

Section #1
This section tests a candidate's **logical** and **analytical ability** along with the **vocabulary**.The questions asked in this section are based on the **CAT pattern.**
For the *quantitative part*,it is **a**dvisable to solve **speed** and **distance, pipes** and **cisterns** and **time** and **work problems** from **R.S. Aggarwal's Mathematicatics for MBA** or any other management entrance coaching material.

*Other refrences:*Barron's **GMAT** preparation guide.

Section#2
This is the **technical section**.Along with the candidate's grasp on the subject, the section also tests the **general awareness** of the candidate in his/her **technical field.**
You may also be asked to write **basic programs** like finding the **factorial** of a number,**squares** of *n* natural numbers , *etc.* .

PAPER 1--GENERAL APTITUDE

Directions:Each question given below consists of a word, followed by four words or phrases. Choose the lettered word or phrase that is most nearly opposite in meaning to the word in the question.

ANTONYMS

1. Disregarded
(a) heed
(b) hopeful
(c) evade
(d) dense

Ans. (a)

2. Obviate
(a) becloud
(b) necessitate
(c) rationalize
(d) execute

Ans. (b)

3. Superficial
(a) profound
(b) exaggerated
(c) subjective
(d) spirited

Ans. (a)

4. Abide
(a) retract an offer
(b) refuse to endure
(c) shield from harm
(d) exonerate

Ans. (b)

5. Acerbity
(a) noteworthiness
(b) hypocrisy

(c) mildness of temperament
(d) lack of anxiety

Ans. (c)

Directions: Each question or group of questions is based on a passage or set of conditions. For each question, select the best answer choice given.

Quesitions 6-9

In a certain society, there are two marriage groups, Red and Brown. No marriage is permitted within a group. On marriage, males become part of their wife's group: women remain in their own group. Children belong to the same group as their parents. Widowers and divorced males revert to the group of their birth. Marriage to more than one person at the same time and marriage to a direct descendant are forbidden.

6. A Brown female could have had
I. a grandfather born Red
II. a grandmother born Red
III. two grandfathers born Brown

(a) I only
(b) II only
(c) I and II only
(d) II and III only
(e) I,II and III

Ans. (c)

7. A male born into the Brown group may have

(a) an uncle in either group
(b) a Brown daughter
(c) a Brown son
(d) a son-in-law born into the Red group
(e) a daughter-in-law in the Red group

Ans. (a)

8. Which of the following is not permitted under the rules stated?

(a) A Brown male marrying his father's sister
(b) A Red female marrying her mother's brother
(c) A man born Red, who is now a widower, marrying his brother's widow
(d) A widower marrying his wife's sister
(e) A widow marrying her divorced daughter's ex-husband

Ans. (b)

9. If widowers and divorced males retained the group they had upon marrying, which of the following would have been permissible?(Assume no previous marriages occurred)

(a) A woman marrying her dead sister's husband
(b) A woman marrying her divorced daughter's ex-husband.
(c) A widower marrying his brother's daughter
(d) A woman marrying her mother's brother, who is a widower
(e) A divorced male marrying his ex-wife's divorced sister

Ans. (d)

Questions 10-13

Tom wishes to enroll in Latin AA, Sanskrit A, Armenian Literature 221, and Celtic Literature 701.
Latin AA meets five days a week, either from 9 to 11 A.M or from 2 to 4 P.M.
Sanskrit A meets either Tuesday and Thursday from 12 noon to 3 P.M., or Monday, Wednesday, and Friday
from 10 A.M to 12 noon.
Armenian Literature 221 meets either Monday, Wednesday, and Friday from 12:30 to 2 P.M., or Tuesday and Thursday
from 10:30 A.M to 12:30 P.M
Celtic Literature 701 meets by arrangement with the instructor, the only requirement being that it meet for one four-hour session or two two-hour sessions per week, between 9A.M and 4 P.M from Monday to Friday, beginning on the hour.

10. Which combination is impossible for Tom?

(a) Latin in the morning, Sanskrit on Tuesday and Thursday, and Armenian Literature on Monday, Wednesday, Friday
(b) Latin in the afternoon and Sanskrit and Armenian Literature on Monday, Wednesday, and Friday.
(c) Latin in the afternoon, Sanskrit on Monday, Wednesday, and Friday,and Armenian Literature on Tuesday and Thursday

(d) Latin in the morning and Sanskrit and Armenian Literature on Monday, Wednesday, and Friday
(e) Latin in the afternoon, Armenian Literature on Monday, Wednesda and Friday, and Celtic Literature on Tuesday

Ans. (d)

11. Which of the following gives the greatest number of alternatives for scheduling Celtic Literature, assuming that all other courses

(a) Latin in the afternoon and Armenian Literature Monday, Wednesday and Friday
(b) Sanskrit on Tuesday and Thursday and Armenian Literature on Monday, Wednesday and Friday
(c) Latin in the afternoon and Armenian Literature Tuesday and Thursday
(d) Latin in the morning and Sanskrit on Tuesday and Thursday
(e) Sanskrit on Monday, Wednesday, and Friday. and Armenian Literature on Tuesday and Thursday

Ans. (a)

12. If the Celtic instructor insists on holding at least one session on Friday, in which of the following can Tom enroll?
(I) Armenian Literature on Monday, Wednesday, and Friday
(II) Sanskrit on Monday, Wednesday, and Friday

(a) I only
(b) II only
(c) both I and II
(d) I or II but not both
(e) neither I nor II

Ans. (d)

13. Which of the following additional courses, meeting as indicated, can Tom take?

(a) Maths--Monday, Wednesday, and Friday from 10A.M to 12 noon
(b) French--Monday, Wednesday, and Friday from 11A.M to 12:30 P.M
(c) English--Tuesday and Thursday from 2 to 4 P.M
(d) Japenese--Tuesday and Thursday from 1 to 3 P.M
(e) Old Norse-Icelandic--Monday only from 12 to 3 P.M

Ans. (b)

Questions 14-18

(1) Ashland is north of East Liverpool and west of Coshocton
(2) Bowling Green is north of Ashland and west of Fredericktown
(3) Dover is south and east of Ashland
(4) East Liverpool is north of Fredricktown and east of Dover
(5) Fredricktown is north of Dover and west of Ashland
(6) Coshocton is south of Fredricktown and west of Dover

14. Which of the towns mentioned is furthest to the northwest ?

(a) Ashland
(b) Bowling Green
(c) Coshocton
(d) East Liverpool
(e) Fredericktown

Ans. (b)

15. Which of the following must be both north and east of Fredricktown?
(I) Ashland
(II) Coshocton
(III) East Liverpool

(a) I only
(b) II only
(c) III only
(d) I and II
(e) I and III

Ans. (e)

16. Which of the following towns must be situated both south and west of at least one other town?

(a) Ashland only
(b) Ashland and Fredricktown
(c) Dover and Fredricktown
(d) Dover,Coshocton and Fredricktown
(e) Dover,Coshocton and East Liverpool

17. Which of the following statements, if true, would make the information in the numbered statements more specific?

(a) Coshocton is north of Dover
(b) East Liverpool is north of Dover
(c) Ashland is east of Bowling Green
(d) Coshocton is east of Fredericktown
(e) Bowling Green is north of Fredericktown

18. Which of the numbered statements gives information that can be deduced from one or more of the other statement?

(a) (1)
(b) (2)
(c) (3)
(d) (4)
(e) (6)

Questions 19-22

Spelunkers International offers exploring tours in eight caves: Abbott, Benny, Caeser, Dangerfield, Ewell, Fields, Guinness, and Hope
(1) Class 1 spelunkers may not attempt cave Ewell, Fields or Hope
(2) Class 2 spelunkers may not attempt Hope
(3) Class 3 spelunkers may attempt any cave
(4) Cave Caesar may be attempted only by spelunkers who have previously explored cave Benny
(5) Cave Fields may be attempted only by spelunkers who have previously explored cave Ewell
(6) Only two of caves Benny, Caeser, Ewell, Fields, and Hope may be attempted by any explorer in a single tour

19. A class 2 spelunker who has previously explored cave Ewell may be restricted in choosing a tour by which rule(s)?
(I) Rule(4)

(II) Rule(5)
(III) Rule(6)

(a) I only
(b) II only
(c) I and III only
(d) II and III only
(e) I, II and III

Ans. (c)

20. In how many different ways may a class 1 spelunker who has never explored any of the eightcaves before set up a tour of three caves, if she wishes to explore caves Abbott and Caesar?

(a) 2
(b) 3
(c) 4
(d) 5
(e) 6

Ans. (b)

21. What is the maximum number of caves that a class 3 spelunker who has previously explored only cave Benny may include
in a single tour?

(a) 4
(b) 5
(c) 6
(d) 7
(e) 8

Ans. (b)

22. If $x + y = 3$ and $y/x = 2$ then $y = ?$

(a) 0
(b) 1/2
(c) 1
(d) 3/2
(e) 2

23. How many squares with sides 1/2 inch long are needed to cover a rectangle that is 4 ft long and 6 ft wide

(a) 24
(b) 96
(c) 3456
(d) 13824
(e) 14266

24. If a=2/3b , b=2/3c, and c=2/3d what part of d is b/

(a) 8/27
(b) 4/9
(c) 2/3
(d) 75%
(e) 4/3

Ans. (b)

25. Successive discounts of 20% and 15% are equal to a single discount of

(a) 30%
(b) 32%
(c) 34%
(d) 35%
(e) 36

Ans. (b)

26. The petrol tank of an automobile can hold g liters.If a liters was removed when the tank was full, what part of the full tank was removed?

(a)g-a
(b)g/a
(c) a/g
(d) (g-a)/a
(e) (g-a)/g

Ans. (c)

27.If x/y=4 and y is not '0' what % of x is 2x-y

(a)150%
(b)175%
(c)200%
(d)250%

Ans. (b)

28.If 2x-y=4 then 6x-3y=?

(a)15
(b)12
(c)18
(d)10

Ans. (b)

29.Ifx=y=2z and xyz=256 then what is the value of x?

(a)12
(b)8
(c)16
(d)6

Ans. (b)

30. $(1/10)^{18}$ - $(1/10)^{20}$ = ?

(a) $99/10^{20}$
(b) 99/10
(c) 0.9
(d) none of these

Ans. (a)

31. Pipe A can fill in 20 minutes and Pipe B in 30 mins and Pipe C can empty the same in 40 mins.If all of them work together, find the time taken to fill the tank

(a) 17 1/7 mins
(b) 20 mins

(c) 8 mins
(d) none of these

32. Thirty men take 20 days to complete a job working 9 hours a day.How many hour a day should 40 men work to complete the job?

(a) 8 hrs
(b) 7 1/2 hrs
(c) 7 hrs
(d) 9 hrs

33. Find the smallest number in a GP whose sum is 38 and product 1728

(a) 12
(b) 20
(c) 8
(d) none of these

34. A boat travels 20 kms upstream in 6 hrs and 18 kms downstream in 4 hrs.Find the speed of the boat in still water and the speed of the water current?

(a) 1/2 kmph
(b) 7/12 kmph
(c) 5 kmph
(d) none of these

35. A goat is tied to one corner of a square plot of side 12m by a rope 7m long.Find the area it can graze?

(a) 38.5 sq.m
(b) 155 sq.m
(c) 144 sq.m
(d) 19.25 sq.m

SOME QUESTIONS WHEREIN TWO STATEMENTS ARE GIVEN ARE ALSO THERE WHERE YOU HAVE TO TELL WHICH STATEMENT IS CORRECT SOME QUESTIONS ALSO APPEARED FROM THE BARRON'S GMAT GUIDE. PAGE NO. 439 PASSAGE AND QUESTIONS 1 TO 9 PAGE NO. 440-441 PAGE 442 PASSAGE 2 ALSO REFER TO BARRON'S GRE BOOK FOR ADDITIONAL ANALYTICAL QUESTIONS.

PAPER 2--GENERAL AWARENESS

1. Who is the father of computers
2. Expand HTML,DMA,FAT,LAN,WAN,FDDetc
3. Which was intel's first microprocessor
4. Convert 1024 (in decimal) to octa and hexadecimal form
5. First microprocessor was
(a) 8085
(b) 8088
(c) 8086
(d) 80487

6. Give the name of a processor produced by mortorola?
7. What is the full form of WindowsNT ?
8. What is the difference between 8087 and 8086

BESIDES THIS QUESTIONS WERE ALSO BASED ON IBM PC CLONES, BASIC QUESTIONS ON GUI
SIMPLE PROGRAMS LIKE FINDING FACTORIALS, LARGEST OF THREE NUMBERS ETC HAVE ALSO BEEN ASKED IN THE PAST.

INTERVIEW

The interview consists of two stages :**Technical and HR** .In the technical interview candidates can be asked questions on:
1.Operating Sytems
2.Data Structures.
3. C.
4.DBMS
(for computer students)

1.Microprocessors architecture of 8085.
2.Digital Circuits and Logic Design.
3.Basic Electronics.
4.Communications(questions pertaining to AM,FM,etc.)

5.Computer Networks.
(for electronics students)

SIEMENS INFORMATION SYSTEMS LTD

The written test consists of **50 questions divided into 6 sections to be completed in 40 minutes**.The questions are technical based ,you can expect to be tested on **DBMS, C++, C, Unix, Motif, x-windows, ms-windows**.The test is a **multiple based** one and is not tough.The questions can be answered easily in 40 minutes provided you have some knowledge about the subjects

1. Which of following operator can't be overloaded.

a) ==
b) ++
c) ?!
d) <=

2. For the following C program

#include<iostream.h>
main()
{printf("Hello World");}

The program prints Hello World without changing main() ,the output should be

intialisation
Hello World
Desruct

The changes should be

a) IOstream operator<<(iostream os, char*s)
   os<<'intialisation'<<(Hello World)<<Destruct
b)
c)
d) none of the above

3. CDPATH shell variable is in(c-shell)

4. The term stickily bit is related to

a) Kernel
b) Undeletable file
c) Both (a) and (b)
d) None

5. Semaphore variable is different from ordinary variable by

6. For the following C program:

```
swap(int x,y)
{ int temp;
temp=x;
x=y;
y=temp;}

main()
{intx=2;y=3;
swap(x,y);}
```

After calling swap, what are the values x & y?

7. Static variable will be visible in

a) Function. in which they are defined
b) Module in which they are defined
c) All the program
d) None

8. Unix system is

a) Multi processing
b) Multi processing, multiuser
c) Multi processing, multiuser, multitasking
d) Multiuser, multitasking

9. X.25 protocol encapsulates the follwing layers

a) Network
b) Datalink
c) Physical
d) All of the above
e) None of the above

10. TCP/IP can work on

a) Ethernet
b) Tokenring
c) (a) & (b)
d) None

11. A node has the IP address 138.50.10.7 and 138.50.10.9.
   But it is transmitting data from node1 to node 2only.
   The reason may be

a) A node cannot have more than one address
b) class A should have second octet different
c) class B should have second octed different
d) All of the above

12. The OSI layer from bottom to top

13. For an application which exceeds 64k the memory model should be

a) Medium
b) Huge
c) Large
d) None

14. The condition required for dead lock in unix system is

15. Set-user-id is related to (in unix)

16. Bourne shell has

a) History record****other choices not given

17. Which of the following is not true about C++

a) Code removably
b) Encapsulation of data and code
c) Program easy maintenance
d) Program runs faster

18. For the following C program

```
struct base {int a,b;
base();
int virtual function1();}

struct derv1:base
{int b,c,d;
derv1()
int virtual function1();}

struct derv2 : base
{int a,e;
}
base::base()
{a=2;b=3;
}
derv1::derv1()
{b=5;
c=10;d=11;}
base::function1()
{return(100);
}
derv1::function1()
{
return(200);
}

main()
base ba;
derv1 d1,d2;
printf("%d %d",d1.a,d1.b)
```

Output of the program is:

a)a=2;b=3;
b) a=3; b=2;

c) a=5; b=10;
d) none

19. For the above program answer the following q's

main()
base da;
derv1 d1;
derv2 d2;
printf("%d %d %d",da.function1(),d1.function1(),d2.function1());

Output is:

a) 100,200,200;
b) 200,100,200;
c) 200,200,100;
d) None of the above

20. For the following C program

struct {
int x;
int y;
}abc;

x cannot be accessed by the following

1)abc-->x;
2)abc[0]-->x;
3)abc.x;
4)(abc)-->x;

a)1, 2, 3
b) 2 & 3
c) 1 & 2
d) 1, 3, 4

21. Automatic variables are destroyed after fn. ends because

a) Stored in swap
b) Stored in stack and poped out after fn. returns

c) Stored in data area
d) Stored in disk

22. Relation between x-application and x-server (x-win)

23. What is UIL(user interface language) (x-win)

24)Which of the following is right in ms-windows

a) Application has single qvalue system has multiple qvalue
b) Application has multiple qvalue system has single qvalue
c) Application has multipleqvalue system has multiple qvalue
d) None

25. Widget in x-windows is

26. Gadget in x_windows is

27. Variable DESTDIR in make program is accessed as

a) $(DESTDIR)
b) ${DESTDIR}
c) DESTDIR

28. The keystroke mouse entrie are interpreted in ms windows as

a) Interrupt
b) Message
c) Event
d) None of the above

29. Link between program and outside world (ms -win)

a) Device driver and hardware disk
b) Application and device driver
c) Application and hardware device
d) None

30. Ms -windows is
a)multitasking
b)multiuser
c) bothof the above
d) none of the above

31. Dynamic scoping is

32. After logout the process still runs in the background by giving the command

33. Which process dies out but still waits

a) Exit
b) Wakeup
c) Zombie
d) Sleep

34. In dynamic memory allocation we use

a) Doubly linked list
b) Circularly linked
c) B trees
d) L trees
e) None

35. To find the key of search the data structure is

a) Hash key
b) Trees
c) Linked lists
d) Records

36. Which of the following is true

a) Bridge connects dissimiler LANand protocol insensitive
b) Router connects dissimiler LANand protocol insensitive

c) Gateway connects dissimiler LANand protocol insensitive

d) None of the above

37. Read types of tree traversals.

38. Read about SQL/Databases

39.A DBMS table is given along with simple SQL statements. Find the output.

40. Simple programs on pointers in c

Interview:

The test is followed by a Technical and a HR interview.The technical interview is highly specialised and covers almost all subjects you have done in your curriculum. However one is required to name his/her favorite subject on which most of the interview is focussed.For Computer Engineers C,Operating Systems,DBMS,Microprocessors are mostly focussed upon.Electronics Engineers are grilled upon DCLD,Microprocessors and Communications.For details on the frequently asked questions please refer to our interview Section. The HR interview which follows the technical interview is very general.In most cases questions regarding the company are asked.

SONATA

The written test consists of two sections

      Section-I Aptitude Test   (**50** Questions, **12** minutes)

      Section-II Technical (C) Test   (**30** Questions, **45** minutes)

     To **write** the **technical** test, you have to attain a **minimum** of **70%** in the **aptitude test**. The aptitude part is very simple, but the time is very less. The technical test is simple. Most of the questions are from **"Test Your C Skills"** by *Yashavant Kanetkar*. Here we give you some sample questions, going through it may help you to attend the test.

APTITUDE TEST

1. Last month of an year
   (a) January   (b) February   *(c) December*   (d) November

2. Select the odd one
   (a) January   (b) February   *(c) Wednesday*   (d) November

3. Select the antonym of capture from the following
   (a) attack   *(b) Release*   (c) condemn   (d) None of the above

4. Find the antonym of autumn
   (a) Spring   (b) Winter   (c) Summer   (d) None of the above

5. One skirt requires 3.75 yards of cloth. How many skirts you can make from 45 yards?
   Ans: 12 skirts

6. How can you make a square from two triangles?

7. Is the meaning of Client and Customer,
   (a) same   (b) contradictory   (c) no relation

8. Is the meaning of It's and Its,
   (a) same   (b) contradictory   *(c) no relation*

9. Is the meaning of Canvas and Canvass,
   (a) same   (b) contradictory   *(c) no relation*

10. Is the meaning of Ingenious and Ingenuous,
   (a) same   (b) contradictory   (c) no relation

11. Is the meaning of Credible and Credulous,
   (a) same   (b) contradictory   (c) no relation

12. Select the odd one out.
   (a) 1/4   (b) 1/3   (c) 1/6
(d) 1/18

13. Select the least from the following.
   (a) 0.99   (b) 1   (c) 81
(d) *0.333*

14. Find the next number in the series.   1, 0.5, 0.25, 0.125
   Ans: 0.0625

15. One dollar is saved in one month. Then how much dollar is saved in one day?

Ans: 1/30 =0.0333$

16. Y catches 5 times more fishes than X. If total number of fishes caught by X and Y is 48, then number of   fishes caught by X?

Ans: 8

17. Y catches 5 times more fishes than X. If total number of fishes caught by X and Y is 42, then number of fishes caught by X?

Ans: 7

18. If a train covers 600m in 0.5 seconds, how long it will cover in 10 seconds?

Ans: 3000m = 3km

19. The girl's age is twice that of boy, if the boy is four years old. After four years the age
of the girl is

Ans: 12 years

20. Sister's age is twice than that of the brother. If the brother's age is six, what is the sister's age after two years?

Ans: 14 Yrs.

21. Two lemons cost 10 cents. Then one and a half dozen cost

Ans: 90 cents

22. A clock is late by 1 minute 27 seconds in a month. Then how much will it be late in 1 day?

Ans: 2.9 seconds

23. Which of the following figures together will make a triangle?

Ans: a,b,c,d

24. Make a square by drawing only one line

Ans: line 2-5, square 2-3-4-5-2

25. Which of the following is the odd one?   crew, constellation, companion, league, participants.

Ans: companion

26. Opposite of Remote?
   (a) Far   *(b) Near*   (c) Huge   (d)
Village

27. Statement A: All great men are ridiculous;
    Statement B: I am ridiculous ;

Inference : I am a great man;
   (a) True   (b) False   *(c) Not clear*

28. Statement: Normal children are active;
   Inference: All children are active;
   (a) True   (b) False   *(c) Uncertain*

29. Next number in the series 1, 1/2, 1/4, 1/8 ?
        Ans: 1/16

30. In 6 seconds a light flashes once. In one hour how many times it will flash?
        Ans: 601 times

31. At 20% discount, a cycle is sold at a selling price of 2500 Rs. What is the actual price?
        Ans: Rs. 3125

32. Statement A: A & B have same age;
   Statement B: B is younger than C;
   Inference : A is younger than C;
   (a) True   (b) False   (c) Uncertain

33. All chickens lay eggs (True/False)
        Ans: False

34. A invests $12000, B invests $8000, C invests $6000 and they got a profit of $1200. How much share A got more than B and C?
        Ans: 2/13 and 3/13

C TEST

1. Point out error, if any, in the following program

```
main()
{
    int i=1;
    switch(i)
    {
        case 1:
            printf("\nRadioactive cats have 18 half-lives");
            break;
        case 1*2+4:
            printf("\nBottle for rent -inquire within");
            break;
    }
}
```

    *Ans. No error. Constant expression like 1*2+4 are acceptable in cases of a*

switch.

2. Point out the error, if any, in the following program

```
main()
{
    int a=10,b;
    a>= 5 ? b=100 : b=200;
    printf("\n%d",b);
}
```

Ans. lvalue required in function main(). The second assignment should be written in parenthesis as follows:

a>= 5 ? b=100 : (b=200);

3. In the following code, in which order the functions would be called?

```
a= f1(23,14)*f2(12/4)+f3();
```

a) f1, f2, f3   b) f3, f2, f1
c) The order may vary from compiler to compiler   d) None of the above

4. What would be the output of the following program?

```
main()
{
    int i=4;
    switch(i)
    {
        default:
            printf("\n A mouse is an elephant built by the Japanese");
        case 1:
            printf(" Breeding rabbits is a hair raising experience");
            break;
        case 2:
            printf("\n Friction is a drag");
            break;
        case 3:
            printf("\n If practice make perfect, then nobody's perfect");
    }
}
```

a) A mouse is an elephant built by the Japanese   b) Breeding rabbits is a
hare raising experience
c) All of the above   d) None of the above

5. What is the output of the following program?

```
#define SQR(x) (x*x)
main()
{
    int a,b=3;
    a= SQR(b+2);
    printf("%d",a);
}
```

```
        }
```
a) 25   *b) 11*   c) error
d) garbage value

6. In which line of the following, an error would be reported?
```
1.    #define CIRCUM(R) (3.14*R*R);
2.    main()
3.    {
4.       float r=1.0,c;
5.       c= CIRCUM(r);
6.       printf("\n%f",c);
7.       if(CIRCUM(r))==6.28)
8.          printf("\nGobbledygook");
9.    }
```
a) line 1   b) line 5   c) line
6   *d) line 7*

7. What is the type of the variable b in the following declaration?
```
        #define FLOATPTR float*
        FLOATPTR a,b;
```
a) float   b) float pointer   c)
int   d) int pointer

8. In the following code;
```
        #include<stdio.h>
        main()
        {
           FILE *fp;
           fp= fopen("trial","r");
        }
```
   fp points to:
     a) The first character in the file.
     b) A structure which contains a "char" pointer which points to the first character in the file.
     c) The name of the file.   d) None of the above.

9. We should not read after a write to a file without an intervening call to fflush(), fseek() or rewind() < TRUE/FALSE>
Ans. True

10. If the program (myprog) is run from the command line as   myprog 1 2 3 ,   What would be the output?
```
        main(int argc, char *argv[])
        {
           int i;
```

```
            for(i=0;i<argc;i++)
            printf("%s",argv[i]);
        }
```
    a) 1 2 3   *b) C:\MYPROG.EXE 1 2 3*
    c) MYP   d) None of the above

11. If the following program (myprog) is run from the command line as myprog 1 2 3,
What would be the output?

```
        main(int argc, char *argv[])
        {
          int i,j=0;
          for(i=0;i<argc;i++)
          j=j+ atoi(argv[i]);
          printf("%d",j);
        }
```
    a) 1 2 3   *b) 6*   c)
error   d) "123"

12. If the following program (myprog) is run from the command line as myprog monday
tuesday wednesday thursday,
   What would be the output?

```
        main(int argc, char *argv[])
        {
          while(--argc >0)
          printf("%s",*++argv);
        }
```
    a) myprog monday tuesday wednesday thursday   *b) monday*
tuesday wednesday thursday
    c) myprog tuesday thursday   d) None of the
above

13. In the following code, is p2 an integer or an integer pointer?
            typedef int* ptr
            ptr p1,p2;
      Ans. Integer pointer

14. Point out the error in the following program
```
        main()
        {
          const int x;
          x=128;
          printf("%d",x);
        }
```
      Ans. x should have been initialized where it is declared.

15. What would be the output of the following program?

```
main()
{
  int y=128;
  const int x=y;
  printf("%d",x);
}
```
a) 128   b) Garbage value   c) Error   d) 0

16. What is the difference between the following declarations?
```
const char *s;
char const *s;
```
Ans. No difference

17. What is the difference between the following declarations?
```
const char *const s;        char const *const s;
```
Ans. No difference

18. What would be the output of the following program?
```
main()
{
  char near * near *ptr1;
  char near * far *ptr2;
  char near * huge *ptr3;
  printf("%d %d %d",sizeof(ptr1),sizeof(ptr2),sizeof(ptr3));
}
```
a) 1 1 1   b) 1 2 4   *c) 2 4 4*   d) 4 4 4

19. If the following program (myprog) is run from the command line as   myprog friday tuesday sunday,
   What would be the output?
```
main(int argc, char*argv[])
{
  printf("%c",**++argv);
}
```
a) m   *b) f*   c) myprog   d) friday

20. If the following program (myprog) is run from the command line as   myprog friday tuesday sunday,
   What would be the output?
```
main(int argc, char *argv[])
{
  printf("%c",*++argv[1]);
}
```

21. If the following program (myprog) is run from the command line as   myprog friday tuesday sunday,

What would be the output?

```
main(int argc, char *argv[])
{
    while(sizeofargv)
       printf("%s",argv[--sizeofargv]);
}
```

a) myprog friday tuesday sunday   b) myprog friday tuesday

c) sunday tuesday friday myprog   d) sunday tuesday friday

22. Point out the error in the following program

```
main()
{
    int a=10;
    void f();
    a=f();
    printf("\n%d",a);
}
void f()
{
    printf("\nHi");
}
```

Ans. The program is trying to collect the value of a "void" function into an integer variable.

23. In the following program how would you print 50 using p?

```
main()
{
    int a[]={10, 20, 30, 40, 50};
    char *p;
    p= (char*) a;
}
```

*Ans. printf("\n%d", *((int*)p+4));*

24. Would the following program compile?

```
main()
{
    int a=10,*j;
    void *k;< BR>                  j=k=&a;
    j++;
```

```
            k++;
            printf("\n%u%u",j,k);
        }
```
a) Yes   b) No, the format is incorrect
c) No, the arithmetic operation is not permitted on void pointers
d) No, the arithmetic operation is not permitted on pointers

25. According to ANSI specifications which is the correct way of declaring main() when it receives command line arguments?
   *a) main(int argc, char *argv[])*   b) main(argc,argv)   int argc;
char *argv[];
   c) main()   {int argc;   char *argv[]; }   d) None of the above

26. What error would the following function give on compilation?
```
            f(int a, int b)
            {
                int a;
                a=20;
                return a;
            }
```
   a) missing parenthesis in the return statement   b) The function should be
declared as int f(int a, int b)
   c) redeclaration of a   d) None of the above

27. Point out the error in the following program
```
            main()
            {
                const char *fun();
                *fun()='A';
            }
            const char *fun()
            {
                return "Hello";
            }
```
   Ans. fun() returns to a "const char" pointer which cannot be modified

28. What would be the output of the following program?
```
            main()
            {
                const int x=5;
                int *ptrx;
                ptrx=&x;
                *ptrx=10;
                printf("%d",x);
            }
```
   a) 5   *b) 10*   c) Error   d)

Garbage value

29. A switch statement cannot include
    a) constants as arguments   b) constant expression as
arguments
    c) string as an argument   d) None of the above

30. How long the following program will run?
```
        main()
        {
           printf("\nSonata Software");
           main();
        }
```
    a) infinite loop   *b) until the stack overflows*
    c) All of the above   d) None of the above

31. On combining the following statements, you will get   char*p;   p=malloc(100);
    *a) char *p= malloc(100)*   b) p= (char*)malloc(100)
    c) All of the above   d) None of the above

32. What is the output of the following program?
```
        main()
        {
           int n=5;
           printf("\nn=%*d",n,n);
        }
```
    a) n=5   b)   n=5
    c) n=   5   d) error

SUN MICRO SYSTEM

We have pretty sketchy information on the exact pattern of the SUN written test. There is
a technical section which is pretty tough. Question based on C, UNIX, Computer
Networks, Data Structures and Operating Systems can be expected.

1. For the following program.

```
struct XXX
{int a;
float b;
char *s;
}X;
```

If optimization :X not used in compiler then unused bits_____.
Give your assumption_____.

2. Give the output of the following program

struct XXX
{int a:6;
float b:4;
char s;
}structure;

size of (structure);

3.Class used for the multiple inheritence in JAVA_____

(a) anonymous class
(b) inner class
(c) abstreet class
(d) none

4. XDR fixes in which part of OS1 stack.

5. LDAP is_____service protocol.

6. Given definition for a function which returns a array of pointers with argument of int*.

7. Give a function declaration with no arguments which refers a two dimensional array

8. Pick up the correct function declaration.

1. void *[] name();
2. void int[][] name();
3. void ** name();
4. none of the above.

9. Give the difference between monolithic and microlithic kernal:

a. monolithic large
b. microlithic used in embedded systems.
c. none.

10. rPC coresponds to_____in OSI stack.

11. Find the no.of page faults using LRU stack.

eg.3 4 4 6 7 8 1 2 .. ..

12.The inorder representation of a tree 41523 and preorder is 211513 Draw it?

13. When does a stack member will be initialised

(a) when object is created
(b) when object is initialised.
(c) doesnot depend on object.
(d) none.

14. Number of CPU in a multiprocess is contrassed by

(a) RISC nohere of CPU
(b) memory
(c) both (a) and (b)
(d) None of the above

15. Give the output of the following program

```
main()
{char *s;
s="hot java";
strcpy(s,"solarrs java")
}
```

16. Give the output of the following program

```
main()
{printf("hot java");
fork()
exit(0);
}
```

(i). When redirected to a screen what will be printed.
(ii). When redirected to file what will be printed.

17. Give the output of the following program

```
main()
{int ret;
ret=fork();ret=fork();ret=fork();ret=fork();
if(!ret)
printf("sun");
else
printf("solaris");
```

18. Give the output of the following program

```
main()
{char *p='a';
int *i=100/*p;
}
```

what will be the value of *i= 1

19. Which data structure gives efficient search

1 B-tree
2 binary tree
3 array
4 linked list

20. Find the error in the following program

```
struct point
{struct point *next;
int data;
}
x;

main()
{int i;
for(x=p;x!=0;)
x=x->next,x++;
freelist(x);
}
```

```
freelist(x)
{free(x);
return
}
```

21. Mutex and _____are similar locking mechanisms.

22. A complex question on pointers and functions.

23. SNMP and SMIP transport layer protocols for TCP/IP&OSI.

24 UNIX: difference between select and poll

TATA INFOTECH

:

   The test consists of two parts.

Part A: Aptitude -- 100 questions 100 marks subdivided as:
Verbal Section
   Letter series(alternately number series can be given)
   Numerical Problems
   Figures & Flowcharts

Part B: Computer knowledge test(purely technical) -- 50 questions 50 marks
   The normal topics incl. C, Operating Systems(both Windows and UNIX),
   DBMS etc are covered.
   A different paper is held for EE students.

The pattern of the test is known to vary from time to time.

VERBAL SECTION

Directions: **Give the synonyms for the following words**

1. Depreciation: deflation, depression, devaluation, fall, slump

2. Depricate : feel and express disapproval,

3. Incentive : thing one encourages one to do (stimulus)

4. Echelon : level of authority or responsibility

5. Innovation : make changes or introduce new things

6. Intermittent : externally stopping and then starting

7. Detrimental: harmful

8. Conciliation : make less angry or more friendly

9. Orthodox: conventional or traditional, superstitious

10. Fallible : liable to error

11. Volatile : ever changing

12. Manifest: clear and obvious

13. Connotation : suggest or implied meaning of expression

14. Reciprocal: reverse or opposite

15. Agrarian : related to agriculture

16. Vacillate : undecided or dilemma

17. Expedient : fitting proper, desirable

18. Simulate : produce artificially resembling an existing one.

19. Access : to approah

20. Compensation: salary

21. Truncate : shorten by cutting

22. Adherence : stick

23. Heterogenous: non similar things

24. Surplus : excessive

25. Assess : determine the amount or value

26. Congnizance : knowledge

27. Retrospective : review

28. Naive : innocent,rustic

29. Equivocate : tallying on both sides, lie, mislead

30. Postulate : frame a theory

31. Latent : dormant, secret

32. Fluctuation : wavering,

33. Eliminate : to reduce

34. Affinity : strong liking

35. Expedite : hasten

36. Console : to show sympathy

37. Adversary : opposition

38. Affable : lovable or approachable

39. Decomposition : rotten

40. Agregious : apart from the crowd, especially bad

41. Conglomaration: group, collection

42. Aberration: deviation

43. Aurgury : prediction

44. Crediability : ability to common belief, quality of being credible

45. Coincident: incidentally

46. Constituent : accompanying

47. Differential : having or showing or making use of

48. Litigation : engaging in a law suit

49. Maratorium: legally or offficiallly determined period of dealy before fulfillment of the agreement of paying of debts.

50. Negotiate : discuss or bargain

51. Preparation : act of preparing

52. Preponderant : superiority of power or quality

53. Relevance : quality of being relevant

54. Apparatus : appliances

55. Ignorance : blindness, in experience

56. Obsession: complex enthusiasm

57. precipitate : speed,active

SERIES SECTION

Directions: **In the following questions complete the series**

NOTE: This section is quite tough and consists of 26 questions to be done in 10 minutes. Please keep track of time.

1. A C B D E F G I - I H K J L

Ans. H

2. A I Z B E Y C I X D I - G E N J W

Ans. W

3. A D G J M P - R W T S

Ans. S

4. A B C E F G I J K - M L O N P

Ans. M

5. A B F G K L P Q - T S V U W

Ans. U

6. J W X U V S T - Q P S E T

Ans. Q

7. A R H X Y T D T W S T - N P T K R

Ans. P

8. F M B I P Z V I E V - I R Y O U

9. N Z I Y C X K W F - J F V M Y

Ans. V

10. A A S A S P A S P K A - R Q T S U

Ans. S

11. A E C P S - T R U E

Ans. U

12. B B P R D D L N F F I K - H Q J I K

Ans. H

13 A Z E X I V M T - R Q N S O

Ans. Q

14. A B D G K P - L I W U X

Ans. U

15. B C D A E G H I F J L M N L K N M O

Ans. K

16. X W E F G V U H I J K - P N S R T

Ans. T

17. O D J T O P Q N O E R T - Q O U V W

Ans. O

18. P R N U U P E J R B B - H V U N E

Ans. E

19. L U L M G M N F N P S - O N Q P S

Ans. P

NUMERICAL ABILITY

1. 420% OF 7.79 = ?

Ans. 32.718

2. 3427 / 16.53 = ?

Ans. 202

3. 10995 /95 = ?

Ans.115.7365

4. 43+557-247 =?

Ans. 353

5. 3107*3.082= ?

6. 48.7 + 24.9 - 8.7 = ?

7.525.0/47.8 = ?

8. (135-30-14)*7 - 6 +2 = ?

9. 3/8 * 5.04=?

10. 697 /219 = ?

11.8/64 +64/16 =?

12. 298 * 312 / 208 = ?

13. 0.33 *1496 /13 = ?

14.0.26 + 1/8 = ?

15. 66.17+1/3= ?

16. 2.84+1/4= ?

17. 33% OF 450 = ?

Ans. 148.5

18. 907.54 / 0,3073= ?

Ans.3002

19.There are two categories of persons in ratio A:B = 2:3. A type earns 2.5 dollars/hr and B type 1 dollar/hr total money earned by both is 24dollars. Then what is the total number of persons

Ans. 15

20. Total balls are z, the number of red balls is n and the remaining are blak balls,then the % of black
balls equal to ?

Ans. (z - n) / z*100

21. If A = C, B = 2D what should be done to make the ratio same. i.e.a/b = c/d

Ans. Multiply A by 2

22. If P=Total number of components, Q = number of defective components .What is the % of non defective components?

Ans. (p-q) / p*100

23. If the cost of an article is x , first discount given is y% of cost, second discount given is z% of cost .
The selling price of x is

Ans. x (1-y / 100) (1- z / 100)

24.Which of the following are prime numbers

(a) 119
(b) 115
(c) 127
(d) none

Ans. (c)

25. A / B = C; C > D then

(a) A is always greater than D
(b) C is always greater than D
(c) B is always less than D
(d) None of these

Ans. (a)

26. If B>C and A<C which of the following is larger than A+B+C

Ans. (A + B)C

27. If for H hours of work the salary is S and the employee gets x hours of medical leave,
then what is the salary/hr ?

Ans. s/H-x

28. (1/6 of 596) / (0.695) = ?

Ans. 142

29. 35-30 + 4/7 - 5 + 1 = ?

Ans. 3

30. 10995 + 95 = ?

Ans. 11090

31. If on a salary of Rs."S" per month,one has to pay one tax of x Rs. and a second type
of tax of y Rs
then % of salary taken home is?

Ans. s-(x+y)/s * 100

32. B>A then which expression will be highest value

(a) A-B
(b) AB
(c) A+B
(d) Can't Say

Ans. (b)

33. K, L are men who take home a salary of x, y respectively.The total amount taken
home is

Ans. Kx + Ly

34. If out of X bulbs y bulbs are broken;The % of non broken bulbs

Ans. (x-y) / x*100

35. If on a salary s per month, a tax of x% of the salary and another of r% of the salary is deducted what
is the income.

Ans. s*(1-(x+r)/100

36. 0.512 * 18902358 =?

Ans. 9678007.296

37. If the % of defective balls is 10% balls,and the number of defective balls is 5.The number of balls is

Ans.50

38. 6.29% of 2.8 =?

Ans. 0.18

39. 0.398 * 456= ?

Ans. 181.49

40. 0 < x < 1 which is greater

(a) $1/x^2$
(b) 1/x
(c) x
(d) x^2

Ans. (a)

41. If c = a/b; a-1 = c, what is the relation between a and b?

Ans. b = a/a-1

42. What is the sum of 7 consecutive odd numbers with 27 as the fourth number

Ans.189

FLOWCHART SECTION

Directions: **There are 7 flow charts and each has 5-6 blank rectangles/diamonds with subquestion number in the rectangle/diamond. You have to fill the blank from the 5 options given against respective question number**

NOTE:These types of questions are not at all tough.You have to understand the logic and then it is very easy to fill the blanks. Some information is provided for getting to the answers.There will be blanks which have to be filled.

Examples of flow charts asked to be filled :
(1) There are 3 boxes of 3 balls each. you have to select the heaviest among all.

(2) There are red and black balls in a box. You select some balls from the blocks.If the ball chosen is red then you get one point. If the chosen ball is ball black and previous ball is red then you get two points. For winning u have to get seven points. No point for selecting consecutive balls of the same color.

(3)Classify objects in class A, class B and scrap. for classfing you have to do different tests such as weight test, material test etc.

(4)There is production process in which action depends on temperature and pressure and we have some temperature and pressure controls.Draw a flowchart to complete the process.

(5)Find max. and min. of the 12 nos.in an array.Arrang the array in ascending order and find the maximum and
minimum value in the array

(6)Diffrent age group are given and also diffrent salary slabs are given. Depending on the salary group as well as his group you have to classify the group of people in particular class.

Interview:

The interview questions were mainly on data structures, computer architecture, operating systems and computer networks.

Both technical and HR interviews are held. Also sometimes there may be a GD just to check the communications skills and awareness of the candidate.

TCS

Written Test:

Tata Consultancy Services conducts a **multiple choice test**. The test consists of four sections.

The first section is the **Verbal Section** with **15** questions to be attempted in **5** minutes. The questions deal with words and their synonyms. You need a high level of vocabulary to do well in this part. The **cut-off** in this section is 80%,i.e 16 questions.

The second section is a **Quantitative aptitude section**. **10** mathematical ability questions to answer in **10** minutes. You only have to get the logic right. You can answer all of them.. The questions deal with basic mathematics such as multiplication, percentages etc. This is the easiest among all the sections (try not to make silly mistakes).

The third section is the Reading **Comprehension section** with **45** minutes to answer **70** questions. Answer 55-65 questions. You have to do it fast.

The fourth section is **Psychometric**. This section is the simplest, yet the most trickiest. **150** questions about yourself in **30** minutes. Keep in mind when you answer this section, **NEVER THINK ABOUT THE ANSWER TWICE.** For if you do, you will get confused. **Never give the answer as '(c) ?'.** Lastly don't answer more than 140 questions. If you have doubt about any answer in your mind don't answer it and don't come back to the question. They have a **lower cut-off** of **90 marks** and an **upper cut-off** of **120 marks** in this section. If you go beyond these cut-off you lose the test. Keep this in mind.

Verbal

ACUMEN
a. exactness
b. potential
c. *shrewdness*
d. bluntness
e. None of these

MORTIFY
a. make a cavity
b. displease
c. *humiliate*
d. relapse
e. murder

ABODE
a. clay
b. obstacle
c. *dwelling*
d. bind
e. to beguile

BEHEST
a. behavior
b. *hold down*
c. hold up
d. relieve
e. condemn

ADAGE
a. advice
b. *proverb*
c. enlargement
d. advantage
e. usage

POTENTIAL
a. *latent*
b. hysterical
c. conventional
d. symmetrical
e. conscientious

DISCRETION
a. *prudence*

TO DISPEL
a. *to dissipate*

EXTRICATE
a. terminate

b. consistency
c. precipice
d. disturbance
e. distemper

ORDAIN
a. arrange
b. *command*
c. contribute
d. establish
e. control

FLORID
a. *ornate*
b. thriving
c. artistic
d. elegant
e. None of these

PENITENCE
a. liking
b. insightful
c. attractive
d. penetrable
e. *compunction*

WHET
a. *stimulate*
b. humorous
c. inculate
d. dampen
e. None of these

INCENTIVE
a. reflex
b. amplitude
c. inflection
d. *provocation*
e. escutcheon

LATITUDE
a. *scope*
b. segment
c. globule
d. legislature
e. lamentation

b. to dissent
c. to distort
d. to disfigure
e. to dissect

ERRATIC
a. unromantic
b. free
c. popular
d. steady
e. *unknown*

TO MERIT
a. to embrace
b. to devote
c. *to deserve*
d. to combine
e. to display

RAPT
a. lively
b. *concealed*
c. engrossed
d. prototype
e. None of these

TO HEAP
a. *to pile*
b. to forbid
c. to proceed
d. to share
e. to stoop

CAJOLE
a. *coax*
b. motivate
c. profound
d. mollify
e. evade

OVULATE
a. penury
b. immunize
c. *fertilize*
d. reproduce
e. incisions

b. isolate
c. *liberate*
d. simplify
e. frustrate

DISPARITY
a. *inequality*
b. impartiality
c. unfairness
d. twist
e. None of these

TO CONFISCATE
a. to harass
b. to repulse
c. to console
d. *to appropriate*
e. to congregate

PIOUS
a. historic
b. *devout*
c. multiple
d. fortunate
e. authoritative

LETHARGY
a. reminiscence
b. category
c. fallacy
d. unanimity
e. *stupor*

CARGO
a. cabbage
b. camel
c. lance
d. *freight*
e. flax

OVATION
a. oration
b. gesture
c. emulation
d. *applause*

<u>Aptitude</u>

1. A family, planning a weekend trip, decides to spend not more than a total of 8 hours driving. By leaving early in the morning, they can average 40 miles per hour on the way to their destination. Due to the heavy Sunday traffic, they can average only 30 miles per hour on the return trip. What is the farthest distance from home they can plan to go?
  (a) 120 miles or less   (b) Between 120and 140 miles
(c) 140 miles
  (d) Between 140 and 160 miles (e) 160 miles or more

2. A car is filled with four and half gallons of fuel for a round trip. If the amount of fuel taken while going is 1/4 more than the amount taken for coming, what is the amount of fuel consumed while coming back?
  (a) Less than 2 gallons   (b) 2 gallons
(c) 2 1/2 gallons
  (d) 3 gallons   (e) More than 3 gallons

3. A 3-gallon mixture contains one part S and two parts R. In order to change it to a mixture containing 25% S, how much R should be added?
  (a) 1/2 gallon   (b) 2/3 gallon   (c) 3/4 gallon   (d) 1 gallon   (e) 1 1/2 gallon

4. A tree grows only 3/5 as fast as the one beside it. In four years the combined growth of the two trees is eight feet.
 How much does the shorter tree grow in two years?
  (a) Less than 2 feet   (b) 2 feet   (c) 2 1/2 feet
  (d) 3 feet   (e) more than 3 feet.

5. Wind flows at 160 miles in 330 minutes, for traveling 80 miles how much time does it require?
  (a) 1 hour 30 minutes   (b) 1 hour 45 minutes   (c) 2 hours
  (d) 2 hours 45 minutes   (e) 3 hours

6. A stationary engine has enough fuel to run 12 hours when its tank is 4/5 full. How long will it run when the tank is 1/3 full?
  (a) Less than 2 hours   (b) 2 hours   (c) 3 hours
  (d) 4 hours   (e) 5 hours

7. If A is traveling at 72 km per hour on a highway. B is traveling at a speed of 25 meters per second on a highway. What is the difference in their speeds in meters per second?

    (a) 1/2 m/sec   (b) 1
m/sec   (c) 1 1/2 m/sec
    (d) 2 m/sec   (e) 3 m/sec

8. A salesperson by mistake multiplied a number and got the answer as 3, instead of dividing the number by 3. What is the answer he should have actually got?

    (a) 0   (b) 1/3   (c) 1   (d) 2
              (e) 3

9. If the length of a rectangle is increased by 30% and the width is decreased by 20%, then the area is increased by...

    (a) 10%   (b) 5%   (c) 4%   (d) 20%
              (e) 25%

10. In the class of 40 students, 30 speak Hindi and 20 speak English. What is the lowest possible number of students who speak both the languages?

    (a) 5   (b) 20   (c) 15
(d) 10   (e) 30

11. The most economical prices among the following prices is:

    (a) 10 kilo for Rs.160   (b) 2 kilo for Rs.30
(c) 4 kilo for Rs.70
    (d) 20 kilo for Rs.340   (e) 8 kilo for Rs.130

12. A truck contains 150 small packages, some weighing 1 kg each and some weighing 2 kg each. how many packages weighing 2 kg each are in the truck if the total weight of all the packages is 264 kg?

    (a) 36   (b) 52   (c) 88
(d) 124   (e) 114

13. A man was arrested for exceeding the speed limit by 10 miles an hour. A second man was charged with exceeding the same limit by twice as much. The second man was driving 35 miles per hour. What was the speed limit?

    (a) 10 miles per hour   (b) 15 miles per hour
(c) 20 miles per hour
    (d) 25 miles per hour   (e) 30 miles per hour

14. One year ago Pandit was three times his sister's age. Next year he will be only twice her age. How old will Pandit be after five years?

    (a) 8   (b) 12   (c) 11
(d) 13   (e) 15

15. If two pencils cost 8 cents, then how much do 5 pencils cost?

    (a) 18 cents   *(b) 20 cents*   (c) 22 cents   (d) 23 cents   (e) 24 cents

Passage

All the questions are of multiple choice type. You have to answer the questions based on the preceding paragraph. All the questions have the same answer choice. The **choices** are as given below:

      (a) True.
      (b) False.
      (c) Cannot Say.

Consider the following paragraph:
      Researchers in Mumbai have found that certain types of gallstones can be dissolved by injecting them with a gasoline additive in the form of ether. The ether is injected through a tube directly into the gall bladder. The one-day treatment works only on cholesterol-based stones, not those composed largely of calcium. However, as the cholesterol stones are by far the most common type, for millions of gallstone sufferers the treatment should offer a welcome alternative to surgery, the commonest option in most hospitals.

\# "It takes more than one day for ether to dissolve a calcium-based gallstone".

\# "Gallstones can only be dissolved by injections".

\# "Gallstones can quickly be cured with surgery".

\# "Ether is largely used for dissolving gallstones".

\# "Calcium stones can be cured in one day".

\# "Hundreds of people contains calcium stones".

Consider the following paragraph:
      My father had no brothers, but his three sisters are all married and each has two children. My grandfather has two sons.

\# "My father was the only child".

\# "I have only one uncle".

\# "One of my aunts is a spinster".

"I have six cousins on my father's side".

"My grandfather was the only son".

Consider the following paragraph:

In the Totalitarian days, the words have very much devalued. In the present day, they are becoming domestic, that is, the words will be much more devalued. In that days, the words will be very much effected in political area. But at present, the words came very cheap. We can say they come free at cost.

"In Totalitarian society, words are devalued".

"Totalitarians will have to come much about words".

"In the Totalitarian society the words are used for the political speeches".

Consider the following paragraph:

In past helicopters were forced to ground or crash because of the formation of the ice on the rotors and engines. A new electronic device has been developed which can detect the water content in the atmosphere and warns the pilot, if the temperature is below freezing temperature; about the formation of ice on the rotors and wings.

"The electronic device can avoid the formation of ice on the wings".

"There will be malfunction of rotor and engine because of formation of ice".

"The helicopters were to be crashed or grounded".

"There is only one device that warns about the formation of ice".

Consider the following paragraph:

Human existence is not susceptible of arbitrary division between consciousness and unconsciousness. The conscious world invaders and shapes the activities of the unconscious, while many of the great achievements of humanity's waking hours where wholly or partly inspired by dreams. Even if it could argued that dreams precede experience such a dichotomy could not be drawn, as the influence of the dreaming on the waking state would remain unclear, but as yet no common vocabulary exists to record the substance of prenatal dreaming.

"Sleep can be a creative state".

Consider the following paragraph:

FLORA 3-piece sofa-set is at the top of our upholstery range. This high-backed quality sofa-set boasts an impressive specification which starts with a hardwood frame in teak and a padded front edge ensuring really deep, long-lasting comfort. Seat cushions are of high resilience foam and back cushions of softest hollow fill. The whole set is

carefully upholstered throughout in a choice of superb fabrics ranging from cotton print to velvet.

"The padding is there to ensure that the furniture will last for a long time".

"The firm sells other upholstery furniture".

Consider the following paragraph:
        Hacking is a crime made possible by a relatively new technology, which is one of the reasons it is often poorly understood and reported. Many computers, but by no means all, are now linked together in networks which allow users on one computer to communicate with others on the same network. If a computer is not networked, no manipulation of its data from another machine possible. So long as users are authorized, networking is just a way of making work easier more productive. Hacking, on the other hand is the unauthorized use of networks or unauthorized entry into the computers themselves. Most people do not break into the networks they use, since they are already accredited users.

"Hackers do not work for the firms whose networks they break into".

"Hacking is the only vulnerability of the computers for the usage of the data".

"Hacking is done mostly due to the lack of computer knowledge".

Consider the following paragraph:
      Polycythemia often occurs in people who have chronic lung disease, but can appear spontaneously in healthy individuals. Excessive numbers of red blood cells manufactured by the body and the individual then develops a very healthy-looking, ruddy complexion. The blood becomes thicker and is liable to clot and block major blood vessels. High blood pressure is another frequent complication. Treatment involves venesection, in which a liter or so of blood is removed from the body. Medication may also be given to reduce the numbers of red blood cells manufactured in the body.

"Lung disease frequently precedes polycythemia".

Consider the following paragraph:
        Bindweed is only effectively controlled by applying a solution of brushwood-killer to the growing tips. It is necessary to unwind a suitable length from the host plant before treatment, but this is not so very difficult, and it does not seem essential to find and treat every leader on the same weed. The solution should be made up in a can which is carried in one hand, while the other, in a rubber glove, inserts the leaders in the can. If the the leaders can be laid out on the the ground , they can easily be wetted with a small brush. As long as the weather is calm, there is no real risk of damage to adjacent plants, and in two or three weeks the weeds should have disappeared.

"Brushwood-killer can pose a threat to other plants in the garden".

Consider the following paragraph:
         Senior managers in a leading company said that new Japanese investment in India was transforming the car industry, and warned that jobs were under threat from Japanese competition. They stated that increasing competition would be coupled with an inevitable downturn in the car market and the recent rise interest rates which has already hit demand.

"The managers issued their warning after a rise in the interest rates".

"According to the senior managers, the Japanese investment in India will lead to a glut in the car market".

"Some senior managers said that more people will want to by new cars in the future".

"The perception of the senior managers is the new Japanese investment in India is leading to more automation of the car industry".

"The increased rate of interest will mean that Japanese firms will cease to operate in this country".

"The increase in loan interest will adversely affect car sales".

"Japanese workers are taking over the jobs of Indian industry".

"Managers said that interests in car will go down after seeing the raise in interest rates".

"People are very interested to buy the cars".

Consider the following paragraph:
         The new Starfire has an advanced four-cylinder engine with catalytic converter and uses only unleaded petrol. Versatility is a major feature of the range and the 1500 and 1800 models have the same high level of specification inside and out. The only obvious visual difference, internally and externally, is the use of alloy wheels on the 1800 version, together with a discreet change in badging. The StarFire 2000 is distinguished by its tailgate spoiler and the rectangular fog and driving lamps integrated into the front bumper which are also included in the specification.

"Internally, the Starfire 2000 looks like the 1500 model".

Consider the following paragraph:
         Pierre Claude Jean Allouez explored lake superior from 1665 to 1667. At his little mission station near the western end of the lake, he heard from the Indians of a great river to the west. Pierre Jacques Marquette determined to investigate. In 1673, accompanied by Louis Jolliet and five others, he left St. Ignace mission and ascended the

fox river, which flows into green bay crossed over to Wisconsin river and followed it to the upper Mississippi. The party then descended the Mississippi to the mouth of Arkansas. These Frenchmen were not first Europeans to sight or travel the Mississippi. De Soto and Moscoso had done so a century and a half before. The report of the exploration was rushed back to Quebec, where, in 1672, Count Frontenac had arrived as Governor of the province. He and his friend, the remarkable La Salle-who earlier may have penetrated the Ohio river valley-listened with deep interest.

"Allouez explored the western end of lake superior".

"Marquette and his party were not the first French men to travel the Mississippi river".

"La Salle listened with deep interest- the report of exploration of De Soto and Moscoso".

"La Salle explored the Mississippi river valley".

Consider the following paragraph:

Dr. Goddard was the first to fire a rocket that reached a speed faster than the speed of sound. He was the first to develop a gyroscopic steering apparatus for rockets. He was the first to use vanes in the jet stream for rocket stabilization during the initial phase of a rocket flight. And he was the first to patent the idea of step rockets. After proving on paper and in actual tests that a rocket can travel in vacuum, he developed the mathematical theory of rocket propulsion and rocket flight, including basic designs for long-range rockets. All of this information was available to our military men before World War II, but evidently its immediate use didn't seem applicable. Near the end of World War II we started intense work on rocket-powered guided missiles, using the experiments and developments of Dr. Goddard and the American Rocket Society.

"The stabilization problem of rockets in the initial phase was solved by Dr. Goddard."

"Rockets can travel faster than sound, thanks to gyroscopic steering."

"Goddard lived before World War II".

"After careful mathematical calculations, Dr. Goddard proved that rockets can travel in vacuum".

Consider the following paragraph:

In March 1513, de Leon sailed off confidently from Peuto Rico for the Bahamas. Landing briefly at San Salvador, Bahamas, he wound through unchartered islands until he sighted an extensive coastline. He had no reason to suspect that it is anything more than an island, but he followed the coast for a day without rounding its end or finding a suitable landing place. He named the "island" La Florida. This name came to be applied by the Spanish to the entire Southeastern United States and beyond. Then, near the 30th parallel, de Leon landed at the mouth of the St. Johns river.

Determined to be the first to circumnavigate the "island", he turned south, traced the coast around the tip of the peninsula, moved to the west, perhaps reaching Tampa bay. After 7 weeks, he gave up hope of circling the northern tip of this "island"; it was incredibly large and he may have suspected that he had discovered the long sought mainland. If so, it all belonged to his King, for he had earlier planted the Spanish flag and claimed Florida for Ferdinand.

"de Leon is from Spain, ruled by Ferdinand".

"de Leon is very patriotic".

"de Leon discovered part of US during his journey".

Consider the following paragraph:
    James Madison understood that interests groups will inevitably develop within a free political system. The problem, as Madison saw it, was to prevent any single interest group from becoming so strong that it was able to dominate the political system. This could be accomplished by legislating restrictions on political behavior, but that solution meant a sacrifice of some of the freedom that Madison prized so highly. A better solution, he thought, was to extend the territorial scope of the government. This would allow for greater diversity of interests in the nation, and a greater number of groups competing for power. Each interest group would thereby find it more difficult to appeal to a majority of the people, and to dominate the political process.

"The more interest groups there are in a political system, the less freedom there is for everyone."

"Legislating restrictions on political behavior is sometimes the only method of preserving political freedom."

"Increasing the territorial scope of a government can help to preserve freedom."

"According to Madison, in a free political system, interest groups are undesirable."

Consider the following paragraph:
    The regulations and expenses to invent, patent and market new ideas and products imposes a heavy burden on inventors. The cost is often absorbed by large corporations with research and development facilities they provide. Corporations also help creative people contribute to society without suffering the loss of income or security of the private inventor. The realities of this arrangement are that many good ideas are never brought into the marketplace and the cost of products on the market is high because of the development cost. However, protection provided by the patents and the safety to the public to avoid placing harmful products on the market is important to maintain. Thus, as is often the case, rules and regulations have their favorable and unfavorable consequences.

"The regulations and expenses to invent, patent and market new ideas is an expensive proposition to the inventors".

"Good ideas are never brought into the marketplace because of the costs involved in inventing, patenting marketing them".

"Corporations steal the individual inventor of their inventions".

Consider the following paragraph:
       Being born female and black were two handicaps Gwendolyn Brooks states that she faced from her birth, in 1917, in Kansas. Brooks was determined to succeed. Despite the lack of encouragement she received from her teachers and others, she was determined to write and found the first publisher for one of her poems when she was 11. In 1945, she marketed and sold her first book; national recognition ensued. She applied for and received grants and fellowships from such organizations as the AAAL and the Guggenheim Foundation. Later she received the Pulitzer prize for poetry; she was the first black woman to receive such an honor. Brooks' reaction to fame is atypical. She continues to work and work hard. She writes, travels, and helps many who are interested in writing. Especially important for her is increasing her knowledge of her black heritage and encouraging other people to do the same. She encourages dedication to the art to would-be writers.

"Brooks' story illustrates the power of strong determination".

"She became the author of a book in her teens".

"Gwendolyn received the Pulitzer prize for her first poetry".

Consider the following paragraph:
       A cave is a natural opening in the ground extending beyond the zone of light and large enough to permit the entry of man. Occurring in a wide variety of rock types and caused by widely differing geological processes, caves range in size from single small rooms to interconnecting passages many miles long. The scientific study of caves is called speleology. It is a composite science based on geology, hydrology, biology and archeology, and thus holds special interest for earth scientists. Caves have been natural attractions since prehistoric times. Prolific evidence of early man's interest has been discovered in caves scattered throughout the world. Skeletons of some of the earliest manlike creatures (Australopithecines) have been discovered in cave deposit in South Africa, and the first evidence of primitive Neanderthal man was found in Germany. Cro-Magnon man created his remarkable murals on the walls of caves in France.

"Primitive human form originated in Germany".

"Study of caves is the study of earth, water, life and early man".

"Cro-Magnon man was more intelligent than Neanderthal man".

"Caves are a natural attraction because they reveal information about the early man".

Consider the following paragraph:
  Although invaders represent the threat to the conservation of flora and fauna, there are two special cases in which invasion have been deliberately brought about. One is the desire to control pests by natural predators, which may have to be brought from other countries. The second is releasing organisms into the wild (or on to farms, from which they might escape) that are completely novel, because they have been genetically engineered. There is nothing intrinsically sinister about engineered organisms, but any novelty must be regarded as potential invader.

"Pests are more dangerous than their natural predators".

Consider the following paragraph:
  Life in colonial times was harsh, and the refinements of the mother country were ordinarily lacking. The colonists, however, soon began to mold their English culture into the fresh environment of new land. The influence of religion permeated the entire way of life. In most Southern colonies, the Anglican church was the legally established church. In New England, the Puritans were dominant; and in Pennsylvania, the Quakers. Especially in the New England colonies, the local or village church was the hub of community life; the authorities strictly enforced the Sabbath and sometimes banished non-believers. Unfortunately, the same sort of religious intolerance, bigotry and superstition associated with the age of Reformation in Europe also prevailed in some of the colonies, though on a lesser scale. In the last half of the 17th century, during sporadic outbreak of religious fanaticism and hysteria, Connecticut authorities tried and hanged several women as "witches". Early in the 17th century, some other witchcraft persecution occurred in Virginia. As the decades passed, however, religious tolerance developed in colonies.

"New England was part of the Southern colonies".

"During the mid 17th century there was significant improvement in religious tolerance and superstition".

"Life in colonial times was harsh due to the strong influence of religion".

"The Anglican church used to govern the people in most Southern colonies".

Consider the following paragraph:
  Confucius said that to know the future we have to understand the past. in his time, transport, communications and scientific knowledge were less developed than they are today. news took weeks to travel whereas today satellite links connect the continents virtually instantaneously, but our technological advances in the field of communications seem not to improved our capacity to understand one another.

"We understand each other better now than in Confucius' time because we can travel more quickly".

"In Confucius' day people were more intelligent".

"We have made great improvements in transport since Confucius' day".

"Technological advances in communication and human capacity to understand one another are directly proportional".

"In Confucius' day time news took months to travel".

"According to Confucius the past has a linkage to the future".

"Even with the fast developments of the technology we can't live happily".

Consider the following paragraph:
Every form of art is protected by copyright, upon the expiration of which the property passes to the public domain and becomes freely available to anyone wishing to exploit it commercially. the time has come when all treasures should pass to the control of a trust, and by this be made readily available to anyone on payment of a fee or royalty. The income from the works Van Gogh would alone be enormous. Those who now gain financial benefit from his genius should make some contribution to the welfare of the arts in general.

"Instead of buying a ticket, museum goers should pay a fee to a trust for the benefit of arts".

"It is not desirable to pass the control of treasures to a trust".

"Van Gogh's paintings are not protected by copyright".

"All artworks must be managed by a trust, so that the income generated can be used for the welfare of the arts".

"Copyright in art is valid only for a limited period of time".

"Van Gogh's descendants should be asked to make some contribution to the arts".

"Van Gogh's works are under this copy right rule".

"People are free to go to the public because of the copy right rule".

"People gives to theater and collect the money for development".

"We have asked the Van Gogh descendants to help for the developments of art".

Organizing the home can be perceived as conferring power, so large numbers of women are unwilling to let go of chores, even when they have careers. A survey found that, out of 65 new marriages, not one single wife expected her husband to share work equally. According to the Family Policy Studies Center, 81% of working wives return home to do all the cooking. The average male has nearly half as much as more free time at weekends than his wife, and the typical new father spends just 37 seconds a day talking to his baby.

"Only career women perceive organizing the home as conferring power".

"The average wife has half as much free time at weekends as her husband".

"The family planning studies center shows that 81% working wives do all the cooking at home".

"19% working wives do not want to do the cooking at home".

"Housewives want the husbands to take part equally in the household".

"Wives have half as much leisure time as the husbands have".

"39% of the men will work equally in the house in cleaning and washing".

Consider the following paragraph:

Statistics show that millions of vehicles have been carried by shuttle over the past 30 years through Alpine tunnels without one ever catching fire. In the Alpine tunnels, drivers and passengers sit in their vehicles on the shuttle trains. Only one vehicle has ever caught fire on the busy French motorail equivalent system. This sort of accident is not possible in a closed shuttle. Assertion that a vehicle fire will lead to catastrophe have no basis. Since the resources exist to detect, control and extinguish a fire, and to remove any persons present safely to an adjoining wagon, leaving any surviving fire facing rapid extinction within a wagon built to contain fire for 30 minutes, catastrophe seems very unlikely.

" It is theoretically possible for a vehicle to catch fire even in a closed wagon".

" The French motorail system is inferior to the shuttle train system."

"No accident can occur in the closed tunnels".

"Fire is allowed to live for 30 min".

"All the cars that travel in the tunnels will be carried by rail shutters".

PHYSCOMETRY TEST

Direction:

In this section you will find different questions with the same meaning. In all such questions your answer has to be same. for e.g.:

In being thrown by chance with a stranger, you wait for the person to introduce himself or herself.

      (a) Yes   (b) No   (c) ?

It is difficult for you to chat about things in general with people.

      (a) Yes   (b) No   (c) ?

These two questions have similar meanings. If you answer the first one 'NO' and the second one 'YES', i.e. if you differ in your answers to similar questions you lose marks for every question with the above meaning.

The choices to these questions are:

      (a) Yes.
      (b) No.
      (c) ?

1. You start to work on a project with great deal of enthusiasm.
2. You would rather plan an activity than take part in it.
3. You have more than once taken lead in organizing project or a group of some kind.
4. You like to entertain guests.
5. Your interests change quickly from one thing to another.
6. When you eat a meal with others, you are usually one of the last to finish.
7. You believe in the idea that we should " eat, drink and be merry, for tomorrow we die."
8. When you find that something you have bought is defective, you hesitate to demand an exchange or a
   refund.
9. You find it easy to find new acquaintances.
10. You are sometimes bubbling over with energy and sometimes very sluggish.
11. You are happiest when you get involved in some projects that calls for rapid action.
12. Other people think of you as being very serious minded.
13. In being thrown by chance with a stranger, you wait for the person to introduce himself or herself.
14. You like to take part in many social activities.
15. You sometimes feel "just miserable" for no good reason at all.
16. You are often so much " on the go" that sooner or later you may wear yourself out.
17. You like parties you attend to be lively.
18. If you hold an opinion that is radically different that expressed by a lecturer, you are likely to tell the
   person about it either during or after the lecture.
19. It is difficult for you to chat about things in general with people.

20. You give little thought to your failures after they are passed.
21. You often wonder where others get all the excess energy they seem to have.
22. You are inclined to stop to think things over before you act.
23. You avoid arguing over a price with a clerk or sales person.
24. You would dislike very much to work alone in some alone place.
25. You often find it difficult to go to sleep at night because you keep thinking of what happened during the
    day.
26. You find yourself hurrying to get to places even when there is plenty of time.
27. You like work that requires considerable attention to details.
28. You are satisfied to let some one else take the lead in group activities.
29. You enjoy getting acquainted with people.
30. It takes a lot to get you emotionally stirred up or excited.
31. You work more slowly and deliberately than most people of your sex and age.
32. You are a carefree individual.
33. When people do not play fair you hesitate to say anything about it to them.
34. It bothers you to have people watch you at your work.
35. You have usually been optimistic about your future.
36. You like to have plenty of time to stop and rest.
37. You take life very seriously.
38. You enjoy applying for a job in person.
39. You would like to be a host or hostess for parties at club.
40. You often feel uncomfortable or uneasy.
41. You are the kind of person who is "on the go" all the time.
42. You often crave excitement.
43. The thought of making a speech frightens you.
44. You find it easy to start conversation with strangers.
45. You often feel guilty without a very good reason for it.
46. People think you are a very energetic person.
47. You sometimes make quick decisions that you later wish you hadn't made.
48. You find it difficult to ask people for money or other donations, even for a cause in which you are
    interested.
49. You are so naturally friendly that people immediately feel at ease with you.
50. You daydream a great deal.
51. You are quick in your actions.
52. You have a habit of starting things and then losing interest in them.
53. When you were a child many of your playmates naturally expected you to be the leader.
54. You sometimes avoid social contacts for fear of doing or saying the wrong thing.
55. You have frequent ups and downs in mood, sometimes with and sometimes without apparent cause.
56. You always seem to have plenty of vigour and vitality.
57. It is difficult for you to understand people who get very concerned about things.
58. When a clerk in a store waits on others who come after you, you call his or her attention to the fact.

59. You would be very unhappy if you were prevented from making numerous social contacts.
60. There are times when your future looks very dark.
61. You sometimes wish that people would slow down a bit and give you a chance to catch up.
62. Many of your friends think you take your work too seriously.
63. You hesitate to walk into a meeting when you know that everyone's eye will be upon you.
64. You limit your friendships mostly to members of your own sex.
65. You almost always feel well and strong.
66. You seem to lack the drive necessary to get as much as other people do.
67. You make decisions on the spur of the moment.
68. You are rather good at bluffing when you find yourself in difficulty.
69. After being introduced to someone , you just cannot think of things to say to make good conversation.
70. You feel lonesome even when with other people.
71. You are able to work for unusually long hours without feeling tired.
72. You often act on the first thought that comes into your head.
73. At the scene of an accident, you take an active part in helping out.
74. You have difficulty in making new friends.
75. Your mood often changes from happiness to sadness or vice versa without knowing why.
76. You talk more slowly than most people.
77. You like to play practical jokes upon others.
78. You take the lead in putting life into a dull party.
79. You would like to belong to as many clubs and social organizations as possible.
80. There are times when your mind seems to work very slowly and other times when it works very rapidly.
81. You like to do things slowly and deliberately.
82. You are a happy-go-lucky individual.
83. When you are served stale or inferior food in a restaurant, you say nothing about it.
84. You would rather apply for a job by writing a letter than by going through with a personal interview.
85. You are often in low spirits.
86. You are inclined to rush from one activity to another without pausing enough for rest.
87. You are so concerned about the future that you do not get as much fun out of the present as you might.
88. When you are attracted to a person whom you have not met earlier you make an active attempt to get
    acquainted even though it may be quite difficult.
89. You are inclined to limit your acquaintances to select few
90. you seldom give your past mistakes a second thought.
91. You are less energetic than many people you know.
92. You often stop to analyzed your thoughts and feelings.
93. You speak out in meetings to oppose those whom you feel sure are wrong.
94. You are so shy it bothers you.

95. You are sometimes bothered by having a useless thought come into your mind over and over.
96. You get things in hurry.
97. It is difficult for you to understand how some people can be so unconcerned about the future.
98. You lie to sell things (i.e. to act as a sales person)
99. You are often "Life of the Party".
100. You find daydreaming very enjoyable.
101. At work or at play other people find it hard to keep up with the pace you set.
102. You can listen to a lecture without feeling restless.
103. You would rather work for a good boss than for yourself.
104. You can express yourself more easily in speech than in writing.
105. You keep in fairly uniform spirits.
106. You dislike to be hurried in your work.
107. You sometimes find yourself "crossing bridges before you come to them".
108. You find it somewhat difficult to say "no" to a sales person who tries to sell you something you do not
     really want.
109. There are only a few friends with whom you can relax and have a good time.
110. You usually keep cheerful in spite of trouble.
111. People sometimes tell you to "slow down" or "take it easy".
112. You are one of those who drink or smoke more than they know they should.
113. When you think you recognize people you see in a public place, you ask them whether you have met
     them before.
114. You prefer to work alone.
115. Disappointment affect you so little that you seldom think about them twice.
116. You are slow and deliberate in movements.
117. You like wild enthusiasm, sometimes to a point bordering on rowdyism at a football or baseball game.
118. You feel self conscious in the presence of important people.
119. People think of you as being a very social type of person.
120. You have often lost sleep over your worries.
121. You can turn out a large amount of work in a short time.
122. You keep at a task until it is done, even after nearly everyone else has given up.
123. You can think of a good excuse when you need one.
124. Other people say that it is difficult to get to know you well.
125. You daydreams are often about things that can never come true.
126. You often run upstairs taking two steps at a time.
127. You seldom let your responsibility interfere with your having a good time.
128. You like to take on important responsibilities such as organizing a new business.
129. You have hesitated to make or to accept "dates" because of shyness.
130. Your mood is very easily influenced by people around you.
131. Others are often amazed by the amount of work you turn out.
132. You generally feel as though you haven't a care in the world.
133. You find it difficult to get rid of sales person whom you do not care to listen or give

your time.

134. You are a listener rather than a talker in a social conversation.
135. You almost always feel that life is very much worth living.
136. It irritates you to have to wait at a crossing for a long freight train to pass.
137. You usually say what you feel like saying at the moment.
138. You like to speak in public.
139. You like to be with people.
140. You generally keep cool and think clearly in exciting situations.
141. Other people regard you as a lively individual.
142. When you get angry, if you let yourself go, you feel better.
143. You seek to avoid all trouble with other people.
144. People seem to enjoy being with you.
145. You sometimes feel listless and tired for no good reason.
146. It is hard to understand why many people are so slow and get so little done.
147. You are fond of betting on horse races and games, whether you can afford it or not.
148. If someone you know has been spreading untrue and bad stories about you, you see the person as
    soon as possible and have a talk about it.
149. Shyness keep you from being as popular as you should be.
150. You are generally free from worry about possible misfortunes.

‒

C TEST

This test consists of 50 questions. The Set Code for this paper is D.

1. The C language terminator is
    (a) semicolon   (b) colon   (c) period
(d) exclamation mark

2. What is false about the following -- A compound statement is
    (a) A set of simple statements   (b) Demarcated on either
side by curly brackets
    (c) Can be used in place of simple statement   (d) A C function is not a
compound statement.

3. What is true about the following C Functions
    (a) Need not return any value   (b) Should always return
an integer
    (c) Should always return a float   (d) Should always
return more than one value

4. Main must be written as
    (a) The first function in the program   (b) Second function in
the program

(c) Last function in the program   (d) Any where in the program

5. Which of the following about automatic variables within a function is correct ?
    (a) Its type must be declared before using the variable   (b) They are local
    (c) They are not initialized to zero   (d) They are global

6. Write one statement equivalent to the following two statements: x=sqr(a); return(x);
  Choose from one of the alternatives
    (a) return(sqr(a));   (b) printf("sqr(a)");
    (c) return(a*a*a);   (d) printf("%d",sqr(a));

7. Which of the following about the C comments is incorrect ?
    (a) Comments can go over multiple lines
    (b) Comments can start any where in the line
    (c) A line can contain comments with out any language statements
    (d) Comments can occur within comments

8. What is the value of y in the following code?
```
x=7;
y=0;
if(x=6) y=7;
else y=1;
```
  (a) 7   (b) 0   (c) 1   (d) 6

9. Read the function conv() given below
```
conv(int t)
{
    int u;
    u=5/9 * (t-32);
    return(u);
}
```
  What is returned
  (a) 15   (b) 0   (c) 16.1   (d) 29

10. Which of the following represents true statement either x is in the range of 10 and 50 or y is zero
    (a) x >= 10 && x <= 50 || y = = 0   (b) x<50
    (c) y!=10 && x>=50   (d) None of these

11. Which of the following is not an infinite loop ?
    (a) while(1)\{ ....}   (b) for(;;){...}
    (c) x=0;   (d) # define TRUE 0
      do{ /*x unaltered within the loop*/   ...
        .....}while(x = = 0);   while(TRUE){ ....}

12. What does the following function print?

```
func(int i)
{
    if(i%2)return 0;
    else return 1;
}
main()
{
    int =3;
    i=func(i);
    i=func(i);
    printf("%d",i);
}
```

(a) 3   (b) 1   (c) 0   (d) 2

13. How does the C compiler interpret the following two statements

```
p=p+x;
q=q+y;
```

(a) p= p+x;   (b)p=p+xq=q+y;   (c)p=
p+xq;   (d)p=p+x/q=q+y;
      q=q+y;   q=q+y;

For questions 14,15,16,17 use the following alternatives:
    a.int   b.char   c.string   d.float

14. '9'

15. "1 e 02"

16. 10e05

17. 15

18. Read the folllowing code

```
# define MAX 100
# define MIN 100
....
....
   if(x>MAX)
     x=1;
   else if(x<MIN)
     x=-1;
     x=50;
```

if the initial value of x=200,what is the value after executing this code?
    (a) 200   (b) 1   (c) -1   (d) 50

19. A memory of 20 bytes is allocated to a string declared as char *s then the following

two statements are executed:

             s="Entrance"

             l=strlen(s);

    what is the value of l ?

    (a)20   (b)8   (c)9   (d)21

20. Given the piece of code

        int a[50];

        int *pa;

        pa=a;

    To access the 6th element of the array which of the following is incorrect?

    (a) *(a+5)   (b) a[5]   (c) pa[5]   (d)
*(*pa + 5}

21. Consider the following structure:

             struct num nam

             {

               int no;

               char name[25];

             }

             struct num nam

n1[]={{12,"Fred"},{15,"Martin"},{8,"Peter"},{11,Nicholas"}};

             .....

             .....

             printf("%d%d",n1[2],no,(*(n1 + 2),no) + 1);

   What does the above statement print?

    (a) 8,9   (b) 9,9   (c) 8,8   (d)
8,unpredictable value

22. Identify the in correct expression

    (a)a=b=3=4;   (b)a=b=c=d=0;   (c)float a=int b= 3.5;   (d)int a;
floatb;a=b=3.5;

23. Regarding the scope of the varibles;identify the incorrect statement:

(a) automatic variables are automatically initialized to 0   (b) static variables are are automatically initialized to 0

(c) the address of a register variable is not accessible   (d) static variables cannot be initialized with any expression

24. cond 1?cond 2?cond 3?:exp 1:exp 2:exp 3:exp 4;
is equivalent to which of the following?

        (a) if cond 1

exp 1;
else if cond 2
exp 2;
else if cond 3
exp 3;
else exp 4;
(b) if cond 1
if cond 2
if cond 3
exp 1;
else exp 2;
else exp 3;
else exp 4;
(c) if cond 1 && cond 2 && cond 3
exp 1 |exp 2|exp 3|exp 4;
(d) if cond 3
exp 1;
else if cond 2 exp 2;
else if cond 3 exp 3;
else exp 4;

25. The operator for exponentiation is
(a) **   (b) ^   (c) %   *(d) not available*

26. Which of the following is invalid
(a) a+=b   (b) a*=b   (c) a>>=b   (d) a**=b

27. What is y value of the code if input x=10
```
y=5;
if (x==10)
else if(x==9)
else y=8;
```
(a)9   (b)8   (c)6   (d)7

28. What does the following code do?
```
fn(int n, int p, int r)
{
   static int a=p;
   switch(n)
   {
      case 4:a+=a*r;
      case 3:a+=a*r;
      case 2:a+=a*r;
      case 1:a+=a*r;
   }
```

}
(a) computes simple interest for one year   (b) computes amount on compound
interest for 1 to 4 years
(c) computes simple interest for four year   (d) computes compound interest for 1
year

29.
```
            a=0;
            while(a<5)
            printf("%d\\n",a++);
```
   How many times does the loop occurs?
      (a) infinite   (b)5   (c)4
         (d)6

30. How many times does the loop iterated ?
```
                for(i=0;i=10;i+=2)
                printf("Hi\\n");
```
      (a)10   (b) 2   (c)
5   (d) None of these

31. What is incorrect among the following
      A recursive function
         (a) calls itself   (b) is equivalent to a loop
         (c) has a termination condition   (d) does not have a return value at all

32. Which of the following go out of the loop if expn 2 becoming false
      (a) while(expn 1)\{...if(expn 2)continue;}   (b) while(!expn 1)\{if(expn
2)continue;...}
      (c) do{..if(expn 1)continue;..}while(expn 2);   (d) while(!expn 2)\{if(expn
1)continue;..\}

33. Consider the following program
```
                main()
                {
                   unsigned int i=10;
                   while(i>=0)
                   {
                     printf("%u",i)
                     i--;
                   }
                }
```
   How many times the loop will get executed
      (a)10   (b)9   (c)11   (d)
infinite

34. Pick out the odd one out

(a) malloc()   (b) calloc()   (c) free()   (d) realloc()

35. Consider the following program

```
main()
{
   int a[5]={1,3,6,7,0};
   int *b;
   b=&a[2];
}
```

The value of b[-1] is

(a) 1   (b) 3   (c) -6   (d) none

36.
```
# define prod(a,b)=a*b
main()
{
   int x=2;
   int y=3;
   printf("%d",prod(x+2,y-10));
}
```

the output of the program is

(a) 8   (b) 6   (c) 7   (d) None

37. Consider the following program segment

```
int n,sum=1;
switch(n)
{
   case 2:sum=sum+2;
   case 3:sum*=2;
   break;
   default:sum=0;
}
```

If n=2, what is the value of sum

(a) 0   (b) 6   (c) 3   (d) None of these

38. Identify the incorrect one

```
1.if(c=1)
2.if(c!=3)
3.if(a<b)then
4.if(c==1)
```

(a) 1 only   (b) 1&3   (c) 3 only   (d) All of the above

39. The format specified for hexa decimal is

(a) %d   (b) %o   (c) %x   (d) %u

40. Find the output of the following program

```
main()
{
  int x=5, *p;
  p=&x
  printf("%d",++*p);
}
```

(a) 5   (b) 6   (c) 0   (d)
none of these

41. Consider the following C code

```
main()
{
  int i=3,x;
  while(i>0)
  {
    x=func(i);
    i--;
  }
  int func(int n)
  {
    static sum=0;
    sum=sum+n;
    return(sum);
  }
}
```

The final value of x is

(a) 6   (b) 8   (c) 1   (d) 3

43. Int *a[5] refers to

(a) array of pointers   (b) pointer to an array   (c) pointer to a pointer   (d)
none of these

44. Which of the following statements is incorrect

(a)   typedef struct new
```
{
  int n1;
  char n2;
} DATA;
```

(b)   typedef struct
```
{
  int n3;
  char *n4;
}ICE;
```

(c)   typedef union
             {
               int n5;
               float n6;
             } UDT;

(d)   #typedef union
             {
               int n7;
               float n8;
             } TUDAT;

<p style="text-align:center; color:red;">TALENT TEST</p>

This test in not conducted by TCS directly, but by a consultancy, named *Venture Management Associates*, based in Trivandrum, Kerala.

<u>*Directions:*</u>

The duration of the test is 2 hours. The test is divided into 3 parts.

Part I	English Synonyms etc	34 Questions
Part II	Arithmetic	32 Questions Total: 78 Questions
Part III	Critical Reasoning	12 Questions.

Part I and Part III are Multiple Choice Questions and Part II is filling up the Blanks model.

There are 10 synonyms, 10 antonyms, both of MCQ type.

In section I there is a passage with seven blank spaces and nine sentences as answer choices. This passage is about 'mind power'. You have to choose the correct sentence and put the correct choice in the appropriate blank in the main passage. You have to be thorough with the English to answer this Question. The rest of the section is simple Mathematics problems. It would be good if you take a quick glance to the +2 Maths, since they ask questions curves, equations and gradients.

Section II consists of simple arithmetic problems and some reasoning problems. You have write the answer on the answer sheet and no choices are given.

Section III is "Critical Reasoning", and the questions are of MCQ type.

They have SIX Question paper sets, named A, B, C, D, E and F. We have tried to draw a general pattern and have included many sample questions which are in the same pattern with the papers.

<p style="text-align:center;"><u>SYNONYMS</u></p>

CENSURE	EFFUSIVE	SACROSANCT

a. purify
b. *approve*
c. edit
d. uncertain

a. wise
b. reserved
c. peaceful
d. *spontaneous*

a. *too important*
b. worship
c. sacrifice
d. best

ONUS
a. honest
b. inclination
c. *responsibility*
d. accuse

GREGARIOUS
a. logical
b. *helpful*
c. solitary
d. noisy

CLUTCH
a.
b.
c.
d.

DIVERGENT
a.
b.
c. *deviating*
d.

EMPIRICAL
a. theoretical
b. *mathematical*
c. verbal
d. royal

AUGMENT
a. decrease
b. belittle
c. simplify
d. *magnify*

FIDELITY
a. restlessness
b. *disloyalty*
c. feeble
d. vagueness

CITE
a. galvanize
b. *quote*
c. locate
d. visualize

GENERIC
a. external
b. particular
c. personal
d. subdued

SURVEILLANCE
a. inattention
b. visibility
c. census
d. prevention

TENACIOUS
a. intentional
b. obnoxious
c. *holding fast*
d. collecting

DIVULGE
a. look
b. refuse
c. deride
d. *reveal*

WHIMSICAL
a. victorious
b. swift
c. *fanciful*
d. momentary

TRANSIENT
a. *ephemeral*
b. permanent
c. clear
d. emptiness

EFFIGY
a. *dummy*
b. organ
c. charge
d. accordion

NASCENT
a. threat
b. purpose
c. quality
d. *emerging*

VOLUBLE
a. worthwhile
b. *loquacious*
c. circular
d. serious

PRECARIOUS
a. *hazardous*
b. priceless
c. premature
d. primitive

BENIGN
a. *kindly*
b. malignant
c. envy

CANDID
a. vague
b. *outspoken*
c. experienced

SONOROUS
a. reassuring
b. *resonant*
c. repetitive

d. tenfold

ANALOGOUS
a. capable
b. culpable
c. *comparable*
d. corporeal

ATTENUATE
a. appear
b. *weaken*
c. testify
d. soothe

d. anxious

VERACITY
a.
b.
c. *truthfullness*
d.

STANDING
a. reputation
b. activity
c. long time
d. *duration*

d. sisterly

CIRCUITOUS
a. *indirect*
b. complete
c. obvious
d. aware

PEDIGREE
a. dogs
b. vast
c. courage
d. *line of ancestry*

ANTONYMS:

EXPEDIENT
a. illiterate
b. delayed
c. *mistake*
d. impediment

IRRADIATE
a. agreement
b. distance
c. flight
d. clarity

ANOMALY
a. desperation
b. requisition
c. registry
d. *regularity*

BENIGN
a. peaceful
b. blessed
c. wavering
d. *malignant*

ANALOGUE
a. same
b. *digital*
c. lengthy
d. dull

DANGLE
a. hanging
b. loose
c. *secure*
d. mingle

SPENDTHRIFT
a. *miser*
b. savings
c. cautious
d. extravagant

INDIGENOUS
a.
b.
c.
d.

CRYPTIC
a. futile
b. famous
c. *candid*
d. indifferent

OPTIMUM
a. pessimistic
b. minimum
c. chosen
d. *worst*

AUGMENT
a. keep away
b. be disturbed
c. *to increase*
d. dig out

BOLSTER
a. defeat
b. *to strengthen*
c. be angry
d. depth

COMPLIANCE
a. light
b. fresh
c. take away
d. energize

DEBILITATE
a. *balmy*
b. bedevil
c. animate
d. deaden

DEROGATORY
a. roguish
b. immediate
c. conferred
d. *praising*

ANALOGOUS	**RETROGRADE**	**ERRONEOUS**
a. *not comparable*	a. *progressing*	a. *accurate*
b. not capable	b. inclining	b. dignified
c. not culpable	c. evaluating	c. curious
d. not congenial	d. concentrating	d. abrupt
CENSURE	**TRANSIENT**	**EXONERATE**
a. process	a. carried	a. forge
b. enclose	b. close	b. *accuse*
c. *praise*	c. *permanent*	c. record
d. penetrate	d. certain	d. reimburse
DIVULGE	**VERITY**	**GREGARIOUS**
a. converge	a. *falsehood*	a. anticipating
b. intake	b. sanctity	b. glorious
c. involve	c. rarity	c. *antisocial*
d. *conceal*	d. household	d. similar
SURVEILLANCE	**CENSURE**	**OBJECTIVE**
a. *inattention*	a. augment	a. indecisive
b. visibility	b. eradicate	b. apathetic
c. census	c. enthrall	c. *emotionally involved*
d. prevention	d. *commend*	d. authoritative
HAMPER	**EMPIRICAL**	
a.	a. *theoretical*	
b.	b. mathematical	
c.	c. verbal	
d.	d. royal	

SECTION I

1. If VXUPLVH is written as SURMISE, what is SHDVD ?

   Ans. PEASA (hint: in the first word, the alphabets of the jumbled one is three alphabets after the corresponding alphabet in the word SURMISE. S = V-3, similarly find the one for SHDVD)

2. If DDMUQZM is coded as CENTRAL then RBDJK can be coded as ---------

   Ans. QCEIL (hint: Write both the jumbled and the coded word as a table, find the relation between the corresponding words, i.e C= D-1, N=M+1 & so on

3. In the word ECONOMETRICS, if the first and second , third and forth ,forth and fifth, fifth and sixth words are interchanged up to the last letter, what would be the tenth letter from right?

   Ans. word is CENOMOTEIRSC tenth word is R

4. Find the result of the following expression if, M denotes modulus operation, R denotes round-off, T denotes truncation: M(373,5)+R(3.4)+T(7.7)+R(5.8)

Ans. 19

5. What is the largest prime number that can be stored in an 8-bit memory?

Ans.

6. Find the physical quantity in units from the equation:
(Force*Distance)/(Velocity*Velocity)

Ans. Ns^2/m

7. Find the value of @@+25-++@16, where @ denotes "square" and + denotes "square root".

Ans: 621

8. If f(0)=1 and f(n)= f(n-1)*n, find the value of f(4).

Ans: 24

9. Convert the decimal number 310 to the base 6.

Ans: 1234

10. Find the missing number in the series: 2,   5,   __ ,   19 ,   37,   75

Ans: 9

11. In a two-dimensional array, X(9,7), with each element occupying 4 bytes of memory, with the address of the first element X(1,1) is 3000, find the address of X(8,5).

Ans.

12. Find the fourth row, having the bit pattern as an integer in an 8-bit computer, and express the answer in its decimal value.

A 0 0 0 0 1 1 1 1
B 0 0 1 1 0 0 1 1
C 0 1 0 1 0 1 0 1
(AU(B-C)) ?

Ans. 29

13. Complete the series 2, 7, 24, 77,__ (hint: 2*12= 24, 7*11= 77, therefore 24*10= 240)

Ans: 240

14. Consider the following diagram for answering the following questions:

A. Find the difference between people playing cricket and tennis alone.
> *Ans: 4*

B. Find the percentage of people playing hockey to that playing both hockey and cricket.
> *Ans:*

C. Find the percentage of people playing all the games to the total number of players.
> *Ans: 6%*

15. One more question of the same type (Same type of diagram; of course in a different set)

 1. How many more or less speak English than French?

 2. What % people speak all the three languages?

 3. What % people speak German but not English?

{In another set cricket, hockey and tennis are changed with the name of some computer languages, such as Java, Cobol, Fortran (may be some other name)}

16. Select the odd one out
    a. Oracle   *b. Linux*   c. Ingress
d. DB2

17. Select the odd one out
    a. SMTP   b. WAP   *c. SAP*   d.
ARP

18. Select the odd man out.
    a. Java   b. Lisp   c. Smalltalk
d. Eiffel

19. Which of the following are orthogonal pairs?

        a. 3i+2j   b. i+j   c. 2i-3j
d. -7i+j

20. Number of faces, vertices and edges of a cube
        a. 12,8,6   b. 4,6,8   *c. 6,8,12*
d. 6,12,8

21. Given a Bar Chart showing the sales of a company. (In Figure) The sales in years as shown in the figure are (in crores) 1998-1999 - 130, 1997-1998 - 90, 1996-1997 - 90, 1995-1996 - 70

   1. The highest growth rate was for the year
        Ans. 1998-1999

   2. The net increase in sales of the company in the year span of 1995-1999
        Ans. 60 crores.

   3. The lowest growth rate was for the year
        Ans. 1997

22. Find the value of the decimal number to the base 7.
        Ans. 1436.

23. Complete the series:5,6,7,8,10,11,14,__.
        Ans. 15

24. If the vertex (5,7) is placed in the memory. First vertex (1,1) 's address is 1245 and then address of (5,7) is ----------
        Ans.

25. In which of the system, decimal number 384 is equal to 1234?
        Ans.

26. A man, a woman, and a child can do a piece of work in 6 days. Man only can do it in 24 days. Woman can do it in 16 days and in how many days child can do the same work?
        Ans.

27. In Madras, temperature at noon varies according to $-t^2/2 + 8t + 3$, where t is elapsed time. Find how much temperature more or less in 4pm to 9pm.
        Ans.

28. The size of the bucket is N kb. The bucket fills at the rate of 0.1 kb per millisecond. A programmer sends a program to receiver. There it waits for 10 milliseconds. And response will be back to programmer in 20 milliseconds. How much time the program takes to get a response back to the programmer, after it is sent?
        Ans.

29. The size of a program is N. And the memory occupied by the program is given by M = square root of 100N. If the size of the program is increased by 1% then how much memory now occupied ?

     Ans.

30. A power unit is there by the bank of the river of 750 meters width. A cable is made from power unit to power a plant opposite to that of the river and 1500mts away from the power unit. The cost of the cable below water is Rs. 15/- per meter and cost of cable on the bank is Rs.12/- per meter. Find the total of laying the cable.

     Ans. Rs. 22,500 (hint: the plant is on the other side of the plant i.e. it is not on the same side as the river)

{There are two questions, both showing a curve. In the first one, you have to identify the curve. In the second one you have to Write the equation of the curve. In }

SECTION II

1. If A can copy 50 pages in 10 hours and A and B together can copy 70 pages in 10 hours, how much time does B takes to copy 26 pages?

    a.   b.   c.   d.

2. Match the following:
    1. Male - Boy   ---> a.   A type of
    2. Square - Polygon   ---> b.   A part of
    3. Roof - Building   ---> c.   Not a type of
    4. Mushroom - Vegetables ---> d.   A superset of
       Ans: 1- d, 2- a, 3- b, 4- c

3. Match the following.
    1. brother – sister   ---> a. Part of
    2. Alsatian – dog   ---> b. Sibling
    3. sentence – paragraph ---> c. Type of
    4. car - steering   ---> d. Not a type of
      Ans. 1-b, 2-c, 3-a, 4-d

Questions 20- 24 are based on the following passage:
      The office staff of the XYZ corporation presently consists of three bookkeepers (A, B and C) and five secretaries (D, E, F, G and H). Management is planning to open a new office in another city using three secretaries and two bookkeepers of the current staff. To do so they plan to separate certain individuals who do not function well together. The following guidelines were established to set up the new office:
      I. Bookkeepers A and C are constantly finding fault with one another and should not be sent as a team to the new office.
      II. C and E function well alone but not as a team. They should be separated.
      III. D and G have not been on speaking terms for many months. They should

not go together.

   IV. Since D and F have been competing for promotion, they should not be a team.

    Ans.

4. If A is to be moved as one of the bookkeepers, which of the following cannot be a possible working team?

  (a) ABDEH *(b) ABDGH* (c) ABEFH (d) ABEGH (e) ABFGH

5. If C and F are moved to the new office, how many combinations are possible?

  (a) 1   (b) 2   (c) 3   (d) 4   (e) 5

6. If C is sent to the new office, which member of the staff cannot go with C?

  (a) B   *(b) D*   (c) F   (d) G   (e) H

7. Under the guidelines developed, which of the following must go to the new office?

  (a) B   (b) D   (c) E   (d) G   (e) H

8. If D goes to the new office which of the following is (are) true?

     I. C cannot go.
     II. A cannot go.
     III. H must also go.

  a. I only. b. II only. c. I and II only. *d. I and III only.* e. I, II and III.

9. Two stations A & B are 110 km apart. One train starts from A at 7 am, and travels towards B at 20kmph. Another train starts from B at 8 am and travels towards A at 25kmph. At what time will they meet?

  a. 9 am *b. 10 am* c. 11 am d. 10.30 am

10. If a man can swim downstream at 6kmph and upstream at 2kmph, his speed in still water is:

  a. 4kmph b. 2kmph c. 3kmph d. 2.5kmph

Answer the following three questions based on the paragraph:

A student applying at a college should take three courses. There are altogether four courses, namely, Science, Maths, Social Sudies and Economics. (The names may vary, but the pattern is the same)

One can take a Science course onty if he has taken a Maths course.

One can take a Maths course only if he has taken a Science course.

One can take a n Economics course only if he has taken a Social Studies course.

11. Which of the following is a possible course?

a. Two Science courses and a Social Studies Course.
b. Two Maths courses and an Economics course.
c. One Mats course, one Science course and a Social Studies course.
d. One Maths course, one Science course and an Economics course.

12. Which of the following courses a student can take?
      I. One Science, one Social Studies, one Economics
     II. Two Science, one Social Studies
     III. Two Science, one Maths.
    a. I only   *b. III only*   c. I and II only
d. II and III only

13. Which of the following is not a possible course?
    a. Two Science courses and a Maths course.   b. Two Maths
course and a Science course.
    c. One Maths course, one Science course and a Social Studies Course.
    d. One Maths course, one Science course and an Economics course.

SECTION III

1. There are 9 people I, J, K, L, M, N, O, P and Q living in a five storied building. The top floor has only one room and all other floors have two rooms. No rooms are vacant. No rooms carry two people.
    { There are some conditions like the following }
     K and N live on the same floor.
    L is living in a floor lower than I.
    Q is living in an upper floor than N.
    O lives in the third floor.
{ Four questions are asked based on this paragraph regarding the floor a specific person lives on; some conditions given and to state which one is valid; some condition, based on which to state in which floor a specific person lives etc. }

Interview:

The test is followed by a **Technical** and a **HR** interview. The technical interview is highly specialized and covers almost all subjects you have done in your curriculum. However one is required to name his/her favorite subject on which most of the interview is focused. For Computer Engineers C, Operating Systems, DBMS, Microprocessors are mostly focused upon. Electronics Engineers can be grilled on DCLD, Microprocessors and Communications.
    The HR interview which follows the technical interview is very general. The HR interview is also important. Mostly questions are asked to test your temperament. You maybe asked your opinion on a variety of current affair topics. We were asked about Homosexuality, Lesbianism (the movie FIRE), Kashmir, Genome Project etc. In some

cases questions regarding the company are asked. Sometimes you would be interviewed by a **panel** and both the technical and HR interviews will be covered in one session.

WILCO S/W

The written test is of two parts:

Section A : Aptitude Test
Section B : C Test

The **aptitude** was a mixture of verbal, analytical and quantitative questions. It is based on a pattern similar to the GRE tests and questions found in R.S Agarwal

The **c section** tests your knowlege in pointers and basic C concepts.

APTITUDE SECTION

Q1. Mr. Shah decided to walk down the escalator of a tube station. He found that if he walks down 26 steps, he requires 30 seconds to reach the bottom. However, if he steps down 34 stairs he would only require 18 seconds to get to the bottom. If the time is measured from the moment the top step begins to descend to the time he steps off the last step at the bottom, find out the height of the stair way in steps?

Ans.46 steps.

Q2. The average age of 10 members of a committee is the same as it was 4 years ago, because an old member has been replaced by a young member. Find how much younger is the new member ?

Ans.40 years.

Q3. Three containers A, B and C have volumes a, b, and c respectively; and container A is full of water while the other two are empty. If from container A water is poured into container B which becomes 1/3 full, and into container C which becomes 1/2 full, how much water is left in container A?

Q4. ABCE is an isosceles trapezoid and ACDE is a rectangle. AB = 10 and EC = 20. What is the length of AE?

Ans. AE = 10.

Q5. In the given figure, PA and PB are tangents to the circle at A and B respectively and the chord BC is parallel to tangent PA. If AC = 6 cm, and length of the tangent AP is 9 cm, then what is the length of the chord BC?

Ans. BC = 4 cm.

Q6. Three cards are drawn at random from an ordinary pack of cards. Find the probability that they will consist of a king, a queen and an ace.

Ans. 64/2210.

Q7. A number of cats got together and decided to kill between them 999919 mice. Every cat killed an equal number of mice. Each cat killed more mice than there were cats. How many cats do you think there were ?

Ans. 991.

Q8. If Log2 x - 5 Log x + 6 = 0, then what would the value / values of x be?

Ans. x = e2 or e3.

Q9. The square of a two digit number is divided by half the number. After 36 is added to the quotient, this sum is then divided by 2. The digits of the resulting number are the same as those in the original number, but they are in reverse order. The ten's place of the original number is equal to twice the difference between its digits. What is the number?

Ans. 46

Q10. Can you tender a one rupee note in such a manner that there shall be
       total 50 coins but none of them would be 2 paise coins.?

Ans. 45 one paisa coins, 2 five paise coins, 2 ten paise coins, and 1 twenty-five paise
coins.

Q11. A monkey starts climbing up a tree 20ft. tall. Each hour, it hops 3ft.
       and slips back 2ft. How much time would it take the monkey to reach the
       top?

Ans.18 hours.

Q12. What is the missing number in this series?
       8 2 14 6 11 ? 14 6 18 12

Ans. 9

Q13. A certain type of mixture is prepared by mixing brand A at Rs.9 a kg.
       with brand B at Rs.4 a kg. If the mixture is worth Rs.7 a kg., how many
       kgs. of brand A are needed to make 40kgs. of the mixture?

Ans. Brand A needed is 24kgs.

Q14. A wizard named Nepo says "I am only three times my son's age. My father
        is 40 years more than twice my age. Together the three of us are a mere 1240
        years old." How old is Nepo?

Ans. 360 years old.

Q15. One dog tells the other that there are two dogs in front of me. The
       other one also shouts that he too had two behind him. How many are they?

Ans. Three.

Q16. A man ate 100 bananas in five days, each day eating 6 more than the
       previous day. How many bananas did he eat on the first day?

Ans. Eight.

Q17. If it takes five minutes to boil one egg, how long will it take to boil
      four eggs?

Ans. Five minutes.

Q18. The minute hand of a clock overtakes the hour hand at intervals of 64
       minutes of correct time. How much a day does the clock gain or lose?

Ans.32 8/11 minutes.

Q19. Solve for x and y:
       $1/x - 1/y = 1/3$, $1/x^2 + 1/y^2 = 5/9$.

Ans. x = 3/2 or -3 and y = 3 or -3/2.

Q20. Daal is now being sold at Rs. 20 a kg. During last month its rate was
      Rs. 16 per kg. By how much percent should a family reduce its consumption so
      as to keep the expenditure fixed?

Ans. 20 %.

Q21. Find the least value of $3x + 4y$ if $x^2y^3 = 6$.

Ans. 10.

Q23. Can you find out what day of the week was January 12, 1979?

Ans. Friday.

Q24. A garrison of 3300 men has provisions for 32 days, when given at a rate
of 850 grams per head. At the end of 7 days a reinforcement arrives and it was
found that now the provisions will last 8 days less, when given at the rate
of 825 grams per head. How, many more men can it feed?

Ans. 1700 men.

Q25. From 5 different green balls, four different blue balls and three
different red balls, how many combinations of balls can be chosen taking at least
one green and one blue ball?

Ans. 3720.

Q26. Three pipes, A, B, & C are attached to a tank. A & B can fill it in 20
& 30 minutes respectively while C can empty it in 15 minutes. If A, B & C
are kept open successively for 1 minute each, how soon will the tank be filled?

Ans. 167 minutes.

Q27. A person walking 5/6 of his usual rate is 40 minutes late. What is his
usual time?

Ans. 3 hours 20 minutes.

TECHNICAL SECTION

Q1. typedef struct{
          char *;
          nodeptr next;
          } * nodeptr ;

What does nodeptr stand for?

Q2.   What does. int *x[](); means ?

Q3.   struct list{
              int x;
              struct list *next;
              }*head;
       the struct head.x =100
       Is the above assignment to pointer is correct or wrong ?

Ans. Wrong

Q4.What is the output of the following ?
     int i;
     i=1;
     i=i+2*i++;
     printf(%d,i);

Ans. 4

Q5.   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.

What are the output(s) for the following ?

Q6.   #include<malloc.h>
     char *f()
     {char *s=malloc(8);
     strcpy(s,"goodbye")}
     main()
             {
                char *f();

```c
    printf("%c",*f()='A');
}
```

Q7.   #define MAN(x,y) (x)>(y)?(x):(y)
```c
{
    inti=10;j=5;k=0;
    k= MAX(i++,++j)
    printf(%d %d %d %d,i,j,k)
}
```

Ans. 10 5 0

Q8.   a=10;b= 5;c=3;d=3;
```c
if(a<b)&&(c=d++)
printf(%d %d %d %d a,b,c,d)
else printf("%d %d %d %d a,b,c,d);
```

Q9.   #include<stdarg.h>
```c
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);
}
```

```
Q10.    main()
        {
          printf("hello");
          fork();
        }
```

```
Q11.    main()
        {
          int i = 10;
          printf(" %d %d %d \n", ++i, i++, ++i);
        }
```

```
Q12.    #include<stdio.h>
        main()
        {
          int *p, *c, i;
          i = 5;
          p = (int*) (malloc(sizeof(i)));
          printf("\n%d",*p);
          *p = 10;
          printf("\n%d %d",i,*p);
          c = (int*) calloc(2);
          printf("\n%d\n",*c);
        }
```

```
Q13.    #define MAX(x,y) (x) >(y)?(x):(y)
        main()
        {
          inti=10,j=5,k=0;
          k= MAX(i++,++j);
          printf("%d..%d..%d",i,j,k);
        }
```

```
Q14.    #include <stdio.h>
        main()
        {
          enum _tag{ left=10, right, front=100, back};
          printf("left is %d, right is %d, front is %d, back is
```

```
%d",left,right,front,back);
            }
```

Q15.   main()
          {
             inta=10,b=20;
                a>=5?b=100:b=200;
             printf("%d\n",b);
          }

Q16.   #define PRINT(int) printf("int = %d ",int)
        main()
          {< BR>   intx,y,z;
              x=03;y=02;z=01;
             PRINT(x^x);
             z<<=3;PRINT(x);
             y>>=3;PRINT(y);
          }

Q17.   #include<stdio.h>
        main()
          {
             char s[] = "Bouquets and Brickbats";
             printf("\n%c, ",*(&s[2]));
             printf("%s, ",s+5);
             printf("\n%s",s);
             printf("\n%c",*(s+2));
          }

Q18.   main()
          {
             struct s1
                {
                  char *str;
                   struct s1 *ptr;
                };
          static struct s1 arr[] = { {"Hyderabad",arr+1},
          {"Bangalore",arr+2},
          {"Delhi",arr}
          };
```

```
      struct s1 *p[3];
      int i; < BR>        for(i=0;i<=2;i++)
      p[i] = arr[i].ptr;

      printf("%s\n",(*p)->str);
      printf("%s\n",(++*p)->str);
      printf("%s\n",((*p)++)->str);
      }
```

Q19. .main()
       {
         char *p = "hello world!";
         p[0] = 'H';
         printf("%s",p);
       }

WIPRO TECHNO;OGIES

Written Test:
        The Wipro test consists of 75 questions. It is a multiple choice test with **no negative marking.** The paper emphasizes on your basic 11th and 12th standard physics, chemistry, maths with about 40-45 questions on these three subjects. There are about 10-15 data sufficiency and aptitude questions and about 15-20 technical questions on your respective branch of engineering. A separate paper is held for the various branches of engineering. The PCM and aptitude based questions are the same for everyone and different engineering branches have their own set of questions. Everyone though has an option of writing a hardware or software paper.

TEST1

1. An electron moving in an electromagnetic field moves in a

(a) In a straight path
(b) Along the same plane in the direction of its propagation
(c) Opposite to the original direction of propagation
(d) In a sine wave

Ans. (b)

2. The total work done on the particle is equal to the change in its kinetic energy

(a) Always
(b) Only if the forces acting on the body are conservative.

(c) Only if the forces acting on the body are gravitational.
(d) Only if the forces acting on the body are elastic.

Ans. (a)

3. The following unit measure energy:

(a) Kilo-watt hour.
(b) Volt*volt/sec*ohm.
(c) Pascal*foot*foot
(d) (Coulomb*coulomb)*farad

Ans. (a)

4. Astronauts in stable orbits around the earth are in a state of weightlessness because

(a) There is no gravitational force acting on them.
(b) The satellite and the air inside it have an acceleration equal to that of gravitational acceleration there.
(c) The gravitational force of the earth and the sun balance giving null resultant.
(d) There is no atmosphere at the height at which the satellites move.

Ans. (b)

5. An organ pipe, open at both ends and another organ pipe closed at one end, will resonate with each other, if their lengths are in the ratio of

(a) 1:1
(b) 1:4
(c) 2:1
(d) 1:2

Ans. (c)

6. During an isothermal expansion of an ideal gas

(a) Its internal energy increases.
(b) Its internal energy decreases.
(c) Its internal energy does not change.
(d) The work done by the gas is not equal to the quantity of heat absorbed by it.

Ans. (c)

7. A parallel plate capaciator is charged and the charging battery is then disconnected.
   If the plates of the capacitor are moved further apart by means of insulating handles

(a) The charge on the capacitor increases.
(b) The voltage across the plates increases.
(c) The capacitance increases.
(d) The electrostatic energy stored in the capacitor decreases.

Ans. (b)

8. Two equal negative charges q are fixed at point (0,a) and (0,-a) on the y-axis.
   A positive charge Q is released from rest at the point (2a,0) on the x-axis. The charge Q will

(a) Execute simple harmonic motion about the origin
(b) Move to the origin and remain at rest
(c) Move to infinity
(d) Execute oscillatory but not simple harmonic motion

Ans. (d)

9. A square conducting loop of length Lon a side carries a current I.
   The magnetic field at the centre of the loop is

(a) Independant of L
(b) Proportional to L*L
(c) Inversely proportoinal to L
(d) Directly proportional to L

Ans. (c)

10. The focal length of a convex lens when placed in air and then in water will

(a) Increase in water with respect to air
(b) Increase in air with respect to water
(c) Decrease in water with respect to. air
(d) Remain the same

Ans. (a)

11. The maximum kinectic energy of the photoelectron emitted from the surface is dependant on

(a) The intensity of incident radiation
(b) The potential of the collector electrode
(c) The frequency of incident radiation
(d) The angle of incidence of radiation of the surface

Ans. (c)

12. An electron orbiting in a circular orbit around the nucleus of the atom

(a) Has a magnetic dipole moment
(b) Exerts an electric force on the nucleus equal to that on it by the nucleus
(c) Does not produce a magnetic induction at the nucleus
(d) All of the above

Ans. (d)

13. The X-rays beam coming from an X-ray tube will be:

(a) Monochromatic
(b) Having all wavelengths smaller than a certain minimum wavelength
(c) Having all wavelengths larger than a certain minimum wavelength
(d) Having all wavelengths lying between a minimum and a maximum wavelength

Ans. (c)

14. The mass number of a nucleus is

(a) Always less than its atomic number
(b) Always more than its atomic number
(c) Always equal to its atomic number
(d) Sometimes more and sometimes equal to its atomic number

Ans. (d)

15. Two successive elements belonging to the first transition series have the same number of electrons partially filling orbitals. They are

(a) V and Cr
(b) Ti and V
(c) Mn and Cr
(d) Fe and Co

Ans. (c)

16. When $n+l$ has the same value for two or more orbitals,the new electron enters the orbital where

(a) n is maximum
(b) n is minimum
(c) l is maximum
(d) l is minimum

Ans. (b)

17. A balloon filled with ethylene is pricked with a sharp pointed needle and quickly placed in a tank
     full of hydrogen at the same pressure. After a while the balloon would have

(a) Shrunk
(b) Enlarged
(c) Completely collapsed
(d) Remain unchanged in size

Ans. (b)

18. Which of the following statements is not true?

(a) The ratio of the mean speed to the rms speed is independant of temperature
(b) Tthe square of the mean speed of the molecules is equal to the mean squared speed at a certain temperature
(c) Mean kinetic energy of the gas molecules at any given temperature is independant of the mean speed
(d) None

Ans. (b)

19. Which of the following statements represent Raoult's Law

(a) Mole fraction of solvent = ratio of vapour pressure of the solution to vapour pressure of the solvent
(b) Mole fraction of solute = ratio of vapour pressure of the solution to vapour pressure of the solvent
(c) Mole fraction of solute = lowering of vapour pressure of the solution
(d) Mole fraction of solvent = lowering of vapour pressure of the solution

Ans. (a)

20. Elements having the same atomic number and the same atomic mass are known as

(a) Isotopes
(b) Isotones
(c) Isomers
(d) None of the above

21.Which is the most acidic amongst

(a) Nitrophenol
(b) O-toulene
(c) Phenol
(d) Cresol

22. Pure water does not conduct electricity because it is

(a) Almost not ionised
(b) Low boiling
(c) Neutral
(d) Readily decomposed

Ans. (a)

23. In a salt bridge, KCl is used because

(a) It is an electrolyte
(b) The transference number of K+ and Cl⁻ is nearly the same
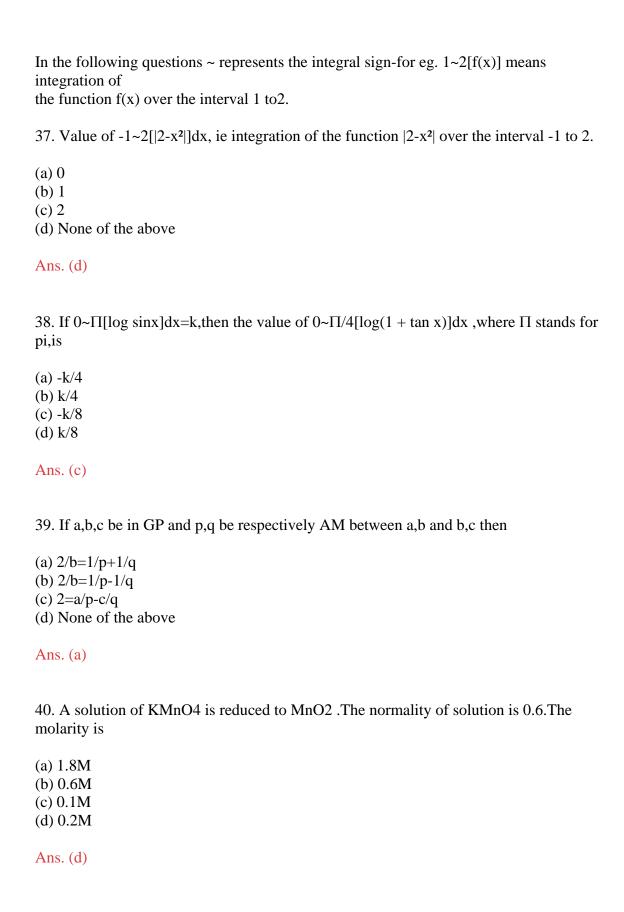(c) It is a good conductor of electricity
(d) All of the above

Ans. (d)

24. A depolarizer used in the dry cell batteries is

(a) KCl
(b) MnO2
(c) KOH
(d) None of the above

Ans. (b)

25. The hydrolysis of alkyl halides by aqueous NaOH is best termed as

(a) Electrophylic substitution reaction
(b) Electrophylic addition reaction
(c) Nnucleophylic addition reaction
(d) Nucleophylic substitution reaction

Ans. (d)

26. The hydrocarbon that gives a red precipitate with ammoniacal cuprous chloride is
(where '≡' means a triple bond)

(a) CH3-CH2-CH2-CH3
(b) CH3-C≡C-CH3
(c)CH2=CH-CH=CH2
(d) CH3-CH2-C≡CH

Ans. (d)

27. Which of the following reagents is neither neutral nor basic

(a) Lucas' reagent
(b) Tollen's reagent
(c) Bayer's reagent
(d) Fehling's solution

Ans. (a)

28. The substance which is most easily nitrated

(a) Toluene
(b) Bbenzene

(c) Nitrobenzene
(d) Chlorobenzene

Ans. (a)

29. Carbylamine reaction is a test for

(a) Primary amine
(b) Secondary amine
(c) Tertiary amine
(d) Quarternary ammonium salt

Ans. (a)

30. Which of the following oxides cannot be reduced by carbon to obtain metal

(a) ZnO
(b) Al2O3
(c) Fe2O3
(d) PbO

Ans. (b)

31. Which of the following is not an oxide ore?

(a) Cassiterite
(b) Siderite
(c) Pyrolusite
(d) Bauxite

Ans. (b)

32. Which among the following is called philosopher's wool

(a) Cellulose
(b) Calamine
(c) Stellite
(d) Cerussite

Ans. (c)

33. Out of 10 white, 9 black and 7 red balls, in how many ways can we select one or more balls

(a) 234
(b) 52
(c) 630
(d) 879

Ans. (d)

34. A and B throw a dice. The probabilty that A's throw is not greater than B's is

(a) 5/12
(b) 7/12
(c) 11/12
(d) 5/36

Ans. (b)

35. Given two numbers a and b. Let A denote the single AM between these and S denote the sum of n AMs
    between them. Then S/A depends upon

(a) n
(b) n,a
(c) n,b
(d) n,a,b

Ans. (a)

36. If the sum of the roots of the equation $ax^2+bx+c=0$ is equal to the sum of the squares of their reciprocals,
    then, a/c, b/a, c/b are in

(a) AP
(b) GP
(c) HP
(d) None of the these

Ans. (c)

In the following questions ~ represents the integral sign-for eg. 1~2[f(x)] means integration of
the function f(x) over the interval 1 to2.

37. Value of -1~2[|2-x²|]dx, ie integration of the function |2-x²| over the interval -1 to 2.

(a) 0
(b) 1
(c) 2
(d) None of the above

Ans. (d)

38. If 0~Π[log sinx]dx=k,then the value of 0~Π/4[log(1 + tan x)]dx ,where Π stands for pi,is

(a) -k/4
(b) k/4
(c) -k/8
(d) k/8

Ans. (c)

39. If a,b,c be in GP and p,q be respectively AM between a,b and b,c then

(a) 2/b=1/p+1/q
(b) 2/b=1/p-1/q
(c) 2=a/p-c/q
(d) None of the above

Ans. (a)

40. A solution of KMnO4 is reduced to MnO2 .The normality of solution is 0.6.The molarity is

(a) 1.8M
(b) 0.6M
(c) 0.1M
(d) 0.2M

Ans. (d)

The questions 41-46 are based on the following pattern.The problems below contain a question
and two statements giving certain data. You have to decide whether the data given in the statements are sufficient for answering the questions.The correct answer is

(A) If statement (I) alone is sufficient but statement (II) alone is not sufficient.
(B) If statement(II) alone is sufficient but statement(I) alone is not sufficient.
(C) If both statements together are sufficient but neither of statements alone is sufficient.
(D) If both together are not sufficient.

41. What is John's age?

(I) In 15 years John will be twice as old as Dias would be
(II) Dias was born 5 years ago

Ans. (C)

42. What is the distance from city A to city C in kms?

(I) City A is 90 kms from City B
(II) City B is 30 kms from City C

Ans. (D)

43.Is A=C ? A,B,C are real numbers

(I) A-B=B-C
(II) A-2C = C-2B

Ans. (C)

44. What is the 30th term of a given sequence ?

(I) The first two terms of the sequence are 1,1/2
(II) The common difference is -1/2

Ans. (A)

45.Was Avinash early, on time or late for work?

(I) He thought his watch was 10 minutes fast
(II) Actually his watch was 5 minutes slow

Ans. (D)

46. What is the value of A if A is an integer?

(I) $A^4 = 1$
(II) $A^3 + 1 = 0$

Ans. (B)

47. A person travels 12 km in the southward direction and then travels 5km to the right and then travels 15km toward the right and finally travels 5km towards the east, how far is he from his starting place?

(a) 5.5 kms
(b) 3 km
(c) 13 km
(d) 6.4 km

Ans. (b)

48. X's father's wife's father's granddaughter uncle will be related to X as

(a) Son
(b) Nephew
(c) Uncle
(d) Grandfather

Ans. (c)

49. Find the next number in the series **1, 3 ,7 ,13 ,21 ,31**

(a) 43
(b) 33
(c) 41
(d) 45

50. If in a certain code "RANGE" is coded as 12345 and "RANDOM" is coded as 123678.

   Then the code for the word "MANGO" would be

(a) 82357
(b) 89343
(c) 84629
(d) 82347

Ans. (d)

51. If "PROMPT" is coded as QSPLOS ,then "PLAYER" should be

(a) QMBZFS
(b) QWMFDW
(c) QUREXM
(d) URESTI

Ans. (a)

The questions 52-53 are based on the following data

6 people A,B,C,D,E and F sit around a table for dinner.Since A does not like C, he doesn't sit either opposite or beside C.B and F always like to sit opposite each other.

52. If A is beside F then who is are the two neighbours of B?

(a) D and C
(b) E and C
(c) D and E
(d) Either (a) or (b)

Ans. (c)

53. If D is adjacent to F then who is adjacent to C?

(a) E and B
(b) D and A

(c) D and B

(d) either (a) or (c)

Ans.(d)

54. Complete the sequence **A, E ,I ,M ,Q ,U , _ , _**

(a) B, F

(b) Y, C

(c) G, I

(d) K, O

Ans.(b)

55. A person travels 6km towards west, then travels 5km towards north ,then finally travels

6km towards west. Where is he with respect to his starting position?

(a) 13km east

(b) 13km northeast

(c) 13km northwest

(d) 13km west

Ans. (c)

56. If A speaks the truth 80% of the times, B speaks the truth 60% of the times. What is the probability that they tell the truth at the same time

(a) 0.8

(b) 0.48

(c) 0.6

(d) 0.14

Ans.(b)

57. If the time quantum is too large, Round Robin scheduling degenerates to

(a) Shortest Job First Scheduling

(b) Multilevel Queue Scheduling

(c) FCFS

(d) None of the above

58. Transponders are used for which of the following purposes

(a) Uplinking
(b) Downlinking
(c) Both (a) and (b)
(d) None of the above

Ans. (c)

59. The format specifier "-%d" is used for which purpose in C

(a) Left justifying a string
(b) Right justifying a string
(c) Removing a string from the console
(d) Used for the scope specification of a char[] variable

Ans. (a)

60. Virtual functions allow you to

(a) Create an array of type pointer-to-base-class that can hold pointers to derived classes
(b) Create functions that have no body
(c) Group objects of different classes so they can all be accessed by the same function code
(d) Use the same function call to execute member functions to objects from different classes

62. A sorting algorithm which can prove to be a best time algorithm in one case
    and a worst time algorithm in worst case is

(a) Quick Sort
(b) Heap Sort
(c) Merge Sort
(d) Insert Sort

Ans. (a)

63. What details should never be found in the top level of a top-down design?

(a) Details
(b) Coding
(c) Decisions
(d) None of the above

Ans. (c)

64. In an absolute loading scheme, which loader function is accomplished by assembler

(a) Reallocation
(b) Allocation
(c) Linking
(d) Both (a) and (b)

Ans. (d)

65. Banker's algorithm for resource allocation deals with

(a) Deadlock prevention
(b) Deadlock avoidance
(c) Deadlock recovery
(d) None of these

Ans. (b)

66. Thrashing can be avoided if

(a) The pages, belonging to the working set of the programs, are in main memory
(b) The speed of CPU is increased
(c) The speed of I/O processor are increased
(d) All of the above

Ans. (a)

67. Which of the following communications lines is best suited to interactive processing applications?

(a) Narrowband channels
(b) Simplex channels
(c) Full-duplex channels
(d) Mixedband channels

68. A feasibility document should contain all of the following except

(a) Project name
(b) Problem descriptions
(c) Feasible alternative
(d) Data flow diagrams

69. What is the main function of a data link content monitor?

(a) To detect problems in protocols
(b) To determine the type of transmission used in a data link
(c) To determine the type of switching used in a data link
(d) To determine the flow of data

70. Which of the following is a broadband communications channel?

(a) Coaxial cable
(b) Fiber optic cable
(c) Microwave circuits
(d) All of the above

71. Which of the following memories has the shortest access time?

(a) Cache memory
(b) Magnetic bubble memory
(c) Magnetic core memory
(d) RAM

72. A shift register can be used for

(a) Parallel to serial conversion
(b) Serial to parallel conversion
(c) Digital delay line
(d) All the above

Ans. (d)

73. In which of the following page replacement policies, Balady's anomaly occurs?

(a) FIFO
(b) LRU
(c) LFU
(d) NRU

Ans. (a)

74. Subschema can be used to

(a) Create very different, personalised views of the same data
(b) Present information in different formats
(c) Hide sensitive information by omitting fields from the sub-schema's description
(d) All of the above

Ans. (d)

75. Question on l-values in automata

TEST2

1.When a bicycle is in motion,the force of friction exerted by the ground on the two wheels is such that it acts

(a) In the backward direction on the front wheel and in the forward direction on the rear wheel.
(b) In the forward direction on the front wheel and in the backward direction on the rear wheel.
(c) In the backward direction on both the front and rear wheels.
(d) In the backward direction on both the front and rear wheels.

Ans. (d)

2. A certain radioactive element A, has a half life = t seconds.

   In (t/2) seconds the fraction of the initial quantity of the element so far decayed is nearly

(a) 29%
(b) 15%
(c) 10%
(d) 45%

Ans. (a)

3. Which of the following plots would be a straight line ?

(a) Logarithm of decay rate against logarithm of time
(b) Logarithm of decay rate against logarithm of number of decaying nuclei
(c) Decay rate against time
(d) Number of decaying nuclei against time

Ans. (b)

4. A radioactive element x has an atomic number of 100.

   It decays directly into an element y which decays directly into element z.
   In both processes a charged particle is emitted.
   Which of the following statements would be true?

(a) y has an atomic number of 102
(b) y has an atomic number of 101
(c) z has an atomic number of 100
(d) z has an atomic number of 101

Ans. (b)

5. If the sum of the roots of the equation $ax^2 + bx + c=0$ is equal to the sum of the squares of their reciprocals

   then a/c, b/a, c/b are in

(a) AP
(b) GP
(c) HP
(d) None of these

Ans. (c)

6. A man speaks the truth 3 out of 4 times.
   He throws a die and reports it to be a 6.
   What is the probability of it being a 6?

(a) 3/8
(b) 5/8
(c) 3/4
(d) None of the above

Ans. (a)

7. If $\cos^2 A + \cos^2 B + \cos^2 C = 1$ then ABC is a

(a) Right angle triangle
(b) Equilateral triangle
(c) All the angles are acute
(d) None of these

Ans. (a)

8. Image of point (3,8) in the line $x + 3y = 7$ is

(a) (-1,-4)
(b) (-1,4)
(c) (2,-4)
(d) (-2,-4)

Ans. (a)

9. The mass number of a nucleus is

(a) Always less than its atomic number
(b) Always more than its atomic number
(c) Sometimes more than and sometimes equal to its atomic number
(d) None of the above

Ans. (c)

10. The maximum KE of the photoelectron emitted from a surface is dependent on

(a) The intensity of incident radiation
(b) The potential of the collector electrode
(c) The frequency of incident radiation
(d) The angle of incidence of radiation of the surface

Ans. (c)

11. Which of the following is not an essential condition for interference

(a) The two interfering waves must be propagated in almost the same direction or the two interfering waves must intersect at a very small angle
(b) The waves must have the same time period and wavelength
(c) Amplitude of the two waves should be the same
(d) The interfering beams of light must originate from the same source

Ans. (c)

12. When X-Ray photons collide with electrons

(a) They slow down
(b) Their mass increases
(c) Their wave length increases
(d) Their energy decreases

Ans. (c)

13. An electron emits energy

(a) Because its in orbit
(b) When it jumps from one energy level to another
(c) Electrons are attracted towards the nucleus
(d) The electrostatic force is insufficient to hold the electrons in orbits

Ans. (b)

14. How many bonds are present in CO_2 molecule?

(a) 1
(b) 2
(c) 0
(d) 4

15. In a balanced chemical equation

(a) Atoms are conserved
(b) Molecules are conserved
(c) Moles are conserved
(d) Reactant and product molecules are preserved

16. How many grams of NaOH will react with 0.2 equivalent of HCl?

(a) 0.59
(b) 0.285
(c) 1.18
(d) none of these

17. Which of the following is least acidic

(a) Ortho-cresol
(b) Para-cresol
(c) Phenol
(d) Meta-cresol

18. In Reimer-Tiemann's reaction, the reaction intermediate is

(a) Carbene
(b) Dichloro carbene
(c) Carbonion
(d) Carbonium ion

19. Which of the following is most acidic?

(a) C_2H_5OH
(b) $CH_3CHOHCH_3$
(c) Ethanol
(d) CH_3OH

Ans. (b)

20.A catalyst

(a)always slows down the reaction
(b)always starts a rection that would not have ocurred at all otherwise
(c)causes changes in the rate of the reaction
(d)changes the quantities of the products formed

Ans. (c)

21.The rate of the first order reaction depends on the

(a) Concentration of the reactant
(b) Concentration of the product
(c) Time
(d) Temperature

Ans. (d)

22. The most abundant element in the universe is

(a) Hydrogen
(b) Helium
(c) Oxygen
(d) Silicon

Ans. (a)

23. Integrate $3x + 5 / (x^3-x^2-x+1)$

(a) $1/2 \log | (x+1)/(x-1) | - 4/(x-1)$
(b) $\log |2+tanx|$
(c) $-(1+logx)/x$
(d) $2 \log|(tanx)/(tanx+2)$

Ans. A

24. If $y = \cos^{-1}(\cos x + 4\sin x)/(17)^{1/2}$, then dy/dx is

(a) 0
(b) 1
(c) -1
(d) none of these

Ans. (b)

25. If the sum of n terms of two series of A.P are in the ratio 5n+4:9n+6 .find the ratio of their 13th terms

(a) 129/231
(b) 1/2
(c) 23/15
(d) None of the above

Ans. (a)

26. If the letters of the word "rachit" are arranged in all possible ways and these words are written
    out as in a dictionary, what is the rank of the word "rachit".

(a) 485
(b) 480
(c) 478
(d) 481

Ans. (d)

27. Ravi's salary was reduced by 25%.Percentage increase to be effected to bring the salary
    to the original level is

(a) 20%
(b) 25%
(c) 33 1/3%
(d) 30%

Ans. (c)

28. A and B can finish a piece of work in 20 days .B and C in 30 days and C and A in 40 days.
    In how many days will A alone finish the job

(a) 48
(b) 34 2/7
(c) 44
(d) 45

Ans. (a)

29. How long will a train 100m long travelling at 72kmph take to overtake another train
    200m long travelling at 54kmph

(a) 70sec
(b) 1min
(c) 1 min 15 sec
(d) 55 sec

Ans. (b)

30. What is the product of the irrational roots of the equation (2x-1)(2x-3)(2x-5)(2x-7)=9?

(a) 3/2
(b) 4
(c) 3
(d) 3/4

Ans. (a)

31. Which of the following parameters is the same for molecules of all gases at a given temperature?

(a) Mass
(b) Momentum
(c) Speed
(d) Kinetic energy

Ans. (d)

32. A solid is completely immersed in liquid. The force exerted by the liquid on the solid will

(a) Increase if it is pushed deeper inside the liquid
(b) Change if its orientation is changed
(c) Decrease if it is taken partially out of the liquid
(d) None of the above

Ans. (c)

33. Select the correct statements

(a) A simple harmonic motion is necessarily periodic
(b) An oscillatory motion is necessarily periodic
(c) A periodic motion is necessarily oscillatory
(d) All of the above

Ans. (a)

34. An elecrton is injected into a region of uniform magnetic flux density with the components
    of velocity parallel to and normal to the flux.What is the path of the electron?

(a) Helix
(b) Parabola
(c) Circle
(d) Rectangle

Ans. (a)

35. A constant voltage is applied between the 2 ends of a uniform metallic wire.
    Some heat is developed in it. The heat developed is doubled if

(a) both the length and radius of the wire are halved.
(b) both the length and radius of the wire are doubled
(c) the radius of the wire is doubled
(d) the length of the wire is doubled

Ans. (b)

36. If Young's double slit experiment is performed in water

(a) the fringe width will decrease
(b) the fringe width will increase
(c) the fringe width remains unchanged
(d) there will be no fringe

Ans. (a)

37. The shape of a spot of light produced when bright sunshine passes perpendicular through a hole of very small size is

(a) Square, because the hole is a square
(b) Round, because it is an image of the sun
(c) Round with a small penumbra around it
(d) Square with a small penumbra

Ans. (b)

Select the alternative that logically follows from the two given statements.

38.

- Some forms are books
- All books are made of paper

(a) Some forms are made of paper
(b) Some forms are not made of paper
(c) No forms are made of paper
(d) None of the above

Ans. (a)

39.

- All toffees are chocolates
- Some toffees are not good for health

(a) Some chocolates are not good for health
(b) Some toffees are good for health
(c) No toffees are good for health
(d) Both (a) and (b)

Ans. (a)

The questions 40-46 are based on the following pattern.The problems below contain a question and two statements giving certain data. You have to decide whether the data given in the statements are sufficient for answering the questions.The correct answer is

(A) If statement (I) alone is sufficient but statement (II) alone is not sufficient.
(B) If statement(II) alone is sufficient but statement(I) alone is not sufficient.
(C) If both statements together are sufficient but neither of statements alone is sufficient.
(D) If both together are not sufficient.
(E) If statements (I) and (II) are not sufficient

40. What is the volume of a cubical box in cubic centimetres?

(I) One face of the box has an area of 49 sq.cms.
(II) The longest diagonal of the box is 20 cms.

Ans. D

41. Is z positive?

(I) y+z is positive
(II) y-z is positive

Ans. E

42. Is x>y ? x, y are real numbers?

(I) $8x = 6y$
(II) $x = y + 4$

Ans. B

43. If a ground is rectangular, what is its width?

(I) The ratio of its length to its breadth is 7:2
(II) Perimeter of the playground is 396 mts.

Ans. C

44. If the present age of my father is 39 yrs and my present age is x yrs, what is x?

(I) Next year my mother will be four times as old as i would be.
(II) My brother is 2 years older than I and my father is 4 years older than my mother.

Ans. C

45. How many brothers and sisters are there in the family of seven children?

(I) Each boy in the family has as many sisters as brothers
(II) Each of the girl in the family has twice as many brothers as sisters

Ans. D

46. x is not equal to 0, is x + y = 0?

(I) x is the reciprocal of y
(II) x is not equal to 1

Ans. A

Following questions are based on letter's analogy.First pair of letters should have the same relationship as the second pair of letters or vice versa.

47. **?** : BGLQ : : YDIN : VAFK

(a) EKNS
(b) DKMT
(c) DLMS
(d) EJOT

Ans. (d)

48. NLO : RPS : : **?** : ZXA

(a) VUW
(b) VTR
(c) VTW
(d) TRP

Ans. (c)

49. If "segment" is coded as rffndou, then "ritual" is coded as

(a) shutbm
(b) qjutbk
(c) qhutbk
(d) qhubtk

Ans. (c)

50. If "football" is "cricket" ,"cricket" is "basketball" ,"basketball" is "volleyball","volleyball" is "khokho" and "khokho" is cricket, which is not a ball game?

(a) cricket
(b) football
(c) khokho
(d) basketball

Ans. (a)

51. Which of the following is a recursive set of production

(a) S --> a|A, A --> S
(b) S --> a|A, A --> b
(c) S -->aA, A-->S
(d) None of these

Ans. (c)

TEST3

Q1. Two bodies changed from p_1v_1 to p_2v_2 state in two ways. The heat supplied is delta Q and work done is delta W
   Then what is constant in these two processes

(a) delta q
(b) delta w
(c) delta q + delta w
(d) delta q - delta w

Ans. (d)

Q2. _____ have same atomic number and same mass number are

(a) Isotopes
(b) Isotones
(c) Isomers
(d) Isobars

Ans. (c)

Q3. When a free electron is placed in a plane of electro magnetic then it moves in

(a) in the direction of the electric field
(b) in the direction of magnetic field
(c) of propagation of wave
(d) of the plane containing magnetic field and propagation direction.

Q4. Name the phenomena in which one proton is jumped from one isomer to another isomer to create two different elements

(a) functional isomerisim
(b) sterio merisim
(c) tauto merisim
(d) penta merisim

Ans. (c)

Q5. In the below compounds which one has 40% C ,6.7% H and 53.3 % O what is its empherical formula

(a) CHO
(b) CH_2
(c) $C_2H_2O_2$
(d) $C_2H_3O_2$

Ans: (b)

Q6. X rays are coming from X ray tube, the wavelength is _____ a certain wavelength/s

(a) below
(b) above
(c) inbetween
(d) out of

Ans. (c)

Q7. In a triode valve in order to increase the saturation current what has to be done

(a) increase plate voltage
(b) reduce distance between grid and plate
(c) increase cathode potential
(d) reduce grid potential

Ans. (d)

Q8. Seven different toys are distributed among 3 children how many different ways are possible?

(a) $^7C_3$
(b) $^7P_3$
(c) 3^7
(d) 7^3

Ans. (c)

Q9. A, B ans C are three speakers. They have to speak randomly along with another 5 speakers in a function.
    A has to speak before B and B has to speak before C. What is the probability.

Ans. 1/6

Q10. If $dy = (secx + ytanx)dx$, Then the curve is

(a) $x = ycosx$
(b) $x = ysinx$
(c) $x = ytanx$
(d) $x = ysecx$

Ans. (a)

Q11. Two series are 16,21,26.... and 17,21,25.....
    What is the sum of first hundred common numbers

(a) 101100
(b) 110100
(c) 101110
(d) 110101

Q12. There are two sections in a question paper each contain five questions. A students has to answer 6 questions.

Maximum no. of questions that can be answered from any section is 4. How many ways he can attempt the paper?

(a) 50
(b) 100
(c) 120
(d) 200

Q13. a and b are two numbers selected randomly from 1,2,3.... 25 what is the probability of a and b are not equal.

(a) 1/25
(b) 24/25
(c) 13/25
(d) 2/25

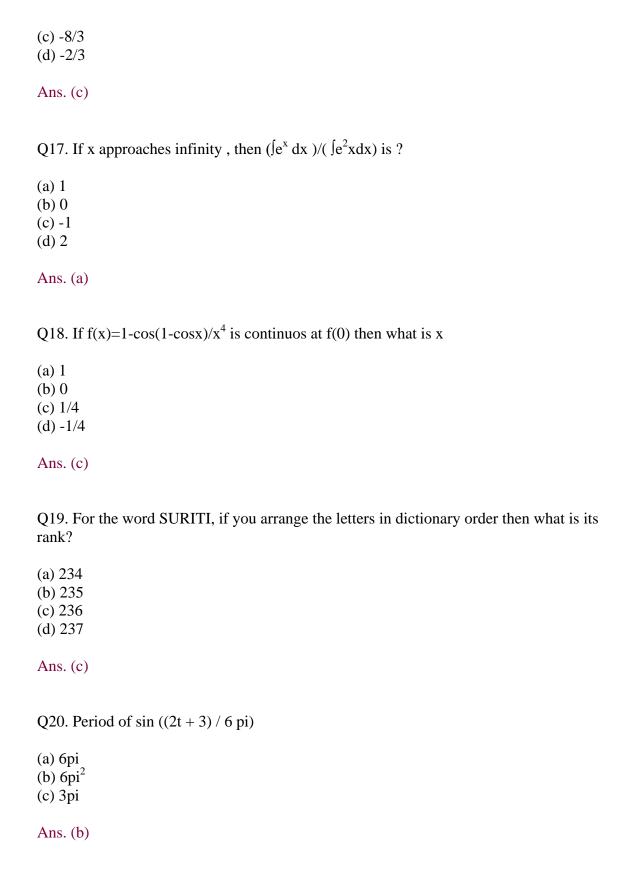Q14. The sum of the series $1 + 1(1+1/n) + 3(1+1/n)^2 + ...$ is equal to?

Q15. Two circles of different radii intersects each other what is the maximum no of intersections

(a) 0
(b) 1
(c) 2
(d) 3

Q16. If $x = \sin^{-1}(t)$, $y = \log(1-t^2)$, find d^2y/dx^2 when $t=1/2$

(a) 1
(b) 0

(c) -8/3
(d) -2/3

Ans. (c)

Q17. If x approaches infinity , then $(\int e^x \, dx)/(\int e^2 x \, dx)$ is ?

(a) 1
(b) 0
(c) -1
(d) 2

Ans. (a)

Q18. If $f(x)=1-\cos(1-\cos x)/x^4$ is continuos at f(0) then what is x

(a) 1
(b) 0
(c) 1/4
(d) -1/4

Ans. (c)

Q19. For the word SURITI, if you arrange the letters in dictionary order then what is its rank?

(a) 234
(b) 235
(c) 236
(d) 237

Ans. (c)

Q20. Period of sin ((2t + 3) / 6 pi)

(a) 6pi
(b) $6pi^2$
(c) 3pi

Ans. (b)

Q21 - Q23. Four questions given on the below data
X,Yand Z are senior engineers. A,B,C,D are junior engineers. Company wants to select 4 enginers. Two will be senior and two will be juniors. The company wants these engineers to work in the most productive way so they respect each person's likes/dislikes.

- Y is not friends with A
- Z is not friends with C
- B is not friends with A

1. If B is selected then who will be the remaining 4 members ?
2. If C is selected, Z and ___ cannot be selected?
3. D is always selected if ___ is selected?

Q24. A speaks truth 70% of the times, B speaks truth 80% of the times.
     What is the probability that both are contradicting each other is ?

Q25. $\int ((2x-3)/((x^2 +x+1)^2)dx$ is ?

Q26. Ram starts from A walking 2 km North and turns right and walks 4 km and turns right again and walks 4 km and turns   right again and walks 4 km and meets Radha at Bwalking in the opposite direction to Ram .
a) Which direction does Ram walk after the first turn?
b) Distance between A and B

Q27. If the equation x^2 - 3x + a = 0 has the roots (0,1) then value of a is ?

Q28. A and B's temperature are 10°c and 20°χ having same surface , then their ratio of rate of emmisions is ?

Q29. An atomic particle exists and has a particlular decay rate . It is in a train . When the train moves, a person observes   for whether the decay rate

(a) increases
(b) decreases
(c) depend on the directions of movement of train

Q30. Which of the following exchanges positive ions

(a).cl$^-$
(b) nh$_2$$^-$
(c) ch$_2$

Ans. (b)

Q31. After execution of CMP, a instruction in Intel 8085 microprocessor

(a) ZF is set and CY is reset.
(b) ZF is set CY is unchanged
(c) ZF is reset, CY is set
(d) ZF is reset , CY is unchanged .

Ans. ZF is set and CY is reset

Q32. The best tool for editing a graphic image is ?

Q33. Network scheme defines
   a.)one to one
   b.) many to many
   c.) one to ,many ?

Q34. A person wants to measures the length of a rod.First he measures with standing ideally then he maeasures by
      moving parrel to the rod

(a)the length will decrease in second case
(b)length will be same
(c) length will increse in the second case.

Q35. One U-230 nucleus is placed in a train moving by velocity emiting alpha rays .When the train is at rest the
   distance between nucleus and alpha particle is x . One passenger is observing the particle . When the train is moving
   what is the distance between particle and nucleus ?

(a) x
(b) x + vt
(c) x - vt

Q36. What is the resulting solution when benzene and toluene are mixed ?

Q37. If the word FADENCOMT equals 345687921 then

1. What is FEAT
2. Find representation of 2998

Q38. Given 10 alphabets out of which 5 are to be chosen. How many words can be made with atleast one repetition.

Q39. Arrange by acidic values : phenol, nitrotolouene and o-cresol?

Q40. Find sum of $3 + 5/(1+2^2) + 7/(1 + 2^2 + 3^2) + $ ......

Ans. $3n/(1 + n)$

The following are few sample questions that maybe asked in the software paper.We haven't been able to give the values in certain problems ; only the type of questions have been mentioned.

Q What sorting algos have their best and worst case times equal ?
Ans. O(nlogn) for mergesort and heap sort

Q. What page replacement algo . has minimumn number of page faults ?
Ans. Optimality algorithm

Q. What is the use of virtual base class in c++
Ans. Multiple lines between derived classes.

Q. Find the eccentricity of a given node in a directed graph

Q. Convert the infix to postfix for A-(B+C)*(D/E)
Ans. ABC+DE/*-

Q. What is swapping

Q. Assignment operator targets to
Ans. l-value

Q. A byte addressable computer has memory capacity of 2 power m Kbytes and can perform 2 power n operations
an instruction involving three operands and one operator needs maximum of ---bits
Ans. 3m + n

Q. In round robin scheduling, if time quatum is too large then it degenerates to
Ans. FCFS

Q. What is network schema?

Q. Packet Burst is _____

Q. Picard's method uses _____?
Ans. Successive Differentiation.

The following are few sample questions that maybe asked in the hardware paper.We haven't been able to give the values in certain problems ; only the type of questions have been mentioned.

Q. Concentration and restivity is given and conductivity is asked for ?

Q. R , resistance and C,capacitance is given ,find the frequency and Q factor of the crystal ?

Q. Critical fequency and angle theta is given ;.the max useable frequency is to becalculated

Q.Questions on parabolic reflector anttena's and half wave dipole antenna's design

Q. Ramp signal is generated from integrator .Whether it is a low or high pass filter .?

Q. Calculate FM bandwidth given max modulation frequency FM , max freq deviation , δf and 8 pairs alllowable
    side band component ?

HARDWARE PAPER

1. Add 79H and 86H and tell the contents of flags

2. Scr is used for _____ (ac, dc , both)

3. Push pull amplifier is used to remove which harmonics (even , odd , both)

4. PAM is demodulated using ___ (low pass filter , high pass filter)

5. 16k memory is needed. How many chips with 12 address buses and 4 data buses are needed.

6. AM wave is detected using _____ detector

7. Which flip flop is used for shift registers

8. Program counter does what __ (stores a memory address, address of the present instruction)

9. In a bistable multivibrator communication capacitor is used for _____ (speed up response , ac coupling)

10. Totem pole is what?

11. Time costant for an integrator and differentiator should be (small , high etc.)

12. TV waves are __ (sky waves , space waves etc.)

13. Which configuration has highest i/p imp. (ce , cb , cc)

14. Parabolic antenna with 2degree angle. What is its directivity.

15. Given 10 mhz pe modulation and we got a 100 mhz band.
How many channels can be there.

16. If o/p power is doubled by how much does the sound increase (1db,2db,3db)

Interview:

The test is followed by a Technical and a HR interview. The technical interview is highly specialized and covers almost all subjects you have done in your curriculum. However one is required to name his/her favorite subject on which most of the interview is focused. For Computer Engineers C, Operating Systems, DBMS, Microprocessors are mostly focused upon. Electronics Engineers can be grilled on DCLD, Microprocessors and Communications.

The HR interview which follows the technical interview is very general. In most cases questions regarding the company are asked.

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HERE IS SOME C QUESTION

C Questions:

1. What does static variable mean?
2. What is a pointer?
3. What is a structure?
4. What are the differences between structures and arrays?
5. In header files whether functions are declared or defined?
6. What are the differences between malloc() and calloc()?
7. What are macros? what are its advantages and disadvantages?
8. Difference between pass by reference and pass by value?
9. What is static identifier?
10. Where are the auto variables stored?
11. Where does global, static, local, register variables, free memory and C Program instructions get stored?
12. Difference between arrays and linked list?
13. What are enumerations?
14. Describe about storage allocation and scope of global, extern, static, local and register variables?
15. What are register variables? What are the advantage of using register variables?
16. What is the use of typedef?
17. Can we specify variable field width in a scanf() format string? If possible how?
18. Out of fgets() and gets() which function is safe to use and why?
19. Difference between strdup and strcpy?
20. What is recursion?
21. Differentiate between a for loop and a while loop? What are it uses?
22. What are the different storage classes in C?
23. Write down the equivalent pointer expression for referring the same element a[i][j][k][l]?
24. What is difference between Structure and Unions?
25. What the advantages of using Unions?
26. What are the advantages of using pointers in a program?
27. What is the difference between Strings and Arrays?
28. In a header file whether functions are declared or defined?
29. What is a far pointer? where we use it?
30. How will you declare an array of three function pointers where each function receives two ints and returns a float?
31. what is a NULL Pointer? Whether it is same as an uninitialized pointer?
32. What is a NULL Macro? What is the difference between a NULL Pointer and a NULL Macro?
33. What does the error 'Null Pointer Assignment' mean and what causes this error?
34. What is near, far and huge pointers? How many bytes are occupied by them?
35. How would you obtain segment and offset addresses from a far address of a memory location?
36. Are the expressions arr and &arr same for an array of integers?
37. Does mentioning the array name gives the base address in all the contexts?
38. Explain one method to process an entire string as one unit?
39. What is the similarity between a Structure, Union and enumeration?
40. Can a Structure contain a Pointer to itself?
41. How can we check whether the contents of two structure variables are same or not?
42. How are Structure passing and returning implemented by the complier?
43. How can we read/write Structures from/to data files?
44. What is the difference between an enumeration and a set of pre-processor # defines?
45. what do the 'c' and 'v' in argc and argv stand for?
46. Are the variables argc and argv are local to main?
47. What is the maximum combined length of command line arguments including the space between adjacent arguments?
48. If we want that any wildcard characters in the command line arguments should be appropriately expanded, are we required to make any special provision? If yes, which?

49. Does there exist any way to make the command line arguments available to other functions without passing them as arguments to the function?
50. What are bit fields? What is the use of bit fields in a Structure declaration?
51. To which numbering system can the binary number 1101100100111100 be easily converted to?
52. Which bit wise operator is suitable for checking whether a particular bit is on or off?
53. Which bit wise operator is suitable for turning off a particular bit in a number?
54. Which bit wise operator is suitable for putting on a particular bit in a number?
55. Which bit wise operator is suitable for checking whether a particular bit is on or off?
56. which one is equivalent to multiplying by 2:Left shifting a number by 1 or Left shifting an unsigned int or char by 1?
57. Write a program to compare two strings without using the strcmp() function.
58. Write a program to concatenate two strings.
59. Write a program to interchange 2 variables without using the third one.
60. Write programs for String Reversal & Palindrome check
61. Write a program to find the Factorial of a number
62. Write a program to generate the Fibinocci Series
63. Write a program which employs Recursion
64. Write a program which uses Command Line Arguments
65. Write a program which uses functions like strcmp(), strcpy()? etc
66. What are the advantages of using typedef in a program?
67. How would you dynamically allocate a one-dimensional and two-dimensional array of integers?
68. How can you increase the size of a dynamically allocated array?
69. How can you increase the size of a statically allocated array?
70. When reallocating memory if any other pointers point into the same piece of memory do you have to readjust these other pointers or do they get readjusted automatically?
71. Which function should be used to free the memory allocated by calloc()?
72. How much maximum can you allocate in a single call to malloc()?
73. Can you dynamically allocate arrays in expanded memory?
74. What is object file? How can you access object file?
75. Which header file should you include if you are to develop a function which can accept variable number of arguments?
76. Can you write a function similar to printf()?
77. How can a called function determine the number of arguments that have been passed to it?
78. Can there be at least some solution to determine the number of arguments passed to a variable argument list function?
79. How do you declare the following:
    o An array of three pointers to chars
    o An array of three char pointers
    o A pointer to array of three chars
    o A pointer to function which receives an int pointer and returns a float pointer
    o A pointer to a function which receives nothing and returns nothing
80. What do the functions atoi(), itoa() and gcvt() do?
81. Does there exist any other function which can be used to convert an integer or a float to a string?
82. How would you use qsort() function to sort an array of structures?
83. How would you use qsort() function to sort the name stored in an array of pointers to string?
84. How would you use bsearch() function to search a name stored in array of pointers to string?
85. How would you use the functions sin(), pow(), sqrt()?
86. How would you use the functions memcpy(), memset(), memmove()?
87. How would you use the functions fseek(), freed(), fwrite() and ftell()?
88. How would you obtain the current time and difference between two times?

89. How would you use the functions randomize() and random()?
90. How would you implement a substr() function that extracts a sub string from a given string?
91. What is the difference between the functions rand(), random(), srand() and randomize()?
92. What is the difference between the functions memmove() and memcpy()?
93. How do you print a string on the printer?
94. Can you use the function fprintf() to display the output on the screen?

------------**END**--------