1. CONTENTS

Programming Puzzles

Some companies certainly ask for these puzzles. Specially Microsoft.

1. Write a "Hello World" program in 'C' without using a semicolon.
2. Write a C++ program without using any loop (if, for, while etc) to print numbers from 1 to 100 and 100 to 1;
3. C/C++ : Exchange two numbers without using a temporary variable.
4. C/C++ : Find if the given number is a power of 2.
5. C/C++ : Multiply x by 7 without using multiplication (*) operator.
6. C/C++ : Write a function in different ways that will return f(7) = 4 and f(4) = 7
7. Remove duplicates in array
8. Finding if there is any loop inside linked list.
9. Remove duplicates in an no key access database without using an array
10. Convert (integer) number in binary without loops.
11. Write a program whose printed output is an exact copy of the source. Needless to say, merely echoing the actual source file is not allowed.
12. From a 'pool' of numbers (four '1's, four '2's .... four '6's), each player selects a number and adds it to the total. Once a number is used, it must be removed from the pool. The winner is the person whose number makes the total equal 31 exactly.
13. Given an array (group) of numbers write all the possible sub groups of this group.

C/C++ Questions

1. What is the output of **printf("%d")**
2. What will happen if I say **delete this**
3. Difference between "C structure" and "C++ structure".
4. Diffrence between a "assignment operator" and a "copy constructor"
5. What is the difference between "overloading" and "overridding"?
6. Explain the need for "Virtual Destructor".
7. Can we have "Virtual Constructors"?
8. What are the different types of polymorphism?
9. What are Virtual Functions? How to implement virtual functions in "C"
10. What are the different types of Storage classes?
11. What is Namespace?
12. What are the types of STL containers?.
13. Difference between "vector" and "array"?
14. How to write a program such that it will delete itself after exectution?
15. Can we generate a C++ source code from the binary file?
16. What are inline functions?
17. Talk sometiming about profiling?
18. How many lines of code you have written for a single program?
19. What is "strstream" ?
20. How to write Multithreaded applications using C++?
21. Explain "passing by value", "passing by pointer" and "passing by reference"
22. Write any small program that will compile in "C" but not in "C++"
23. Have you heard of "mutable" keyword?
24. What is a "RTTI"?
25. Is there something that I can do in C and not in C++?
26. Why preincrement operator is faster than postincrement?
27. What is the difference between "calloc" and "malloc"?
28. What will happen if I allocate memory using "new" and free it using "free" or allocate sing "calloc" and free it using "delete"?
29. What is Memory Alignment?
30. Explain working of printf.
31. Difference between "printf" and "sprintf".
32. What is "map" in STL?
33. When shall I use Multiple Inheritance?

34. What are the techniques you use for debugging?
35. How to reduce a final size of executable?
36. Give 2 examples of a code optimization.

Operating Systems

Requirements Management

1. What is your project about? What stage or phase is it currently in? What is your current role in your project?
2. Explain how you manage requirements in your project?
3. Where and how do you document your requirements?
4. What and where are the policy statements for requirement management?
5. How do you ensure that you base your software plans, work items and products on the requirement?
6. If during some stage down the life cycle, the initial requirements change, what will you do? How will you handle any changes in the requirements?
7. Who reviews the requirements and the changes to the requirements?
8. Explain the contract review process followed in your project?
9. When requirements change, how do you handle the changes it may lead to project progress and schedule?
10. How do you handle any risk that might arise due to changes in requirements?
11. How do you ensure that you are consistently meeting the requirements during various stages in the life cycle of the software product?
12. How do internal quality audits cover requirements management activities in the project?
13. Who is responsible for managing the requirements in your project?
14. What will you do if you find that you cannot meet the requirements?

While doing HLD/LLD/Coding/Testing, how do you know that a specific HLD/LLD component, program code unit, or test case relates to a particular requirement? Software Project Planning

1. What is the project management structure in your project? Is a PL assigned to the project?
2. How do you know that a particular individual is the project leader (or) how do you know that you are the Project Leader?
3. What and where are the policy statements for software project planning?
4. Explain the various activities you do (as a PL) when the project is started up.
5. How do you know what you need to deliver or do in your project?
6. How do you create the Software Project Management Plan (SPMP)?
7. What training have you undergone in project planning?
8. How do you ensure that your project plan is available for others to see? Where will you find the plans of other projects executed (in the past or currently) in the center?
9. How did you choose the appropriate lifecycle for your project?
10. What are the documents that you will refer to create the plan?
11. How do you estimate the effort for your project? Where is the estimation procedure documented?
12. What procedures do you follow to arrive at the project schedule?
13. Where and how are the risks associated with your project identified and documented?
14. When you come in to the office, how do you know what you have to do during the day?
15. How do you report the status of your project?
16. How are the team members kept informed about the current status of the project?
17. How do the audits cover planning activities?
18. How does the senior management review your project's progress?
19. How do you track the technical activities in your project? How is the status of the project communicated to the team?
20. How do you track the size or changes to size of the work products in your project?
21. When do revise your project plan? When do you know you have to revise your project plan? Where is the plan revision frequency documented?
22. How do you ensure that you and all the other team members in your project have the required technical skills to execute the project?
23. How do you assign tasks to your team members? ?
24. What is the document that should be consulted to know about your project, the activities you do, your schedules and milestones?

Software Quality Assurance

1. What and where are the policy statements that dictate quality assurance in your project?
2. What are the functions of the Quality Assurance Group (QAG)?
3. How are the quality assurance activities planned ?
4. What is a non-conformance report (NCR)?
5. When a non-conformance is noted during these "reviews", what happens next?
6. What is is External Quality Assurance (EQA) and Final Inspection (FI)?
7. Is the quality assurance group (for the QAG) audited? Who does these audits?
8. How frequently is your project audited? How do you know the result of these audits?
9. What is an internal quality audit? What happens during this audit?

INFOSYS

Profile: :

Infosys (**NASDAQ: INFY**) is a world leader in providing **IT** consulting and software services to the world's finest organizations. They offer a complete range of **software and consulting services** such as business-technology consulting, Internet and e-business consulting, system integration, custom application development, re-engineering and sustenance. The **highest rated scrip** on the Indian bourses - **Infosys** is the most admired company on the **BSE**. It is the face of the Indian software industry. The company was the **first in India to register** on the American stock exchange - **NASDAQ** with an issue of two million **American Depository Shares** (ADR) that raised $70 million.

Infosys' **solutions** include building next generation communication, networking, and e-infrastructure products for clients. Fortune 1000 companies leverage Infosys' expertise to align their business and IT strategies and successfully transform themselves for the new economy. **Infosys** also partner leading-edge technology companies looking to be the architects of the Internet infrastructure. **Infosys** have a strategic global relationship with **Microsoft** for developing, promoting, and delivering a comprehensive portfolio of Infosys business solution offerings and

enterprise services built using the Microsoft. Infosys have **alliances** with **i2** Technologies, **JASDIC Park** Company, **SAPMarkets** Inc. and **TIBCO** Software Inc.

Infosys' **clientele** include many banking firms worldwide, **Cisco** Systems, **Huawei** Technologies Co. Ltd., **Lucent** Technologies, **Apple** Computer, **Reebok** International, **Nortel** Networks to name a few.

The **Banglore** based company started in 1981 has around 5,500 employees and hopes to double this figure to 10,000 till the end of year 2003(courtesy:Busiiness India). The company was also judged as the **5th best managed** company in Asia. The company's **Chairman Mr. N. R. Narayana Murthy** was selected as one of the 50 most powerful people in Asia for the year 2000 in a poll conducted by Asia week.

Written Test:

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**.

SET A

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)

SET B

1. 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).

SET C

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

Ans: 2 power 9 x 5 power 9

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.

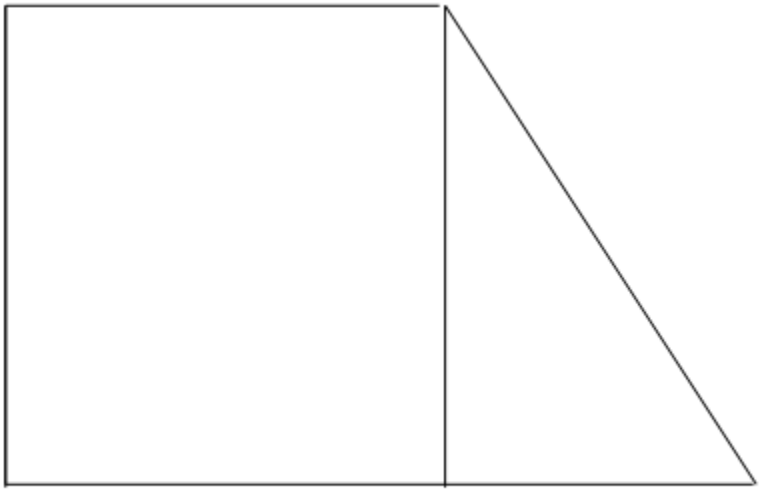
Ans: 2 , 5 , 1 , 3 , 6 , 4

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



Ans: Hint : the figure can be divided into 12 equal triangles

10. Supposing a clock takes 7 seconds to strike 7. How mlong will it take to strike 10?

Ans: 10 1/2 seconds.

SET D

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.
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?

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.
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
------------
```

What is the maximum value T can take?

SET E

1.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?

Ans: Kumar Misra Dev
Mohan Iyer Dev
Kumar Patil Mohan
Mohan Sharma Kumar

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)

SET F

1. 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 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.

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 ?

Ans: Total no of balls = 89 and (89-29 /2) = 60/2 = 30 and also 14 + 16 = 5 + 7 + 18 = 30

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

SET G

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.

Ans.

1. 1) a) 10 1 9 2 8 3 7 4 6 5 5 6 4 7 3 8 2 _ _

b) 2 4 16 512 _

write the next elements in the series.

2. A Man is sitting in the last coach of train could not find a seat, so he starts walking to the front coach ,he walks for 5 min and reaches front coach. Not finding a seat he walks back to last coach and when he reaches there, train had completed 5 miles. what is the speed of the train.

3. The Old carry requires tyres to be changed after each 24000 km. if she wants to go for 42000 km journey then how many minimum number of tyres she will need.**?**

Ans:

4. A coin is so unbalanced that it may come both heads in 2 tosses as it may come tails in a single toss. what is the probabality of getting a head in a single toss.

Ans:

5. A pen, pencil and eraser together cost $1.00. if 2E<N , if N>2P, and 3P>4E then what a single pen will cost??

Ans:.

6. A local forecast service has accuracy of 2/3 says No rain , and Meteriological service having accuracy of 4/3 says Rain. if Preference is as no rain what is the chance of rain??

Ans:

7. Sherlock holmes thrwated the plan to kidnapp Mrs mary when they were questioned Mercy and his two associated shipy and rany.when they were telling the story one of them told one thing wrong and other true, the other told both true, and the last told both false. examining the following tell the roles played by each ??

Mercy:: 1) i wrote the ransome note ??

2) shipy broke into the window

rany 1) shipy wrote the ransome note

2) mercy ran away with the lady

shipy 1)i broke into the window

2)rany wrote the ransome note.?

Ans :

8. Tom asked kim did you like the stamps? she said yes ,me and rob too liked them. kim again said that rob got 3 more than he wd have got if i would have kept 2 more than what he got. Tom asked how many u gave Rob? she replied 2 more than what i got. Tell , how many stamps each rob and kim got?.

Ans:

9. The virgo club members used to meet every week to play cards. Each time they used to seat around a round table and for their memory they used all the possiblecombinations of postions each for a single time only. Can you tell for how many times they met??

Ans:

Essays Asked

1. 1. If you are given a chance to change a thing in you hometown , what would you change ? give examples why you want to do so.

2. Television is creating a communication gap among young generation..

Latest Questions - Excerpts from Jan -2003 Infy test.

(Since these questions are the contributions from the vistors of freshersworld.com only, Questions are not complete. Pls bear with us)

1 A bicycle goes 1 mile in three minutes with the wind and returns back in 4 min. against the wind.How many minutes he will take to cover 1 mile when there is no wind? **Ans (**drag mouse over it **)**

2 A man passed one sixth of his life in childhood , one twelfth in youth, And one seventh more as a bachelor , 5yrs after his marriage a son was born Who dies 4yrs before his father at half his final age.What is the total age of the man ? **Ans (**drag mouse over it **)**

3 Alpha,Beta Gamma ,Theta and Epsilon.There are 5 different quantities Are given · If and only if alpha=gamma then beta<>epsilon · Alpha-beta = beta-gamma alpha>theta · Alpha>beta and gamma>theta Write the quantities in descending order **Ans** (drag mouse over it **)**

4 A thief broke into a jewellery shop and thought of taking all the diamonds with him but while he was leaving came to his bitter senses and thought of taking half with him but he could not resist and took more extra and left . A second thief came and took half of the remaining and two more .A third thief came and took half the remaining and two more .Then fourth thief came and did the same .The fifth thief came and there was no more diamond for him to steal What was the actual no.of diamonds initially ?

Ans (drag mouse over it **)**

5 SEND 9567 What is the value of M,O,N,E MORE 1085 MONEY 10652 **Ans (**drag mouse over it **)**

6 Three man A,B,C went in three direction and had stolen a mule , a horse and a camel they ware caught by C.B.I and arrested . During their interrogation they gave the following statements. A: B had stolen a horse B: A and C are both lying and I had stolen nothing. C: A is lying and B had stolen a mule One who had stolen a camel is telling lie and one who had stolen a horse is telling truth. Among A,B,C who had stolen which animal ? **Ans (**drag mouse over it **)**

7 A scientist `SAM' arrived late in his lab and found that his watch the minute hand and the hour hand ware coming together in every 65 min. Was his watch gaining or losing time and how much per hour *refer to SHAKUNTALA DEVI'S puzzles to puzzle you NO-63

1. Amarpur is north of Landganj and west of Chutpur
2. Basti is north of Amarpur and west of Fulganj
3. Dania is south and east of Amarpur
4. Landganj is north of Fulganj and east of Dania
5. Fulganj is north of Dania and west of Amarpur

6. Chutpur is south of Fulganj and west of Dania

(A)Which of the towns mentioned is furthest to the north-west ?

*Amarpur
*Basti (Ans)
*Chutpur
*Landganj.
*Fulganj

(B)Which of the following must be both north and east of Fulganj ?

1-Amarpur,
2-Chutpur,
3-Landganj ·

1 only ·
2 only ·
3 only ·
1 and 2 ·
1 and 3 (ans)

(C) Which of the following towns must be situated both south and west of atlest one other town ? ·

Amarpur only ·
Amarpur and Fulganj ·
Dania and Fulganj Dania ,
Chutpur and Fulganj. (Ans) ·
Chutpur,Dania and Landganj.

Another Set of Questions... !!

1) Henny,Axie,Amie are friends

cond:a)Herry or Axies is the oldest
b)If Axie is the oldest,Amie is the youngest
ANS:Amie is the youngest,Axie is oldest
2)A,B,C are 3 girls and there are 770 Apples.For every 4Apples A takes,B takes 3.For ever 6 Apples ,C takes 7 Apples?
ANS:261:145:303
3)T,U,V are 3 friends digging groups in fields.If T&U can complete i groove in 4 days&,U&V can complete 1 groove in 3 days&V&T can complete in 2 days
Find how many days each takes to complete 1 groove individually.

ANS:24 days =
4)4 mathematician has x apples .if he arranges them
in rows of 3 one will be left.the same is the case
with 5,7,9 apples.But when he arranged them in rows of
11 non will be left.Find the no.of apples
ANS:946
11*6
11*11
11*16
11*21
=2E.....11*76
=3D946
5)H starts running after T reaches
1/5th they must when H reach
1/6th if H wants win at what speed H should be run
note:one circle is there,you show this type of
problem
6)There are 4 months,4 daughter and the colour of
their dresses ,and they are aged 1,2,3&4 .stat are in
form as the girl with white dresses is see is daughter
7)There are 5 levels of dolls and each the diff
colors & condition are given
note:this type of problem also refer
8)5 student A,B,C,D,E .one student knows 5
languages.like that up to one langauge.states
*)Spanish is most popular langauge
*)3 persons knows Porchigese
*)B&C are speakes Englishj when D gathered they
switched to Spanish because that is only common
between the three
*)only langauge common between A,B,E is French
*)only langauge common between C,Eis Italian.

Another Set of Questions... !!

1.There are 111 players participating in a singles tennis tournament. The player who is loosing will be out of the tournament.
For each and every match,One new ball is taken. Find the no. of balls required for the entire tournament.

ans:110

2.Two trains are crossing each other.the speed of one train is given. Calculate the time for the engine of one train crosses the other train..
chk. the question correctly..
it is available in sakuntala devi's "puzzle 2 puzzle u"

3.Anan with her son went for shopping she met her husband's mother's only daughterinlaw's sister's husband. find the relation between anan and the mentioned Person.
ans: anan-->sister's husband

4.Question on sets:
In a city,there are 23080 people.
30% read "a" newspaper.
35% read "b" newspaper
40% read "c" neewspaper
1/3 of total read both a and b
25% read both b and c
34% read both a and c
1/3 read all the three.
find.
1.the no. of persons who read a only.(approx,. 4000+)
2.b only(0)
3.c only
4.none of the papers

5)Question on finding the "day"
six persons are there.a.. f
a:the day before yesterday is either friday or saturday.
b:today is saturday.
c:today is not saturday but either friday or saturday.
d:day after tomorrow is not tuesday.
e:.....
f:.....

answer:friday

6)Question on finding who is familiar with which language.. some five names are given. and five statements are given. analyse all the statements ..

eg. "a" knows somewhat eng but not either urdu or tulu..

answer:

7)I have got some money in my bag.(which is stolen after shopping I and II). I spent 10% of my money for shopping(I) For second time,10% of the remaining Money is spent for shopping(II) The total bill amount=Rs.18. Find the amount which will be remaining in the bag?

answer:Rs.81

**********INTERVIEW QUESTION **********

In a box there are three black and two blue caps.Three man A,B,C came and takes out one cap each . · A can't see his own cap but can see what B and C are wearing. · B can't see his own cap but can see what C is wearing · C can't see any body's cap When A is asked about his cap he answered "no he can't". B Also replied the same but C answered yes and got the answer right. So tell what color of cap C is wearing? (Ans-black)

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*SHAKUNTALA DEVI-MORE PUZZLES
*SHAKUNTALA DEVI-PUZZLES TO PUZZLES(this book is important for 3 marks question and 8th problem is very very important)
*PUZZLES&TEASERS-author is GEORGE J.SUMMERS
*prepare GRE type of questions

---

i2 -1

i2 Technologies

Profile:

i2 is a leading **B2B** and **e-commerce solution provider**. It has been globally active for the past **10 years** providing solution incorporating a complete supply chain model, marketplace-to-marketplace support and rich content management capabilities.

Headquartered in **Dallas, USA**, i2 has offices all across the globe including **Mumbai** and **Bangalore.**

For more information about this company visit their homesite at http://www.i2.freshersworld.com

Written Test:

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.

- **Test1**

Interview:

The test is followed by a HR interview. The interview is very general.In most cases questions regarding the company are also asked.

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i2 Technologies **i2 -1**

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 -1

IBM Global

Profile:

IBM strives to lead in the creation, development and manufacture of the industry's most advanced information technologies, including **computer systems, software, networking systems, storage devices and microelectronics.**IBM brings its products and services through IBM India and IBM Global Services.

IBM India's product portfolio includes the IBM PC, Aptiva home computer , ThinkPad portables, RS/6000, AS/400e, S/390 and Netfinity servers, network computers, printers, networking and storage products. IBM's software offerings include DB2, Lotus, Tivoli, MQ Series and a range of Internet software like WebSphere and SecureWay.

India is also home to **two select IBM centers** - the **IBM Solutions Research Center** at **New Delhi** and the **Solutions Partnership Center (SPC)** at **Bangalore**. The SRC (only the eighth of its kind across the globe) is an extended arm of IBM Research activities. As part of IBM's global research infrastructure, the SRC participates in path breaking research

projects for IBM worldwide. The Solutions Partnership Center at Bangalore is a part of IBM's developer relations focus for India. The SPC is a showcase of IBM technology and a testing and porting lab for application software developers.

The current pay package is around Rs. **20,000**. IBM is on spree of increasing its male/female ratio in its workforce hence female candidates are being given a slight advantage over their male counterparts.
For more information about this company visit their homesite at http://www.ibm.freshersworld.com

Written Test:

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**.

We are providing you with some of the questions asked in the exam, so that you have an idea of what to expect in the written test.

- **Test1**

Interview:

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.

IBM -1

IBM Global

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

Ans. (a)

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

Ans. (b)

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)

Hughes Software

Hughes -1
Hughes -2

Profile:

Hughes Software Systems (HSS), **the #1 Communications Software company in India** , offers the full spectrum of communications related software services, products and solutions. With over 40 customers spread over the Americas, Europe and Asia, HSS focuses on providing solutions to Telecom / Datacom Equipment Manufacturers, System Integrators and Communication Services Providers.

Setup in the year 1992, it is headquartered in a **state-of-the-art campus in Electronic City**, a New Delhi suburb. HSS has a dedicated Internet and ECommerce development center in **Bangalore, the Silicon Valley of India**.

Continued significant investments in R&D have positioned HSS at the forefront of emerging communication technologies. The focus areas are Communication Protocols, Wireless Networks, Telecom / Data Networks, Next Generation Networks, Intelligent Networks, Network Management, Internet and E-commerce.

Based on its strong expertise in all communication technologies and applications, HSS is involved in the design and development of Switching Systems, Mobile Satellite Communication Systems, Cellular Infrastructure, Access Networks, Enterprise Networking Solutions, Network Management Solutions, VoIP Solutions and E-Commerce and Internet based systems.

For more information about this company visit their homesite at http://www.hssworld.freshersworld.com

Written Test:

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.

- **Test1**
- **Test2**

Hughes Software

Hughes -1
Hughes -2

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.....

Hughes Software

Hughes -1
Hughes -2

1. 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

Geometric Software Solutions **Geometric Software-1**

Profile:

Geometric Software Solutions is a company specializing in providing software technology anddevelopment services to **CAD /CAM /CAE /PDM** vendors world-wide. Geometric Software offers expertise in **solid and surface modeling**, **feature recognition , data translators , ACIS** and **Parasolid geometry kernels , PDM , nesting**, and **machining**.

Geometric was established in **1994** .Prior to that,the activities were a part of a division of Godrej &Boyce Mfg.Co Ltd. Geometric is organized into **Component Software, Customer Services, OEM Applications** and **Plug-in Applications**.

For more information about this company visit their homesite at http://www.geometricsoftware.freshersworld.com

Written Test:

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

Test1

Interview:

The test is followed by an interview. One must prepare questions related to **basic geometr**y. Questions like proving the sum of all angles of a triangle is 180 degrees, proving that an angle of 90 degrees is subtended have been asked. Besides these, questions based on **C** and **Computer graphics** are also asked.

Interview Section

Geometric Software Solutions

Geometric Software-1

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;
}
```

Future Soft -1

Future Software

Profile:

Established in the year 1985, Future Software Ltd. are providers of communications software products and services in emerging technology areas to the global communications industry. The company's exclusive focus on communications software has enabled them today to be one of the leading independent software companies worldwide, in this field. Future Soft's corporate headquarters are in Chennai and its subsidary in USA - Future Communications Software, markets and supports its products and services to the North American and European markets.

Future Software is today, an organization of more than 300 engineers, managed by a team of professionals with extensive experience in software engineering and project management. Future Software Ltd. is a knowledge organization accelerating the development of advanced communications technologies through a commitment to partnership and research.

The company has long term partnerships with its existing clientele and its customer list includes many of the top 25 global communication companies. Future Software Ltd. has been assessed at SEI CMM Level 4.

The company is offering a remuneration of 2.7 lacs to 3.2 lacs per annum**.**

For more information about this company visit their homesite at http://www.futsoft.freshersworld.com

Written Test:

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.

- **Test1**

Interview:

The test is followed by a technical interview.The interview is reasonably tough.The interviewers generally lay stress on Operating Systems, C and Networks. The technical interview also entails the HR interview which is quite general.

Interview Section

Future Software

Future Soft -1

1. 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

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

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) $O(n^2)$

(c) O(log n)
(d) $O(n^3)$
(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. $O(n^2)$

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

Ans. O(n + e)

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 programlm

```
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.

Deutsche -1

Deutsche Software(India) Ltd

Profile:

Deutsche Software (India) is a wholly owned s ubsidiary of **Deutsche Bank (Asia-Pacific) Training Centre Pvt.Ltd.**It was established in **1992**. The company showed a revenue of Rs.43.32 crore in the year 1999 -2000 showing a growth of about 11%. The company has its headquaters at **Bangalore**. Deutsche Software presently has about 400 employees. **Mr.S.Nagarajan** is the present **CEO.**

It is a software company that is much more specific to providing **financial management services** to banking and other financial institutions.

Deutsche Software provides IT support to **Deutsche Bank AG WorldBank** , and also other subsidaries of its.

The company offers a remuneration of **Rs.2.4 to 2.6 lacs per annum.**

For more information about this company visit their homesite at http://www.dsidb.freshersworld.com

Written Test:

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.

- **Test1**

Deutsche Software(India) Ltd

Deutsche -1

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

Ans. B

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

Ans. A

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

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

Ans. B

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

Ans. B

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

Ans. A

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

Ans. D

Dharma Systems **Dharma -1**

Profile:

Dharma Systems, Inc. is a leading supplier of application integration technology for **Web integrators** and **e-business integration technologies**. Dharma Systems has over **13 years** experience in providing integration technology to companies with large legacy systems . The company's client includes **BMC Software, Lucent Technologies, Unisys, Objectivity,** and **Agilent Technologies** . In addition to partnering with Web Development firms,Dharma Systems also has partnered with a number of major application server vendors including **Bluestone Software, Fujitsu, GemStone Systems, Secant Technologies** and **Unify**. The company is headquartered in **Nashua, New Hampshire** and has additional U.S. offices **San Mateo, CA** and **Raleigh, NC**. In addition, the company also has a wholly owned subsidiary

in **Bangalore, India**. The company employs a staff of approximately **180** people worldwide. Their flaship product is called **eUnify**.

For more information about this company visit their homesite at http://www.dharma.freshersworld.com

Written Test:
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..

- **Test1**

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. Some puzzles may also be asked in the interview. Special emphasis is laid on C and Data Structures. The technical interview is followed by an H R interview.

Dharma Systems

Dharama Test Paper

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

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

Ans: Undefined

2.
```
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.

```
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.

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

Ans: 321

16.

```
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.

```
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"

D. E. Shaw & Co. **DEShaw -1**

Profile:

In July 1988, a small investment partnership called D. E. Shaw & Co., L.P. was organized with an **initial capitalization of US $28 million** and an ambitious plan for the application of quantitative and computational techniques to various aspects of the securities business. Today, the D. E. Shaw group of companies has approximately $1.2 billion in aggregate capital, and has earned an international reputation for financial innovation and technological leadership.

For the first several years of its existence, D. E. Shaw & Co. used its technical expertise solely to trade for its own account, establishing a quiet reputation within the quantitative financial community

while remaining nearly invisible to the world at large. In 1992, however, the firm made a strategic decision to expand its focus and presence, launching a new business unit to apply quantitative and computational techniques in support of the provision of financial services to outside customers. A third line of activity was added in 1994, when the **company began to fund (and, in some cases, organize) early- and intermediate-stage technology-oriented business ventures.**

The firm was **founded in 1988 by David E. Shaw**, who continues to serve as chairman and chief executive officer of D. E. Shaw & Co., Inc. The author of 63 scholarly publications, Dr. Shaw received his Ph.D. from Stanford University in 1980 and served on the faculty of the Department of Computer Science at Columbia University before joining Morgan Stanley & Co. in 1986 as its vice president in charge of automated analytical trading technology. Earlier, he founded and served as president and CEO of Stanford Systems Corporation, a computer systems firm based in California's Silicon Valley.

The indian arm of the company is **based in Hyderabad**. The company's pay package is comparable to the best in the industry.For more information about this company visit their homesite at http://www.deshaw.freshersworld.com

Written Test:

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.

- **Test1**

Interview:

The **interview is based mainly on C**. The panel may ask you to solve some new questions in front of them.Your C fundamentals should be very strong and expect some real tough stuff from the panel.For details on the other frequently asked questions please refer to our Interview Section.

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.

Cognizant Technology Solutions (CTS) **CTS -1** **CTS - 2** **CTS -3**

Profile:

Founded in 1994 as a division of Dun & Bradstreet Corporation, Cognizant Technology Solutions began doing large-scale full life cycle software projects. CTS works in fields related e-business and application management. CTS is also engaged in offshore development and provide services in other fields like wireless, data warehousing and euro-compliance. They also service varied industries like healthcare, finance, information services, retail and restaurant and telecom.

Headquartered in Teaneck, New Jersey, CTS has sales offices located in Chicago, Dallas, Minneapolis, Los Angeles, San Francisco, Toronto, London and Frankfurt. CTS has nine development facilities in India spread across Chennai, Calcutta, Pune and Bangalore.

For more information about this company visit their homesite at http://www.cognizant.freshersworld.com

Written Test:

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.

- **Test1**
- **Test2**
- **Test3**

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.

Cognizant Technology Solutions (CTS) CTS -1 CTS - 2 CTS -3

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-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 differnet 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.

Cognizant Technology Solutions (CTS) **CTS -1** **CTS -2** **CTS -3**

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 does not involve (do)

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

Ans. (A)jack ordered for

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

CISCO

Profile:

Cisco Systems is the worldwide leader in **networking for the Internet**. Cisco provides **end-to-end networking solutions**. Cisco sells its products in a pproximately **115 countries** .Cisco is one of America's greatest corporate success stories. Since shipping its first product in 1986, the company has grown into a **global market leader** that holds No.1 or No.2 market share in virtually every market segment in which it participates. Since becoming a public company in 1990, Cisco's annual revenues have increased from $69 million in that year to $12.2 billion in fiscal 1999. As measured by **market capitalization**, Cisco is among the largest in the world.

For more information about this company visit their homesite at
http://www.cisco.freshersworld.com

Written Test:

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.
(We have not provided you with the choices in the model test paper.)

- **Test1**

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. Some puzzles may also be asked in the interview. Special emphasis is laid on C and Data Structures. The technical interview is followed by an H R interview.

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 ?

Ans: 133

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

Index of Question Papers

Wipro Technologies

Wipro -1 Wipro -2 Wipro -3

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~□[log sinx]dx=k,then the value of 0~□/4[log(1 + tan x)]dx ,where□ 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

Ans. (a)

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

Ans. (c)

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

Ans. (b)

68. A feasibility document should contain all of the following except

(a) Project name
(b) Problem descriptions
(c) Feasible alternative
(d) Data flow diagrams

Ans. (d)

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

Ans. (a)

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

Ans. (d)

71. Which of the following memories has the shortest access time?

(a) Cache memory
(b) Magnetic bubble memory
(c) Magnetic core memory
(d) RAM

Ans. (a)

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

Interview Section

Wipro Technologies

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 $\cos^2A + \cos^2B + \cos^2C = 1$ 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

Ans. (d)

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

Ans. (a)

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

Ans. (a)

17. Which of the following is least acidic

(a) Ortho-cresol
(b) Para-cresol
(c) Phenol
(d) Meta-cresol

Ans. (b)

18. In Reimer-Tiemann's reaction, the reaction intermediate is

(a) Carbene
(b) Dichloro carbene
(c) Carbonion
(d) Carbonium ion

Ans. (b)

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

Index of Question Papers

Wipro Technologies

Wipro -1 Wipro -2 Wipro -3

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) ${}^{7}C_{3}$
(b) ${}^{7}P_{3}$
(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

Ans. (a)

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

Ans. (d)

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

Ans. (b)

Q14. The sum of the series $1 + 1(1+1/n) + 3(1+1/n)^2 + ...$ is equal to?

Ans. n^2

Q15. Two circles of different radii intersects each other what is the maximum no of intersections

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

Ans. (c)

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 $\int e^x dx)/(\int e^2xdx)$ 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□□ 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 fequency FM , max freq deviation , □f 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)

Index of Question Papers

TCS TALENT TEST

TCS C Test

Tata Consultancy Services (TCS)

TCS -1 (Aptitude Test)
TCS -2 (Phychometry Test)

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

ADAGE

POTENTIAL

a. behavior
b. ***hold down***
c. hold up
d. relieve
e. condemn

a. advice
b. ***proverb***
c. enlargement
d. advantage
e. usage

a. ***latent***
b. hysterical
c. conventional
d. symmetrical
e. conscientious

DISCRETION
a. ***prudence***
b. consistency
c. precipice
d. disturbance
e. distemper

TO DISPEL
a. ***to dissipate***
b. to dissent
c. to distort
d. to disfigure
e. to dissect

EXTRICATE
a. terminate
b. isolate
c. ***liberate***
d. simplify
e. frustrate

ORDAIN
a. arrange
b. ***command***
c. contribute
d. establish
e. control

ERRATIC
a. unromantic
b. free
c. popular
d. steady
e. ***unknown***

DISPARITY
a. ***inequality***
b. impartiality
c. unfairness
d. twist
e. None of these

FLORID
a. ***ornate***
b. thriving
c. artistic
d. elegant
e. None of these

TO MERIT
a. to embrace
b. to devote
c. ***to deserve***
d. to combine
e. to display

TO CONFISCATE
a. to harass
b. to repulse
c. to console
d. ***to appropriate***
e. to congregate

PENITENCE
a. liking
b. insightful
c. attractive
d. penetrable
e. ***compunction***

RAPT
a. lively
b. ***concealed***
c. engrossed
d. prototype
e. None of these

PIOUS
a. historic
b. ***devout***
c. multiple
d. fortunate
e. authoritative

WHET
a. ***stimulate***
b. humorous
c. inculate
d. dampen
e. None of these

TO HEAP
a. ***to pile***
b. to forbid
c. to proceed
d. to share
e. to stoop

LETHARGY
a. reminiscence
b. category
c. fallacy
d. unanimity
e. ***stupor***

INCENTIVE
a. reflex
b. amplitude
c. inflection
d. ***provocation***
e. escutcheon

CAJOLE
a. ***coax***
b. motivate
c. profound
d. mollify
e. evade

CARGO
a. cabbage
b. camel
c. lance
d. ***freight***
e. flax

LATITUDE
a. ***scope***
b. segment
c. globule
d. legislature
e. lamentation

OVULATE
a. penury
b. immunize
c. ***fertilize***
d. reproduce
e. incisions

OVATION
a. oration
b. gesture
c. emulation
d. ***applause***
e. nourish

Aptitude

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".

Consider the following paragraph:

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".

Interview Section

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TCS Talent Test TCS C Test

Tata Consultancy Services (TCS)

TCS -1 (Aptitude Test)
TCS -2 (Phychometry Test)

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)\{ ....}
(c) x=0;
do{ /*x unaltered within the loop*/
.....}while(x = = 0);
(b) for(;;){...}
(d) # define TRUE 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;

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Wilco Software

Wilco -1

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:
$1/x - 1/y = 1/3$, $1/x2 + 1/y2 = 5/9$.

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 x2y3 = 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();
          printf("%c",*f()='A');
         }
```

Q7.
```
#define MAN(x,y) (x)>(y)?(x):(y)
        {
          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;
 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>
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;<BR>                a>=5?b=100:b=200;
    printf("%d\n",b);
  }
```

Q16.
```
#define PRINT(int) printf("int = %d ",int)
main()
  {< BR>                intx,y,z;<BR>                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[] = { {"

};
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);
 }
```

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Tatainfo -1

Tata Infotech

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 KW 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= ?

Ans. 9591

6. 48.7 + 24.9 - 8.7 = ?

Ans. 64.90

7.525.0/47.8 = ?

Ans. 11

8. (135-30-14)*7 - 6 +2 = ?

Ans. 3

9. 3/8 * 5.04=?

Ans. 1.89

10. 697 /219 = ?

Ans. 3.18

11.8/64 +64/16 =?

Ans. 4.14

12. 298 * 312 / 208 = ?

Ans. 453.54

13. 0.33 *1496 /13 = ?

Ans. 37.98

14.0.26 + 1/8 = ?

Ans. 0.385

15. 66.17+1/3= ?

Ans. 67.03

16. 2.84+1/4= ?

Ans. 3.09

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.

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Sun Micro Systems **Sun -1**

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

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C TEST

Sonata Software

Sonata -1 (Aptitude Test)

Sonata -2 (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]);
```

```
}
```

a) r b) f c) m d) y

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

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APTITUDE TEST

Sonata Software

Sonata -1
(Aptitude Test)
Sonata -2 (C 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

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