******************Hughes paper in DCE************

All ques. had four options.

1- What is max. no. of hops in hypercube n/w with n (=2 ^ p) to go from one node to another ?
a. p
b. log p
c. n ^ 2
2- What is Kerberos ?
ans. Authentication Protocol.
3-In completely connected multiprocessor system with n processors
, links will be of the order of
a. O(n ^ 2)
b. O(2 ^ n)
c. O(n/2)
4-When quick sort gives worst performance ?
ans. When elements are in order.
5- o/p of each sorting step of 8 elements was given and had to recognise which sorting algo.?
Ans. Bubble sort (Not Sure , Check it out)
6-In worst case ,which sort is best out of following sorts?
a.heap
b.selection
c.quick (ans.)
d. insertion
7-Three very simple gate circuits each having inputs A,B,C,D were
given and had to tell ,which two give same result ? (DeMorgan's Law was used in solving)
Ans was (a) &(c) (o/p of a & c was coming to be AB +CD)
8-K-map given,had to tell simplified function
Ans was perhaps AB+AD +AC+BCD

K-Map was
CD`
AB 0 0 0 0
0 0 1 0
1 1 1 1
0 1 1 1

9-What is Function Point ?
Ans. S/W estimation technique
10-p points to an integer. We don't want p to change value. In C, what declarations will we use?
A const int *p
b.int *p
c.int const *p
e. int* const p (perhaps ans.)
11-Diff between 2NF &3NF ?
Ans. D (last option)
12.Which does not use client server model ?
a. Email
b. Web access
c. C. Telephone call
d. N/w file system
13-In a pipeline having 3 stages, each having reliability of 0.9

,what is overall reliability of pipeline?

a. 0.9

b. 0.729

c. 0.81

14-2level cacheis there first level cache's access time is 100ns,second
level cache's access time is 33ns & memory access time is 1000 ns
. Wh at is total memory access time ?

ans. 140 ns

15-In public key cryptography,Awillsend message to B

ans. Using B's public key

16-What does projection of a relation give?

Ans.gives vertical partition of relation corresponding to specified columns.

17-For disk or direct access storage, which is best ?

a. AVL

b. B-tree

c. Red tape ...

18-There is a tree with inorder threading Node B is inserted as
left child of nade A. Node A already has right child . Where will the nullptr of B point ?

ans. Parent of A (perhaps)

19-There is a diskless workstation. Which will be the first protocol it will use ?

a FTP

b. ARP

c. HTTP

d. RARP

20-Compiler keeps which of following ?

ans. Symbol table

21- 'ping' command uses which protocol ?

ans. ICMP

22-Merge sort uses which technique?

Ans. Divide and Conquer

23-Program counter is incremented in

a. fetch (ans)

b. decode

c. execute

24-what does the following program do ?

```
f(int n)
{
int c;
while(n)
{
n&=n-1;
c++;
}
print c;
}
```

ans. Program prints the no. of set bits in no.

25-What is this called (char *) (*(*(A[X]) ( ))) ( )

ans. Array of X pointers to a function returning pointer to functions that are returning pointer to char (not sure)

26- For synchronisation in distributed computing, what should not be there ?

a. all machines are synchronised by a global clock

b. all systems should have their own clock (perhapsans)

27-Java applet of a moving /waving file is running on one machine then it means

a.Java' executable code is downloaded and running on the m/c

b.A virtual X server is running on that m/c while the actual program is running on the web server.

28-What is in RSA algo. ?

a. First the session key is encrypted & then whole message is encrypted using RSA Algo.

b. Message is encrypted using RsA algo.

c. First Rsa algo is used &then encrypted with the session key.

29-What is dirty read?

a. Transaction reexecutes and gives diff. Results from the original execution

b. Read is done when the transaction is not yet committed

30-What is coupling ?

a. It tells the strength of interconnection between two program units.

b. It tells the strength of interconnection between twtrength of
interconnection between two program units.

b. It tells the strength of interconnection between wwwtrength
of interconnection between two program units.

b. It tells the strength of interconnection between wwwo program units and one program unit

31-Any n/w on the computer can have only

a. one domain &one IP

b. more than one domain & more than one Ip

c. one domain and more than one IP

d. more than one domain & one IP

32-Which one does not have file descriptor ?

a. process

b. keyboard

c. pipe

d. socket

33-What does CONNECT BY means

a.connect to a different databaser for retreival

b.arrange in tree ordered structure

34-In two phase commit protocol, why log is used during transmission &reception ?

a. To retrieve the status in case of crash

35-In which algo. Waiting time is minimun?

Ans, SJF

36-How many address bits are there in Ipv6

ans. 128 bits

37-During run time heap is managed by

a. a user process in kernel mode

b. A system process manages heap for all the processes

c. A system process for each process

d. A user process in user mode

38-In which of following search is efficient?

a. height balanced tree

b. Weight balanced tree

c. Binary tree

39.A ques. on resource relocation, sharing (I don' t remember more
than this regarding thisques.)

40-some ques. options were sth like

a. transparency control

b. Migration control

c. Concurrency control

41-X:In DFD, input is converted into output by passing through various functional units

Y:DFD cannot be used in object oriented design
a. both X& y are correct
b. both X & Y are incorrect
c. X correct, Y incorrect
d. Xincorrect, Y correct
42-Where regression testing is used ?
a. Dynamic analysers
b. Loaders
43-For Java interfaces , what is true ?
a. Functions declarations are not given'
b. Variables are not declared
c. Instance variables are not used
44-In a linked list, we can delete a node in order of
a. 1
b. n
c. n ^ 2
45-If there are N people and we have to do symmetric & asymmetric cryptography, how many keys would
be used in these cases respectively?
a. N & N ^ 2 (probably ans)
b. N ^ 2 & N
c. N & N
d. N ^ 2 & N ^2
46-The protected element of a class can' t be accessed by
a. member functions of the same class
b. member functions of the derived class
c. member functions of any other class in the same program (Ans.)
47-NFS uses same file structure asunix
48-To solve an expression which of following trees will you use ?
a. postfix
b. infix

> Here are some questions of Hughes software system computer part:-
>
> Q. 1 void x(char* a)
> {
> (a[0])?x(a+1):1;
> printf("%c",*(a+0));
> return 1;
> ....;
> }
> Input string ' a' is assignedAaBbCc , what is the output?
> Ans.-cCbBaA
>
> Q2 a question on digital gatesANS is OR gate.
>
> Q3 what is the binary representation of 41.6785
>
> Q4 if the precondition for a subroutine does not hold then

> 1.postcondition does not hold
> 2.postcondition may or may not hold
> 3. ?
> 4. ?
> Q5. In java
> 1. java strings are mutable. And some other options on java strings
>
>
> Q6. Void f(char *p)
> {
> p = (char*)malloc(6);
> strcpy(p,"hello");
> }
> void main( )
> {
> char *p = "BYE";
> f(p);
> printf("%s",p);
> }
> ANS BYE
> Q7. A question on write through and write back algo.
> Q8. What is concerned with transport layer.
> Ans PORT.
> Q9. A server can work with ip and ipx protocol.how the server will
> determine to which protocol the incoming packet coresponds .
> Q10. For which purpose dhcp is used ANS ip address
> Q11 global vaariable defined as ststic will serve the purpose of ---
> Q12 Question on NFS ANS It uses the same semantics as unix for
> file system
> Q13. Program counter is incremented typically in which uses ANS fetch
> Q14 NO of NULL pointers in a tree with n leaf nodes ANS N+1
> Q15.thread take less time than process context Why? Ans. Address space is
> same.
> Q.16 Which algo is best for sorting 10 elements?
> Ans. 1> binary tree 2> selection 3> bubble 4> none
> Q.17 a question on ICV(networking)
> a) When A sends an ICV and message, B computes ICV , checks It with given
> ICV,and decodes Message
> b) Similar other
> Q.18 When server A sends a time request to server B, (time
> synchronization), and response becomes past, What does A do?
> a) resets its own clock
> b) resends time request again
>
> Q.19 in public key encryption what does A do such that It is not visible
> to others?
> a) A uses public key part of A
> b) A uses private key part of A
> c) A uses public key part of B
> d) A uses private key part of B
> Q.20 function dependency can be described as:
> Q.21 q. on findind cyclometric complexity of the given program
> 1> 7 2>5 3> 4 4> 0

> Q.22 Codd' s rule related to database
> Q.23 path testing comes under
> A) white box
> B) black box
> Q.24 when an ip address is not in the computeradresss resolution file
> what does It do with that packet
> a)Ignores It
> c) sends It to default gateway
> d) sends It to ethernet server
> Q.25 execution divided in different stages then this is called ANS.
> Pipelining
> Q.26 in C the macros are
> ANS. converted in to inline code during preprocessing
> Q.27 X: verification means doing the right things
> Y: validation means doing things right
> a) both true
> b) both false
> c) one true one correct
> Q.28 void insert (key, r)
> Keytype key, data
> {
> if (n>=max)
> ERROR
> Else
> R[n++].key=k;
> Which is best?
> 1> sequential search
> Q.29 which is best for associative list searching?
> 1) single linked list
> 2) doubly linked list
> 3) hash table
> Q.30 A question based on SQL ?
> Q.31 which is not necessary condition for deadlock?
> 1> mutual exclusion
> 2> no preemption
> 3> is ANS.
> 4> Circular wait

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>From Venky...
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questions.
==> 1. a processor has two level cache.Their access time (level1
and level2) is 100ns and 300ns respect.Memeory access time is 1000ns$
==> ans is 140 (b)
==> 2.diskless server uses
==> a rarp
==> b arp
==> c ftp
==> d.telnet
==> ans rarp

==> 3.which one of them is not a client server
==> e-mail
==> telephone
==> webserver
==> and one more
==> ans is e-mail or telephone.
==> 4.Which one is used to represent operations
==> infix
==> postfix
==> binarytree
==> and one more
==> ans binary tree
==> 5.one qustion was on private key and public key.The quest. was
if a wants to send a message to b that no one other that b should $
==> A private key
==> A public key
==> B private key
==> B public key
==> 6.compliers maintain
==> ans is symbol table
==>

/+++++++++++++++++++
>From Diwakar...
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1) what a java interface not have ?
ans - instance variables
2) what is done with java code on a web-page
ans - downloaded and executed on ur pc
3) what is the order of deleting a node from a linked list given a ptr
to it
ans O(n) (since u have to traverse the list to reach the prev.
node)
3) what is RSA
4) how can A send a message to B so that B knows its from A
ans A uses his private key so that B can use A's public key
5) what is the best sort in worst case
ans heap sort
6) what is the given sorting
ans selection (check it)
7) what can access protected memebers of a class
ans other classes of that program
8) what protocol is used by a machine to map an ip to hardware address
ans arp
9) what is the size of ipv6
ans 128 bits
10) what protocol has ping
ans icmp
11) how many keys are needed in symmetric and asymmetric crptography?
ans - i dont know
12) one on a right threaded tree
13) very easy k-map

ans i think its b)
14) very easy ckt
ans choice which has option : a&c are equivalent
15) what in unix doesnt have a fd
ans process (this was the firstques).

Regarding Hughes

paper they conducted two tests. Both were technical(no aptitude test).
First one was compulsory for everybody. In second one could opt for
electronics or computers. In all i suppose there were 50 questions.
I sent a request to my classmates to send me questions whatevery they
could recall. Till now only one person has responded. I am sending those
questions to you.

And just before interview you were supposed to fill up a performa which
they call Behavioural Test. This was to check you interpersonal skills and
socialising capabilities. Questions like - would you like to be elected
leaders of organising committees, do you like peoply express their agonies
to you, do you wish people be close to you type questions were repeated in
one and the other form.

Interview was technical as well as personal. CGPA did count - it seems.
They selected 8 people from here. BTW what's your current CGPA and what's
the strength of your class. Do they come for B.Tech and M.Tech separatel
as the case here is or it's all at once.

Questions :

1.If a precondition of a sub routine fails then
a. post condition fails as well
b. Post condition may fail
c. post condition is declared but now defined.

2. whatz the o/p of the following program

```
char * a= "AabbCc";
void x(char *a)
{
a[0] == 0 ? x(a+1):1;
printf("%c",*a);
return 1;
}
x(a);
```

a. AaBbCc
b. cCbBaA

3. What is DHCP used for?

4. There are 2 protocols IP and IPX are running on top of Ethernet. Suppose a packet addressed to that ethernt card arrives, to which protocol the ethernet sends the packet?

1. It checks the payload of the frame and finds out the protocol type and despatches it to the right protocol

2. It fins out the protocol type that is mentioned in the ethernet frame.

3. despatches to both the protocol

5. What is the use of global static variable in C?

6. In which stage of the compilation the Macro in C are converted into Iline code? (this is not the exact Qn a slight variation of it)

7 In the IP/Ethernet network, a packet with destination address 192.32.65.70 arrives and there is no entry for this address in the routing table of the m/c? what does the m/c do about the packe

a. discards the packet.

b. Brodacasts into the ethernet.

c. sends to default router

8. in Public key Encryption , if A wants to send a encrypted msg to B then A encrypts the message with

a. A's public key

2. A Pvt key

c. B's public key

d. B' Pvt key

9. consider the SQL statement "Create table New as select * from oldtable"

a. the sql stament is a correct one

b. New is reservd word there is an error

c. you can't select anything while creating a table

10. By Codd's defn for RDBMS whih one is not right?

options , I don't rememeber

11. If X and Y are two attriubutes of a relation and 1 and 2 be any two tuples in that relation

Y is fuctionally dpndant on X iff (X->Y)

a. if (x1 == x2) then y1==y2

b. if (x1==y1) then x2 == y2

someother combinations

12.The normalization process

1.reduces the data redundancy

2.It reduces the inconsistency that arises due to the data redundancy

13. ((A nand A) nand (B Nand B)) = ?

a. A+B

The question was not exactly in this form. gates represented pictorilly

14. whtz the purpose of flow control?

1. to control errors
. to control congession the receiving end
3. to sequnce the out of sequence packets

15. Whic is false about Java strings
1. The are Null terminated
2. Set of Chars
3. The Condition checking == and = on a sme pair of strings gives
different results.

16. When a java Applet is downloaded what does it do?
Don' temeber the options
it' s went something like this:
1. checks the magic nubmer

17. Whatz is the Cyclometic complexity of the following code
don' t remember the code exactly

Some more questions...
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1:a machine A wants to set it' s time same as a a machine B
so it sends a packet to B and b sends reply.but the time on packet is over by the time te packet
reached A.A has to
a1:set the time on packet
b2:increment its time slowly so as to reduce deifference
c:send packets repeatedly till it gets a packet with time less tan the current time
d:....

2.which of the following protocols does not find mac address given internet address
a>arp
b.rarp
c....
d...

3.when an java applet get' s downloaded what happens
a.the byte verifier checks the magic number
b...
c...
d...

4.when A wants to send a mesg to B using Public key cryptography he uses
a.A' s public key
b.A' s private key
c.B' s public
d.B' s private

5.how does a string in java differ from that of c/c++
a1.java s