Hughes Technical Paper 1

HUGHES PAPER ON 7th AUGUST 2008

There were two papers one was aptitude (36 questions) and other was technical(20 questions)

1: given an expression tree and asked us to write the in fix of that expression four choices

2: global variables in different files are
a)at compiletime
b) loading time
c) linking time
d)execution time

3)size of(int)
a) always 2 bytes
b) depends on compiler that is being used
c) always 32 bits
d) can't tell

4)which one will over flow given two programs 2
prog 1: prog2:
main() main()
{ {
int fact; int fact=0
long int x; for(i=1;i<=n;i++)
fact=factoral(x); fact=fact*i;
} }
int factorial(long int x)
{

if(x>1) return(x*factorial(x-1);
}
a) program 1;
b) program 2;
c) both 1 &2
d) none
}

5) variables of fuction call are allocated in
a) registers and stack
b) registers and heap
c) stack and heap
d)

6) avg and worst case time of sorted binary tree

7) data structure used for proority queue
a) linked list
b) double linkedd list
c)array
d) tree

8)
```
main(){
char str[5]="hello";
if(str==NULL) printf("string null");
else printf("string not null");
}
```
what is out put of the program?
a) string is null
b) string is not null
c) error in program
d) it executes but p rint nothing

9)there are 0ne 5 pipe line and another 12 pipe line sates are there and flushed time taken to execute five instructions
a) 10,17
b) 9,16
c)25,144
d)

10) for hashing which is best on terms of buckets
a)100
b)50
c)21
d)32
Ans 32

11)
```
void f(int value){
for (i=0;i<16;i++){
if(value &0x8000>>1) printf("1")
else printf("0");
}
}
```
what is printed?
a) bineray value of argument b)bcd value c) hex value d) octal value

12)
```
void f(int *p){
static val=100;
val=&p;
}
main(){
int a=10;
```

```
printf("%d ",a);
f(&a);
printf("%d ",a);
}
```
what will be out put?
a)10,10

13)
```
struck a{
int x;
float y;
char c[10];
}
union b{
int x;
float y;
char c[10];
}
```
which is true?
a) size of(a)!=sizeof(b);
b)
c)
d)

14)
```
# define f(a,b) a+b
#defiune g(c,d) c*d
```
find valueof f(4,g(5,6))
a)26
b)51
c)
d)

15)
find avg access time of cache
a)tc*h+(1-h)*tm
b)tcH+tmH
c)
d) tc is time to access cache tm is time to access when miss occure

16)
```
main()
{
char a[10]="hello";
strcpy(a,'\0');
printf("%s",a);
}
```
out put of the program?
a) string is null b) string is not null c) program error d)

17)
simplyfy k map
1 x x 0
1 x 0 1

18)
```
int f(int a)
{
a=+b;
//some stuff
}
main()
{
x=fn(a);
y=&fn;
```
what are x & y types
a) x is int y is pointer to afunction which takes integer value

19)
```
char a[5][15];
int b[5][15];
```
address of a 0x1000 and b is 0x2000 find address of a[3][4] and b[3][4]
assume char is 8 bits and int is 32 bits
a) b) c) d)

There are 20 questions all in techinical paper and 36 questions in appititude test in appititude thay have given all diagrams and asked to find what comes next thay are quite easy and i hope if u practice r.s aggraval u can do it easily for tecnical thay have given 1 hr for 20 questions and for not technical thay ha ve given only 40 min and 36 questions,

This is the paper i have right now:
1.
```
main()
{
fork();
fork();
fork();
printf("\n hello");
}
```
How many times print command is executed?

2.
```
main()
{
int i,*j;
i=5;
j=&i;
printf("\ni= %d",i);
f(j);
printf("\n i= %d",i);
}
```

```
void f(int*j)
{
int k=10;
j= &k;
}
```
output is
a 5 10
b 10 5
c 5 5
d none

3. some question on pipeline like you have to findout the total time by which execution is completed for a pipeline of 5 stages.

4.
```
main()
{
int *s = "\0";

if(strcmp(s,NULL)== 0)
printf("\n s is null")p
else
printf("\n s is not null");
}
```

5. some syntax which returns a pointer to function

6. size of integer is
a. 2 bytes
b 4 bytes
c. machine dependant
d compiler dependent.

7.max and avg. height of sorted binary tree
a. logn n
b n logn

8. some question. like the number was shifted everytime by one and bitwise and with 10000000. one was supposed to find what the code was doing. I feel the answer was most probably finding decimal value.

9. int a[5][4]
int is 2 bytes base address for array is 4000(Hexa)
what will be addr for a[3][4]?
int is 4 bytes same question.

10. implementation of priority queue
a. tree

b linked list
c doubly linked list.