

# HP Placement Paper 5

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HP paper pattern:

The paper is of 3 sections.

computer concepts -40

aptitude -20

c -20

note that for c , we must follow compiler under unix

computer concepts: os,unix,networks,data structures,computer organization, digital logic design  
operating systems:

1)which of the following is not associated with operating systems

a)swapper b)device drivers c)file system d)process mgmt

2)what is the size of virtual memory that must be associated

a)must be same as physical memory b)must be > physical memory

c)can be of any size d)it must be small enough to allocate process

3)which of following is true

a)time sharing is also multi programming

b) multi programming is also time sharing

4)global variables are stored at

a)heap b)stack c)data d)code

computer organization:

1)32 registers are there.an instruction can hold upto 3 registers . the opcode is of 4 bits.  
what is minimum size of instruction.

ans:the minimum size of instruction has nothing to do with number of registers

2) some bit on pipelining

3)some bit related to SIMD,MIMD,MISD,SISID

4)minimum no of nand gates require to implement xor gate

ans : 4 gates(check out)

unix:

1)two way communication is possible by means of means of which of the following

ans:unix\_socket

2)wc -l x>x prints out

ans:wc command prints 0

3)the background process that continuously run

ans:daemon process

networks:

1)fragmented packet is reunited at

a)destination b)at next gateway c)at highest MTU gateway d)at the next router

2)the following address 93.58.5.0

a)class A b) class B c) class C d)class D

3)network to host protocol is

ans:RARP

data structures:

1)given a doubly linked list .you are given with a node n and a pointer p associated with it. what are the operations that to be performed to delete that node.

2)swapping the elements of left child of a tree with that of right child .

```
revswap(node*)
{
node* tree;
if(tree!=null)
swap(tree->left,tree->right)
revswap(tree->left);
revswap(tree->right);
}
```

if given tree is

```
1
2 3
4 5 6 7
```

what is the output for about function applied

ans:

```
1
3 2
7 6 5 4
```

3) $t(n)=4+t(n/2)$  , $t(0)=1$ . what is the complexity

4)in hashing each element can be found with complexity of

ans: 1

5)In a program all the addresses that are to be binded to the caller function are done by

a)compiler b) linker c) loader d) run time allocator

6)  $s \rightarrow v[\text{integer}]$

interger  $\rightarrow$  interger, interger/termial

ans: a[2,3,5]

7)char 1 byte , short of 2 bytes , integer of 4 byte,

```
stuct
{
char a;
char b;
int a[2];
short d;
int e;
char i;
} name;
sizeof(name) ans:16
```

note: consider c compiler unde unix for all c questions

c:

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1)main()

```
{
int i=1;
swith(i)
{
i++;
case 1: printf("case1");
break;
case 2: printf("case 2");
break;
default: printf("default");
}
```

ans: when we compile we get warning that unreachable code and if we execute we get "case 1"

will be printed.

- 2) questions related to fundamental pointers
- 3) some question on `const char*p` , `char* const p`;

Interview Details:

I have gone through 3 interviews, two technical and one HR. The first is on project, OS, UNIX, networks, micro processor, C, software engineering. The second is on micro processor, C, software engineering and some general HR is just for formal to give offer letter.

first interview

first question is as usual, tell me about yourself. They observe your expressions and way of your delivery and your confidence. Friends be confident while you are telling, my suggestion is prepare beforehand on paper and practice yourself before mirror.

Then they ask about your project. They sometimes go in detail and ask you, while doing your project, in which areas you feel tough and how would you overcome yourself. They made me to write some important functions related to my project and I have been explained their prototypes. Be thorough in your project.

In my project socket programming is there and they asked me in depth in inter process communications like semaphores, shared memory. I am unable to answer most of questions.

the questions I remembered are ,

which is fastest ipc and why.

semaphores. for reason please go through some books like UNIX system programming by batch.

a program is given with 100 lines of code and another program also with 100 lines of code, both have to be executed and first program with 50 lines first then second has to be started and after second finishes its 50 lines first process has to be started. which inter process communication you use?

ans: semaphore with wait and signal operations

some questions on operating systems like CPU scheduling, what are types of scheduling in priority scheduling, how can we increase priority of a process

ans: using nice command in UNIX we can

coming to networks

TCP/IP reference model they asked me then at which layer which device would be there.

ans: internet layer router

transport layer host host to network layer switches, repeaters.

then they asked me where would be bridges I said they are on data link layer and are part of host to network layer.

then question is, is bridge software or hardware I said of both

then question is, can we have bridge with only software then I said, I am not sure, but nowadays bridges are almost absent and routers are doing the functionality of them.

then they asked me some questions on IP addressing

size of IPv4 address 4 bytes

sizeof IPv6 address 16 bytes

size of MAC address 48 bit

then they shifted to C and questions are below

what happens if malloc fails to allocate memory would program continue or abort

ans: I tell we can check its return value by malloc, if it fails returns null and we can do our required action.

//program on sizeof operator

```
void main()
```

```
{
```

```
char *s[10]={"welcome","to","india"};
```

```
printf("%d",sizeof(s));
```

```
}
```

ans: 10\*sizeof(char\*)

it is 10\*4=40 under UNIX

it is  $10*2=20$  under turbo c++ compiler

```
//program that analyses about constant
```

```
void main()
{
const int i=10;
int *p;
p=&i;
(*p)++;
printf("\n %d",i);
return;
}
```

would it execute

ans: it is going to be and we get 11.

some more questions on c , related to linking , preprocessor like what is difference between function call and macro

then some programs like strcpy , strlen , strcmp etc.

then they shifted to micro processor

i told them i only know 8086 .

then questions are

8086 is how many bit micro processor and why it is called so how many address lines are there how would you generate 20bit address with 16 bit registers available.

then they shifted to software testing

types of testing unit,black box, white box, regression etc linear life cycle model and quality assurance etc

Then asked me would you like to pose any questions my side questions are what is my performance level what are the skills i have to improve etc

then they asked me

- 1)where would you, want to be stand after 5 years, what are you future plans
- 2)if you wouldn't like the job designation we are giving to you , what would you do
- 3)why we have to hire you

what are the different designations in software industry,which position you opt for and why did you know six sigma rules , what they for, can you tell them

there ended first interview

second interview

second interview is by higher officials, by manager to me again first question is tell me about yourself then some questions on c and a program on c, string comparison then questions on micro processor in depth then i told sir, micro processor is in 2nd year of my b.tech, so i forgotten most of things.hen some general questions on software engineering like , how would you estimate the quality of a software etc.

then he came to my hobbies

i told 2 hobbies

then question is , what would you do , if work pressure is more and you have to give up one of your hobbies and which hobby would you give up.

the manager closely observed my feelings and expressions and way of my delivery he mainly concentrated on my attitude and psychology.

then i went to third interview which is hr and formal

Third interview (hr)

again first question is tell me about yourself

then how would you applied to hp would have any refernce and how would you know that person in what positon would you want to see yourself afer 5 years what is your future plan , would you have any interest in higher studies. etc