Questions from paging were asked..  
  
1. 8085 architecture:  
  
2. Memory space depends on  
  
3. Which is context free language?  
  
4. Hit ratio calculation in OS?  
  
5. 2 frames  
  
6. what are the two pages in the frames when replacement method is used?  
  
7. What is Zombie Process?

Questions on loops in C, Data structures and RDBMS were asked.  
  
1. which is better? 1st or 2nd or 3rd normal form or Boyce codd normal form?  
  
2. which is not a command in sql? drop, delete, create, insert.?  
  
3. Class A  
{  
fn to print âAâ;  
}  
Class B {virtual fn to print âBâ }  
Class C {fn to print âCâ}  
  
a ptr object is created for class C, what will be printed? just check out that virtual fns concept in C++  
  
4. Efficiency of sorting bubble, merge & memory efficiency for both best & worst case?  
  
5. Which is memory inefficient? Quick, merge, bubble.  
  
6. Worst case for merge sorting? n log n, n2, n-1  
  
7. which is correct or which will swap nos.. I think this is the qns..one of the choices were.:  
a^=b^=a^=b (in C)  
  
8. i= 20;  
j= 50;  
printf(â%dâ, sizeof(i+j));  
  
9. which takes less time to execute.? ordinary functions or recursive funs.I think its recursive since stack winding and unwinding is there.  
  
10.how much memory will be allocated to this union:  
union a  
{  
char b;  
int no:2; (bit field)  
}  
  
11. what is the argc value?  
C:\ sample.exe val1 val2 val3  
ans: 4  
  
12. one qn about ptr to funciton :  
how will a ptr to a ptr to a fun will be declared  
void \*(\*ptr[]));  
void \*ptr[];  
void (\*\*ptr[]);

1. main()  
{  
if(a=b=0)  
printf("Hello");  
else  
printf("World");  
}  
what is o/p of above program ?  
  
2. quick sort time complexity is better than merge sort complexity in one case ?. what is that case ?  
  
3. A queastion on signal catch. Given set of signals , which are u cannot catch ?  
answer is SIGSTP,SIGKILL  
  
4. what is critical section ?  
ans is the code where shared resources is accesed.  
  
5. if (cond1)  
f()  
else  
if ( cond2)  
g()  
if cond1 is true 25 % and cond2 is true 75 % . If above program executes 10000 times how many times f() and g() exectes ?.  
ans is f() is 2500 and g is around 5600 ( please check this)  
  
6. sample code is given ( which is nothing but bubble sort )  
and he asked 3 questions on this with some data set .  
hint ( to get ans) : please check if condition properly and write down answer  
  
7.qustion on broadcasting addr .he is given question to get easily confusion  
.ans to that is 255.255.255.255  
  
8. one question in C++ public,private inheritance .  
class A  
{  
private : f()  
}  
class B  
{ public : f()  
}  
class c: public A,B  
{  
g() { f()}  
}  
which f() is invoked ?.  
ans is class B f().  
  
9.one question on ARP .  
On reboot which one is check whether is IP adddr is duplicated or not ?  
( question is something like this )  
ans is grattitu ARP  
  
10 . A question on virtual function.  
  
class A  
{  
public :  
sum() { print ( "A");  
}  
  
class B  
{  
public :  
virtual sum() { print ( "B");  
}  
class c : public A,B  
{  
public :  
sum() { print ( "C");  
}  
main()  
{  
A \*a;  
B \*b;  
C c;  
a=&c  
a->sum;  
b=&c;  
b->sum;  
c.sum();  
}  
ans : ACC  
  
11. One probelm is given on LFU page replacement policy .( 2 frames sizes memory and given page references . At the end what are pages in main page table ?.)  
ans is 14  
  
12 . One question on implementing Hardware Synchronization.  
( ans is swap)  
  
13. One question on semaphores.  
  
14. one question on Regular expression  
  
15. Given set of languages and queastion is find out CFG in those.  
  
16. Productions are given in terms of S A B and string is also given aaaaa and he asked production sequence .  
  
17 . which of the following doesnpt creat process .  
( four commands are given ls , od ..)  
The microcomputer, Intel MCS-80 is based on the widely used Intel.

A. 8080 microprocessor  
B. 8085 microprocessor  
C. 8086 microprocessor  
D. 8082 microprocessor

Answer :  A

 In a microprocessor the clock signal is

A. Is always generated internally  
B. Is always supplied externally  
C. May be generated internally or supplied externally  
D. Is mostly supplied externally

Answer: C

Which of the following identifiers is invalid in Pascal?

A. BETA  
B. MAX 40  
C. 2ND  
D. A MAX

Answer :  C

Computers 'Basic input output system' is generally stored in RAM chips.

A. True

B. False

Answer : A

In 8085

A. The upper 8 address bits appear on address bus and lower 8 bits on address data bus  
B. The lower 8 address bits appear on address bus and the upper 8 address bits appear on address          data bus  
C. Either upper or lower 8 address bits may appear at address bus  
D. Either upper or lower 8 address bits may appear at address data bus

Answer :  A

The stack is a data storage area in RAM used by certain microprocessor operations.

A. True      
B.  False

Answer : A

1. Technical round (C++/OS)  
   2. Internship work details  
   3. Virtual memory (why we need it and how to implement it)  
   4. Mutex vs semaphores  
   5. Race condition  
   6. Critical section vs mutex  
   7. Thread safe code  
   8. Reentrant function  
   9. Function pointer  
   10. Given a program with multiple threads and asked to put mutex and semaphore to achieve ACID properties for program
2. Technical round (C++/OS)  
   2. Internship work details  
   3. Mutex vs spin lock  
   4. What locks are used in single core system (mutex or spin lock), Ans: Mutex  
   5. Delete a node in linked list and you don’t have the head pointer, you are just given a memory address of node which you should delete.  
   6. Smart pointer  
   7. C++11 features  
   8. Bitset  
   9. Convert a struct into hex string and back to struct. (Use of reinterpret cast with void pointer) 1. Problem solving skills round  
   2. Design a stack in which we should push and pop at both the ends (30 min)  
   Solve the same using Linked List and Arrays.  
   Write test case to verify your code.  
   3. Design autonomous driving car. (30 min)  
   They were checking how deep we can think and consider all the possible use cases and scenarios

COMPUTER ARCHITECTURE QUESTIONS

1. For a single computer processor computer system, what is the purpose of a processor cache and describe its operation?

2. Explain the operation considering a two processor computer system with a cache for each processor.  
What are the main issues associated with multiprocessor caches and how might you solve it?

3. Explain the difference between write through and write back cache.

4. Are you familiar with the term MESI?

5. Are you familiar with the term snooping?

**STATE MACHINE QUESTIONS**

1. Describe a finite state machine that will detect three consecutive coin tosses (of one coin) that results in heads.

2. In what cases do you need to double clock a signal before presenting it to a synchronous state machine?

**SIGNAL LINE QUESTIONS**

1. You have a driver that drives a long signal & connects to an input device. At the input device there is either overshoot,  
undershoot or signal threshold violations, what can be done to correct this problem?

**VALIDATION QUESTIONS:**

What are the total number of lines written in C/C++? What is the most complicated/valuable program written in C/C++?

What compiler was used?

Have you studied busses? What types?

Have you studied pipelining? List the 5 stages of a 5 stage pipeline. Assuming 1 clock per stage, what is the latency of an instruction in a 5 stage machine? What is the throughput of this machine ?

How many bit combinations are there in a byte?

What is the difference between = and == in C?

Are you familiar with VHDL and/or Verilog?

**MEMORY, I/O, CLOCK AND POWER QUESTIONS**

1. 1. What types of CMOS memories have you designed? What were their size? Speed? Configuration Process technology?  
     
   2. What work have you done on full chip Clock and Power distribution? What process technology and budgets were used?  
     
   3. What types of I/O have you designed? What were their size? Speed? Configuration? Voltage requirements?  
     
   Process technology? What package was used and how did you model the package/system?  
   What parasitic effects were considered?  
     
   4. What types of high speed CMOS circuits have you designed?  
     
   5. What transistor level design tools are you proficient with? What types of designs were they used on?  
     
   6. What products have you designed which have entered high volume production?  
   What was your role in the silicon evaluation/product ramp? What tools did you use?  
     
   7. If not into production, how far did you follow the design and why did not you see it into production?