Microcomputers Interview Questions And Answers Guide.

Global Guideline.

Microcomputers Job Interview Preparation Guide.

Question # 1

List the key elements of Microcomputers protocols?

Answer:-

The key elements of protocols are
a. Syntax:
It refers to the structure or format of the data, that is the order in which they are presented.
b. Semantics:
It refers to the meaning of each section of bits.
c. Timing:
Timing refers to two characteristics: When data should be sent and how fast they can be sent.

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Question # 2

What factors that affect the security of the network?

Answer:-

* Unauthorized Access
* Viruses

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Question # 3

Which factors affect the performance of the network?

Answer:-

a) Number of Users
b) Type of transmission medium
c) Hardware
d) Software

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Question # 4

Which factors that affect the reliability of the network?

Answer:-

a) Frequency of failure
b) Recovery time of a network after a failure

Read More Answers.

Question # 5

Define TDM?

Answer:-

TDM is a digital process that can be applied when the data rate capacity of the transmission medium is greater than the data rate required by the sending and receiving devices.

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Question # 6

List the criteria necessary for an effective and efficient network?

Answer:-

* Performance:
It can be measured in many ways, including transmit time and response time. * Reliability:

It is measured by frequency of failure, the time it takes a link to recover from a failure, and the network's robustness.
* Security:
Security issues includes protecting data from unauthorized access and virues.

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Question # 7

Which layer links the network support layers and user support layers?

Answer:-

The Transport layer links the network support layers and user support layers.

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Question # 8

Tell me what are the sub-components of I/O manager in Windows NT?

Answer:-

* Network redirector/ Server
* Cache manager.
* File systems
* Network driver
* Device driver

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Question # 9

Define Belady's Anomaly?

Answer:-

Also called FIFO anomaly. Usually, on increasing the number of frames allocated to a process virtual memory, the process execution is faster, because fewer page faults occur. Sometimes, the reverse happens, i.e., the execution time increases even when more frames are allocated to the process. This is Belady's Anomaly. This is true for certain page reference patterns.

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Question # 10

List the advantages of distributed processing?

Answer:-

* Security/Encapsulation
* Distributed database
* Faster Problem solving
* Security through redundancy
* Collaborative Processing

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Question # 11

Define Synchronous TDM?

Answer:-

In STDM, the multiplexer allocates exactly the same time slot to each device at all times, whether or not a device has anything to transmit.

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Question # 12

What is semantic gap?

Answer:-

Defining a useful channel involves both understanding the applications requirements and recognizing the limitations of the underlying technology. The gap between what applications expects and what the underlying technology can provide is called semantic gap.

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Question # 13

What is Buddy system of memory allocation?

Answer:-

Free memory is maintained in linked lists, each of equal sized blocks. Any such block is of size 2k. When some memory is required by a process, the block size of next higher order is chosen, and broken into two. Note that the two such pieces differ in address only in their kth bit. Such pieces are called buddies. When any used block is freed, the OS checks to see if its buddy is also free. If so, it is rejoined, and put into the original free-block linked-list.

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Question # 14

Tell me what has triggered need for multitasking in PCs?

Answer:-

Increased speed and memory capacity of microprocessors together with the support fir virtual memory and Growth of client server computing.

Microcomputers Interview Questions And Answers

Question # 15

Tell me why did you choose to design the computer around the MOS Technologies 6502 microprocessor?

Answer:-

Because it was there. Because it was new. Because a few of the other members of the Cambridge University Processor Group [CUPG] were going on about it being easier to interface to circuits. I guess I don?t really know precisely why I chose the 6502 ? maybe we just had an affinity!
It cost quite a lot back in 1977/78 when I bought mine ? which was a wonderful white ceramic part with gold (coloured?) legs and lid.

Question # 16

How did Acorn Microcomputer get started?

Answer:-

I had designed something similar for myself, and was in the process of helping Hermann [Hauser] with his ideas for an ?electronic pocket book? (what we might nowadays call a PDA). In the course of showing that my designs for it would work, I showed him my schematics for my own machine and was challenged to build it. So I did? With my own white ceramic 6502, too. That was ?just? the equivalent of the CPU board of the System 1 with LEDs and keyboard (all on the same bit of Veroboard) ? the cassette interface was added later. I think Hermann was overly impressed when it worked first time!

Question # 17

Define FDM?

Answer:-

FDM is an analog technique that can be applied when the bandwidth of a link is greater than the combined bandwidths of the signals to be transmitted.

Question # 18

What is DDks?

Answer:-

DDks are device driver kits, which are equivalent to SDKs for writing device drivers. Windows NT includes DDks.

Question # 19

Tell me was the design based on/derived from an earlier machine? Kim-1, Apple I, etc.?

Answer:-

Not exactly based on anything. Most of its heritage was from an automated cow feeder that I?d designed for a Harrogate company the previous summer (1977). Quite an advanced thing, really ? it had a (waterproof) number pad, big 7 segment LEDs, OS in non-volatile EEPROM, and the trademark 6502. Both were from my own designs for something for myself, and they came from the aether.
The most hair-raising thing was the cow-feeder?s programme. I didn?t own a PROM blower, so I had to write the whole thing by hand and send it off to a company who hand entered it into a machine and sent me back the PROM. That worked first time, too. Mind you, it was even smaller, being a boot loader that allowed the cow-feeder?s EEPROM to be initialised.

Question # 20

List the typical elements of a process image?

Answer:-

User data:
Modifiable part of user space. May include program data, user stack area, and programs that may be modified.
User program:
The instructions to be executed.
System Stack:
Each process has one or more LIFO stacks associated with it. Used to store parameters and calling addresses for procedure and system calls.
Process control Block (PCB):
Info needed by the OS to control processes

Question # 21

Tell me what else do you remember about the Acorn System 1?

Answer:-

Packing them in boxes (upstairs at 4a Market Hill): the whole company would stand around tables (a production square) and put in the right components (me, Hermann, Hermann?s then fianc? Stephen, Chris). We all did pretty much anything: I ended up as Hermann?s secretary before we could afford one!
There used to be problems with answering the phone: one chap would ring up and say ?I have got an Acorn, it does not work? often enough for it to become a legend. We got very tired of kits ? the highlight being a guy who assembled his Atom with glue because he knew that heat (solder) would damage them ? so that coloured the BBC machine a lot.

Question # 22

Tell me why did you use the RAM I/O chip, instead of a UART or something similar, when the machine had separate RAM?

Answer:-

Science of Cambridge used 8154s on its MK14 kit (National SC/MP based) and so they were available when we needed something for the 6502. They were fairly cheap and the extra RAM was a bonus, even though it meant converting from 6502 clock/write to the read strobe/write strobe that they used.

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Question # 23

What is Broadcasting?

Answer:-

If the message is sent to all the m nodes in the network it is called Broadcasting.

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Question # 24

What is Multiccasting?

Answer:-

If the message is sent to some subset of other nodes, it is called Multicasting.

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Question # 25

What is Unicasting?

Answer:-

If the message is sent from a source to a single destination node, it is called Unicasting.

Read More Answers.

Question # 26

List the names of layers which are network support layers?

Answer:-

* Physical Layer
* Data link Layer and
* Network Layers

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Question # 27

Which are the key design issues of a computer Network?

Answer:-

* Connectivity
* Cost-effective Resource Sharing
* Support for common Services
* Performance

Read More Answers.

Question # 28

What is no bugs in the monitor program?

Answer:-

No bugs in the first, smaller, version of the software (256 bytes of code blown into PROM by Nick Toop?s PROM blower). There were a couple of problems with the cassette interface software because I got the order of bits the wrong way round (from the CUTS? standard). But hey, it was only 512 bytes: you can?t make any mistakes in that even when you write it by hand, hand assemble it and hand enter it into the PROM blower! Besides, it could debug itself to a fair extent (given that it basically worked).

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Question # 29

Explain When did you first show it to Hermann Hauser?

Answer:-

During the time it was built! Hermann was very interested in it. It certainly worked before I went back to Yorkshire before the start of the term.

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Question # 30

Is there No bugs in the monitor program?

Answer:-

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Question # 31

What is a microcomputer?

Answer:-

When combined with other integrated circuits that provide storage for data and programs, often on a single semiconductor base to form a chip, the microprocessor becomes the heart of a small computer , or microcomputer.

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Question # 32

You were an undergraduate student at Cambridge then. Explain what were you studying?

Answer:-

Maths, followed by Computer Science.

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Question # 33

Explain Hermann Hauser (from Kings College, Cambridge University) had recently founded Acorn Computers Limited in Cambridge, with Chris Curry, correct?

Answer:-

Actually, that came later. The initial work was done for Hermann?s own company ?Cambridge Processor Unit? (that?s an Austrian?s idea of a joke). Hermann went for the System One and came up somehow with the Acorn name, then Clive and Chris had an argument and Chris left Science of Cambridge and joined Hermann at Acorn: the first thing that we worked on with Chris was the Atom.

At the start, CPU had consultancy contracts for fruit machines. Initially these had been SC/MP based, but they got moved to 6502s. I was first approached by Hermann at a CUPG meeting ? he wanted someone who knew about low power technology, since he had this idea for a ?electronic notebook?. I designed an anti-theft device for the fruit machines (piezo lighters [were] being used to knock out electronic devices, so I put in a wideband radio receiver to stop the fruit machine paying out mistakenly: later on the acceptance test for the machine involved it being plugged into the same power line as an arc welder and sparks being struck ? it passed!). After that Hermann wanted to see my designs that might work for the electronic notebook and asked ?will it work?? ?Of course? ?so build it?.

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Question # 34

Explain Why did you use the RAM I/O chip, instead of a UART or something similar, when the machine had separate RAM?

Answer:-

Because Hermann had them around: Science of Cambridge used 8154s on its MK14 kit (National SC/MP based) and so they were available when we needed something for the 6502. They were fairly cheap and the extra RAM was a bonus, even though it meant converting from 6502 clock/write to the read strobe/write strobe that they used.

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Question # 35

Explain When did you build the prototype?

Answer:-

Summer holidays, 1978. Then I went home and drew circuit boards on the dining room table (and floor!) and wrote the manual. All by hand, of course.
Christmas 1978 I must have written System BASIC.

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Question # 36

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Question # 39

Explain When was the last Acorn System x shipped?

Answer:-

We designed the BBC machine using System 3s (I did a lot of character design work with a prototype System 80 column video card) and still had System 4/5 stuff going on in 1982 perhaps then.

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Question # 40

What is the Acorn System 1?

Answer:-

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Question # 41

Explain Who designed the hardware?

Answer:-

Me for the bottom board. Me, Stephen Furber and maybe Kim Spence-Jones for the top board (cassette interface). (Hmmm ? maybe KSJ was a little later ? he certainly did some of the work on the analogue bits of the BBC machine cassette interface.)

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