

Computer systems

Theoretical questions

1. What are the featuring parameters of a desktop computer today?
2. What is the role of the cache in the microprocessor?
3. How can you implement a number using two's complement?
4. What do you know about UTF8 coding? What is it good for?
5. List at least 3 memory types!
6. List some devices from daily life in which there are "computers"!
7. What is the difference between a server and a client computer?
8. List at least 3 operating systems!
9. What is the difference between the ssh and the telnet connection?
10. What kind of services has an operating system got today?
11. What do you mean by shell? Name at least two!
12. What is "alias"? Where did you meet with it?
13. What UNIX file system features can you mention?
14. What type of file systems do you know?
15. What filename conventions do you know in UNIX?
16. What file features do you know in UNIX?
17. Explain the base UNIX permission system!
18. What extended permission do you know in UNIX?
19. What is the goal in UNIX to use process priority?
20. What do you know about "quotation marks" in UNIX?
21. What is the meaning of stdin, stdout?
22. How many filter you need for a pipeline?
23. Tell an example where we can use a regular expression?
24. What is the ASCII code table?
25. What are the environment variables?
26. Give the possible type(s) of a variable content in UNIX!
27. What is command substitution?
28. List the existing operators in UNIX shell!
29. Which shell instruction has got a result value?
30. How is the logical type implemented in UNIX shell?
31. Is it possible to define a function using parameter(s) in UNIX?
32. Are you able to execute (describe how if you say yes) a shell script without execution permission?
33. What is IFS?
34. What kind of tasks can you solve with the help of sed?
35. Describe generally the syntax of a sed command!
36. What is the difference between " and ' in sed?
37. Typify the possibilities of awk!
38. Name the possible command blocks in awk!
39. Can awk be used for solving arithmetical tasks?
40. What is MBR and what is its task?
41. Describe the LINUX_UNIX boot process!
42. Write down at least one UNIX-LINUX management possibility!
43. What kind of network connections do you know?
44. What do you mean by packet-switched network?
45. What is described by OSI model?
46. List network topologies!
47. What is the task of a switch?
48. What is the task of a router?
49. How can you characterize the IPV4 addresses?

50. Where do you meet DNS in informatics?
51. What is DHCP?
52. What kind of server access modes do you know?
53. What is HTTP protocol good for?
54. What happens if there is no index.html file in public_html directory?
55. How can you save a web-directory with password?
56. What do you mean by virtual host?
57. What are the meaning of SSI or CGI permissions in case of web servers?
58. What kind of Windows script writing possibilities do you know? Is there any?
59. How can you "implement" the role of autoexec.bat in PowerShell?
60. How safe script execution is ensured in PowerShell?
61. What are the structures of the PowerShell command?
62. List at least two different variable scopes in PowerShell!
63. How do we redirect the output in PowerShell? Is it possible anyway?
64. Where and for what can dot sourcing be used?
65. What does the possibility of named parameters mean in PowerShell?
66. What is the difference between a microprocessor and a microcontroller?
67. What is the most important feature of a Harvard architecture?
68. What is the floating-point arithmetic used for?
69. What is asymmetric coding?
70. What is the meaning of the binary ftp mode?
71. What is the meaning of ASCII ftp mode?
72. How can you redirect the standard input in PowerShell?
73. How can the "here input" functionality be replaced in PowerShell?
74. What is profile.ps1 file good for? Is there anything equivalent to it in UNIX shell?
75. What do we mean by a PowerShell module?
76. Is the core PowerShell module enough to modify the registry? Why?
77. How do you use command substitution in PowerShell?
78. How do you create a loop in a sed script?
79. What type of files are usually in the /etc directory?
80. Tell an example where the "setuid" bit is useful!
81. What is the aim of using ACL in UNIX_LINUX system?
82. Is there anything in Windows that is adequate to ACL possibility?
83. What is the main difference between analog and digital signals?
84. What is the task of the data, the address and the controller bus?
85. How can you create a filter in UNIX and in PowerShell? Is it possible anyway?
86. What is the main difference between the result of the UNIX ls and the PowerShell Get-ChildItem?
87. On which platform can you use regular expressions? (In Unix, in PowerShell or in both?)
88. What is the special meaning if a filename starts with . in UNIX?
89. When and why are the regular expression groups useful?
90. What is the main difference between the data going through the pipe in UNIX shell and in PowerShell?
91. What tool set do we have to write a script in UNIX and in PowerShell?
92. Give the file extension of a script in UNIX and in PowerShell! Is there any restrictions or you can choose it freely?

93. Is it possible to have a parameter of a filter command? If it is possible then give an example, if not, explain why it is not possible!
94. What is the difference between stdout and stderr? Do they exist in PowerShell too?
95. What is the "problem" with ones' complement
96. How do you redirect the stdin in PowerShell?
97. What is SED good for? What is the most frequent command of it?
98. Can we call a shell script in a SED script? Why?
99. How is it decided what type of script is a script on the UNIX platform?
100. What does it mean when a processor has 10-nanometer technology?
101. What is the difference between a processor being 32 or 64 bit?
102. How do you write an AWK script? Can you at all?
103. What are IoT devices, possibilities? Can we write programs for them?
104. What is the role of the BEGIN and END blocks of AWK?