1. Відповіді на контрольні запитання
   1. Наведіть приклади серверних додатків Linux для сервера баз даних, серверів розсилки повідомлень та файлообмінників.  
      For database server: MySQL, PostgreSQL

For messaging servers: Postfix, Sendmail, Exsm

For file sharing: Samba, vsftpd, ProFTPD

* 1. Порівняйте оболонки Bourne, C, Bourne Again (Bash), the tcsh, Korn shell (Ksh) та zsh.

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| characteristic | Bourne | С | Bourne Again (Bash) | the tcsh | Korn shell (Ksh) | zsh |
| Command Syntax | Simple but limited in functionality | Close to C, but less advanced | Extended, similar to Bourne shell | Similar to csh, but with improvements | Many function, extended syntactic structure | Many functional |
| Scripts and Programming | Little support for scripts and programming | Limited ability to use scripts | Ability to create squeaks with multifunctional capabilities | Improved scripting and programming support, including features and signal management | Advanced scripting, structural design, and error handling | Advanced scripting capabilitie, including asynchronous programming and advanced error handling |
| Change and environment | Ability to use variables, but without functions and other extensions | Support for variables and environments, but less flexible compared to others | Ability to use variables, functions, signal processing | Improved support for variables and environments, allowing greater flexibility | Storing the structure of variables and function, as well as built-in mathematical functions | Advanced features, including auto-completion and aliases |

* 1. Для чого потрібен менеджер пакетів. Які менеджери пакетів ви знаєте у Linux?

The package manager is required for: dependency management, software updates, security, version control. Examples: APT, YUM, DNF.

* 1. Які засоби безпеки використовуються в Linux?

Linux uses a system of file access rights (permissions), which determines who has access to files and directories, and what permissions they have (read, write, execute). This allows you to control user access to various parts of the system. Linux has the ability to use a variety of software and hardware firewalls to control network traffic entering and leaving the system. It can maintain security audit logs, which allows you to monitor the actions of users and the system, identify potential threats and respond to them in a timely manner. Supports various data encryption methods, such as disk encryption (for example, LUKS or dm-crypt tools), that allow you to protect data by storing it encrypted on disk.

* 1. Чому використання віртуалізації зараз стало таким актуальним?

Because more efficient use of resources, cost savings on equipped, improved scalability and flexibility, convenient testing and deployment of new software.

* 1. Як ви розумієте поняття контейнеризації?

is a virtualization methodology that allows you to run and execute software and its dependencies in an isolated environment - a container. Containers isolate the application and its environment from other applications running on the same host, ensuring independence from the execution environment.

* 1. Які переваги/недоліки використання програмного забезпечення з відкритим кодом?

Advantages: free, higher security, improvement by users, independence from manufacturers.

Disadvantages: the complexity of installation and configuration, lack ofthe number of guarantees and support, lack of uniformity.

* 1. \*\*\*Скільки активних віртуальних консолей (терміналів) може бути у процесі роботи Linux по замовчуванню. Як їх викликати та між ними перемикатися? Наведіть приклади?  
     Most Linux distributions have 6 active virtual consoles configured by default. The first virtual console is called by a combination of the keys CTRL + Alt + F1, and up to F6. Example: CTRL + Alt + F4 - call the fourth console.
  2. \*\*\*Яка віртуальна консоль (термінал) виконує функцію графічної оболонки?  
     On Linux, the graphical shell usually runs on a virtual console numbered F7. CTRL + Alt + F7 is called.
  3. \*\*\*Чи можлива реєстрація в системі Linux декілька разів під одним і тим же системним ім’ям? Які переваги це може надати?  
     On Linux, you can register multiple sessions (logins) under the same user name. Advantages: separation of tasks, users can be able to restore the working state, working from different sessions, ease of administration.