 Questions:

1. Installation of VS Code:

   - Describe the steps to download and install Visual Studio Code on Windows 11 operating system. Include any prerequisites that might be needed.

   a)Step 1: Visit the Official Website of the Visual Studio Code using any web browser like Google Chrome, Microsoft Edge.

   b)Step 2: Press the “Download for Windows” button on the website to start the download of the Visual Studio Code Application.

   c)Step 3: When the download finishes, then the Visual Studio Code Icon appears in the downloads folder

   d)Step 4: Click on the Installer icon to start the installation process of the Visual Studio Code.

   e)Step 5: After the Installer opens, it will ask you to accept the terms and conditions of the Visual Studio Code. Click on I accept the agreement and then click the Next button

   f)Step 6: Choose the location data for running the Visual Studio Code. It will then ask you to browse the location. Then click on the Next button.

   g)Step 7: Then it will ask to begin the installation setup. Click on the Install button.

   h)Step 8: After clicking on Install, it will take about 1 minute to install the Visual Studio Code on your device.

   i)Step 9: After the Installation setup for Visual Studio Code is finished, it will show a window like this below. Tick the “Launch Visual Studio Code” checkbox and then click Next.

   j)Step 10: After the previous step, the Visual Studio Code window opens successfully. Now you can create a new file in the Visual Studio Code window and choose a language of yours to begin your programming journey!

2. First-time Setup:

   - After installing VS Code, what initial configurations and settings should be adjusted for an optimal coding environment? Mention any important settings or extensions.

The nitial configulation and setting which should be done is going through setting which consists of two types namely a) User settings - Settings that apply globally to any instance of VS Code you open.

                 b)Workspace settings - Settings stored inside your workspace and only apply when the workspace is opened.

The important Extensions are: a) C/C++ b) Python c)Node js

3. User Interface Overview:

   - Explain the main components of the VS Code user interface. Identify and describe the purpose of the Activity Bar, Side Bar, Editor Group, and Status Bar.

    The following are the main components of VS code user interface:

   a)Activity bar - is a core navigation surface in VS Code. Extensions can contribute View Containers to the Activity Bar that appear as Activity Bar Items. Users can drag the item to other locations like the Panel to customize their layout.

   b)Primary side bar - Contains different views like the Explorer to assist you while working on your project.

   c)Editor groups - This is when You can see these clearly in the Open Editors section at the top of the Explorer view (toggle ... > Open Editors in the Explorer view). You can drag and drop editor groups on the workbench, move individual tabs between groups, and quickly close entire groups (Close All).

   d) Status Bar -Information about the opened project and the files you edit.

4. Command Palette:

   - What is the Command Palette in VS Code, and how can it be accessed? Provide examples of common tasks that can be performed using the Command Palette.

   -The Command Palette provides access to many commands. You can run editor commands, open files, search for symbols, and see a quick outline of a file, all using the same interactive window. Here are a few tips: Ctrl+P enables you to navigate to any file or symbol by typing its name.

   -Ctrl+P enables you to navigate to any file or symbol by typing its name

Ctrl+Tab cycles you through the last set of files opened

Ctrl+Shift+P brings you directly to the editor commands

Ctrl+Shift+O enables you to navigate to a specific symbol in a file

Ctrl+G enables you to navigate to a specific line in a file

5. Extensions in VS Code:

   - Discuss the role of extensions in VS Code. How can users find, install, and manage extensions? Provide examples of essential extensions for web development.

  a)VS Code extensions let you add languages, debuggers, and tools to your installation to support your development workflow. VS Code's rich extensibility model lets extension authors plug directly into the VS Code UI and contribute functionality through the same APIs used by VS Code

  b)You can browse and install extensions from within VS Code. Bring up the Extensions view by clicking on the Extensions icon in the Activity Bar on the side of VS Code or the View: Extensions command

  c)To install an extension, select the Install button. Once the installation is complete, the Install button will change to the Manage gear button.

  d)Examples of extentions are 1. Prettier · 2. JavaScript Booster · 3. ESLint · 4. GitLens · 5. Live Server · 6. CSS Peek.

6. Integrated Terminal:

   - Describe how to open and use the integrated terminal in VS Code. What are the advantages of using the integrated terminal compared to an external terminal?

   -Open VS Code on Windows 11 and navigate to the menu bar at the top. From there, select the "View" option and then click on "Terminal, Once the terminal window appears, you can start using it to run commands and scripts in various languages such as Bash, Python, JavaScript, Java, TypeScript, and more. Whether you're working with APIs, managing GitHub repositories, or executing CLI commands, the integrated terminal in VS Code provides a seamless environment for your development tasks.

   -Advanteges of using the intergrated terminal compared to an external terminal is allows you to execute command-line tasks directly within the editor environment, enhancing your workflow and productivity, customizable environment, strong support for other web technologies.

7. File and Folder Management:

   - Explain how to create, open, and manage files and folders in VS Code. How can users navigate between different files and directories efficiently?

   -The File > Add Folder to Workspace command brings up an Open Folder dialog to select the new folder. Once a root folder is added, the Explorer will show the new folder as a root in the File Explorer. You can right-click on any of the root folders and use the context menu to add or remove folders.

   -Users navigate through a hierarchical file system by using commands like "cd" (change directory) and "ls" (list files) in a command-line interface or by interacting with graphical file managers. They can move up and down the directory tree until they locate the desired files or directories

8. Settings and Preferences:

   - Where can users find and customize settings in VS Code? Provide examples of how to change the theme, font size, and keybindings.

   -Use the Settings editor to review and change VS Code settings. To open the Settings editor, navigate to File > Preferences > Settings. Alternately, open the Settings editor from the Command Palette (Ctrl+Shift+P) with Preferences: Open Settings or use the keyboard shortcut (Ctrl+,).

   -Open the Settings panel by pressing Ctrl+, (Windows/Linux) or Cmd+, (Mac).

    In the search bar, type "font" to filter the font settings.

    Modify the following settings: Editor: Font Family: Set this to the name of the font you want to use (e.g., Fira Code , Source Code Pro ).

9. Debugging in VS Code:

   - Outline the steps to set up and start debugging a simple program in VS Code. What are some key debugging features available in VS Code?

   Debugging that "just works".

   Run a sample Node.js app.

   Use a launch.json configuration file.

   Single file debugging.

   Set a breakpoint.

The following are the Debugging features;

a).program - executable or file to run when launching the debugger

b) args - arguments passed to the program to debug

c) env - environment variables (the value null can be used to "undefine" a variable)

d) envFile - path to dotenv file with environment variables

e) cwd - current working directory for finding dependencies and other files

f) port - port when attaching to a running process

g) stopOnEntry - break immediately when the program launches

h) console - what kind of console to use, for example, internalConsole, integratedTerminal, or externalTermina

10. Using Source Control:

    - How can users integrate Git with VS Code for version control? Describe the process of initializing a repository, making commits, and pushing changes to GitHub.

    -If your workspace is on your local machine, you can enable Git source control by creating a Git repository with the Initialize Repository command. When VS Code doesn't detect an existing Git repository, the Source Control view will give you the options to Initialize Repository or Publish to GitHub.

a) Open Git Bash.

b) Navigate to the root directory of your project.

c) Initialize the local directory as a Git repository. By default, the initial branch is called main.

If you’re using Git 2.28.0 or a later version, you can set the name of the default branch using -b.

git init -b main

If you’re using Git 2.27.1 or an earlier version, you can set the name of the default branch using git symbolic-ref.

git init && git symbolic-ref HEAD refs/heads/main

Add the files in your new local repository. This stages them for the first commit.

$ git add .

d) Adds the files in the local repository and stages them for commit. To unstage a file, use 'git reset HEAD YOUR-FILE'.

Commit the files that you've staged in your local repository.

e) git commit -m "First commit"

# Commits the tracked changes and prepares them to be pushed to a remote repository. To remove this commit and modify the file, use 'git reset --soft HEAD~1' and commit and add the file again.