**Task 3 - Research Question 1**

4.1 i) In procedural content generation (PCG), "noise" refers to random or pseudo-random data used to introduce variability or randomness into generated content. In games, simulations, and other PCG applications, different and surprising outcomes are frequently desired, and this randomness is necessary to provide them.

4.1 ii) Perlin noise is a way to make random patterns that look smooth. For terrain, it's like creating a height map where higher points mean mountains and lower points mean valleys. By tweaking settings like how bumpy or smooth it should be, you can generate different types of terrain, from flat plains to rugged mountains. It's popular because it creates realistic landscapes in games and simulations.

4.1 iii) Based on seed points, Voronoi tessellation partitions space into regions. Every region stands for a distinct sort of landscape, such as forests or mountains. In games and simulations, you can generate a variety of realistic terrain by changing the attributes and seed points of each sector.

4.1 iv) The method of midpoint displacement is used to create a natural-looking terrain. A flat surface is first divided, and the central points are then arbitrarily raised. Repeat these steps to construct realistic landscapes with valleys, mountains, and hills, levelling the topography as necessary.

4.1 v) Grayscale photos called "splat maps" are used to add textures to landscapes. These maps are combined to produce realistic topography with seamless transitions between materials. Each shade of grey represents a distinct texture. They are frequently utilized to give landscapes in games and simulations more realism and visual depth.

**Task 4 - Research Question 2**

5.1 i) Dungeon levels, which are commonly encountered in video games with a fantasy theme, are rooms or parts of a greater underground maze or building. They frequently have chambers, hallways, traps, puzzles, and encounters with enemies, providing obstacles for players to go past while exploring.

5.1 ii) Action-adventure, role-playing, and dungeon crawler games are among the genres that frequently feature dungeon levels. Games with dungeon levels include, for example:

* The action-adventure Legend of Zelda series: These games frequently have dungeon levels with adversaries and puzzles that players must solve to advance.
* Diablo series (action RPG): Players explore randomly generated dungeon levels filled with monsters, loot, and challenges.

5.1 iii)