1. RAL (Role, Ansible, Layer) in Ansible:

Explanation:
The term RAL refers to the "Role, Ansible, Layer" pattern in Ansible. This pattern involves organizing your Ansible codebase into roles, where each role encapsulates specific functionality.

2. Idempotency in Ansible:

Explanation:
Idempotency ensures that applying the same Ansible playbook multiple times yields the same result. This is crucial for maintaining a desired state and preventing unintended changes.

```
- name: Ensure a file exists
  hosts: all
  tasks:
    - name: Create a file if not exists
      file:
        path: "/path/to/file.txt"
        state: touch
```

3. Ohai in Ansible:

Explanation:
Ohai is a tool that collects system configuration information. In Ansible, facts gathered by Ohai are stored in `ansible_facts`, providing detailed information about the target system.

4. Gathering Facts in Ansible:

Explanation:
Ansible gathers facts about remote hosts during playbook execution. The facts are stored in `ansible_facts` and can be used for conditional execution or in tasks.

```
- hosts: all
  gather_facts: true
```

```
tasks:
  - debug:
      var: ansible_facts['os_family']
```

5. Filtering Facts during Gathering:

Example:

```
- hosts: all
  gather_facts: true
  tasks:
    - debug:
        var: ansible_facts
      filter:
        - "ansible_all_ipv4_addresses"
```

6. When to Avoid Gathering Facts:

Explanation:
Avoid gathering facts when the target system has constraints, like limited resources or slow connections. Gathering facts can be resource-intensive.

```
- hosts: all

  gather_facts: false
```

7. Accessing Facts in Tasks:

Example:

```
- hosts: all

  tasks:

    - debug:

        msg: "{{ ansible_facts['os_family'] }}"

    - debug:
```

msg: "{{ ansible_facts.os_family }}"

UseCase for gather_facts:

- hosts: all

  tasks:

  - name: Install web in Red Hat

    package:

      name: "httpd"

      state: present

    when: ansible_facts.os_family == "RedHat" or ansible_facts.os_family == "Centos"

  - name: Install web in Ubuntu

    package:

      name: "apache2"

      state: present

    when: ansible_facts.os_family == "Ubuntu"