Diffrent Agile Approaches and their comparative Analysis :-

Agile Methodologies emphasize flexibility. collaboration and iterative progress. This assignment explores scrum, Kanban, Extreame programming. and comparing their characteristics and applicability.

1. Scrum : Scrum structures work in time boxed sprints with roles like scrum master. product owner and Development team.

    (i) Promotes accountability and collaboration.

    (ii) Deliver shippable increments regularly

    (iii) Requires structure and strict adherence to rituals

2. Kanban : Kanban manges workflows visually with continuous delivery and WIP limits.

    (i) Ideal for unpredictable workfiows.

    (ii) Identifies bottlenecks effectively.

    (iii) Lack of defined rules can create ambig

3. Extreme programing (xp) : xp focuses on technical excellence with practices like pair programm TDD and continuous iteration.

    (i) Encourages high quality. code

    (ii) Adapts well to changes.

(iii) Resources-intensive practices like pair programming.

(iv) Requires customer commitment.

(4) Lean: Lean optimize value delivery by eliminating waste and improving processes.

   (i) Resource efficient and scalable

   (ii) Demands deep understanding for effective use

Comparative Analysis:

Aspect	Scrum	Kanban	XP	Lean
Iteration	time-boxed	Continuous	Short cycles	Continuous
Flexibility	Moderate	High	Moderate	High
Team structure	Defined Roles	Flexible	Collaborative	Flexible
Focus	Incremental	Workflow	Technical rigor	Value delivery
Best for	Predictable work	Dynamic needs	Technical Projects	Large Projects

Conclusion: Scrum is best for structured, iterative work, kanban for flexible workflows, XP for technical rigor and Lean for process optimization. Choosing the right approach depends on project goals and team dynamics.