Waterfall (Cascade) model

The waterfall model was devised in the early days of software development. It gets its name because once a phase is finished; it can't be revisited, just as water always flows naturally downhill, never uphill, so the progress through the phases of conception, initiation, analysis, high–level, low–level design, testing and implementation, and maintenance.
Advantages of waterfall model:

- This model is simple and easy to understand and use.
- In this model phases are processed and completed one at a time.
- The waterfall model works well for smaller projects where requirements are very well understood.

Disadvantages of waterfall model:

- Once an application is in the testing stage, it is very difficult to go back and change something that was not well-thought-out in the concept stage.
- No working software is produced until late during the life cycle.
- High amounts of risk
- Not a good model for complex and object-oriented projects.
- Poor model for long projects.

When to use the waterfall model

- This model is used only when the requirements are very well known, clear and fixed.
- Product definition is stable.
- Technology is understood.
- There are no ambiguous requirements
- Ample resources with required expertise are available freely
- The project is short.

Source: http://istqbexamcertification.com