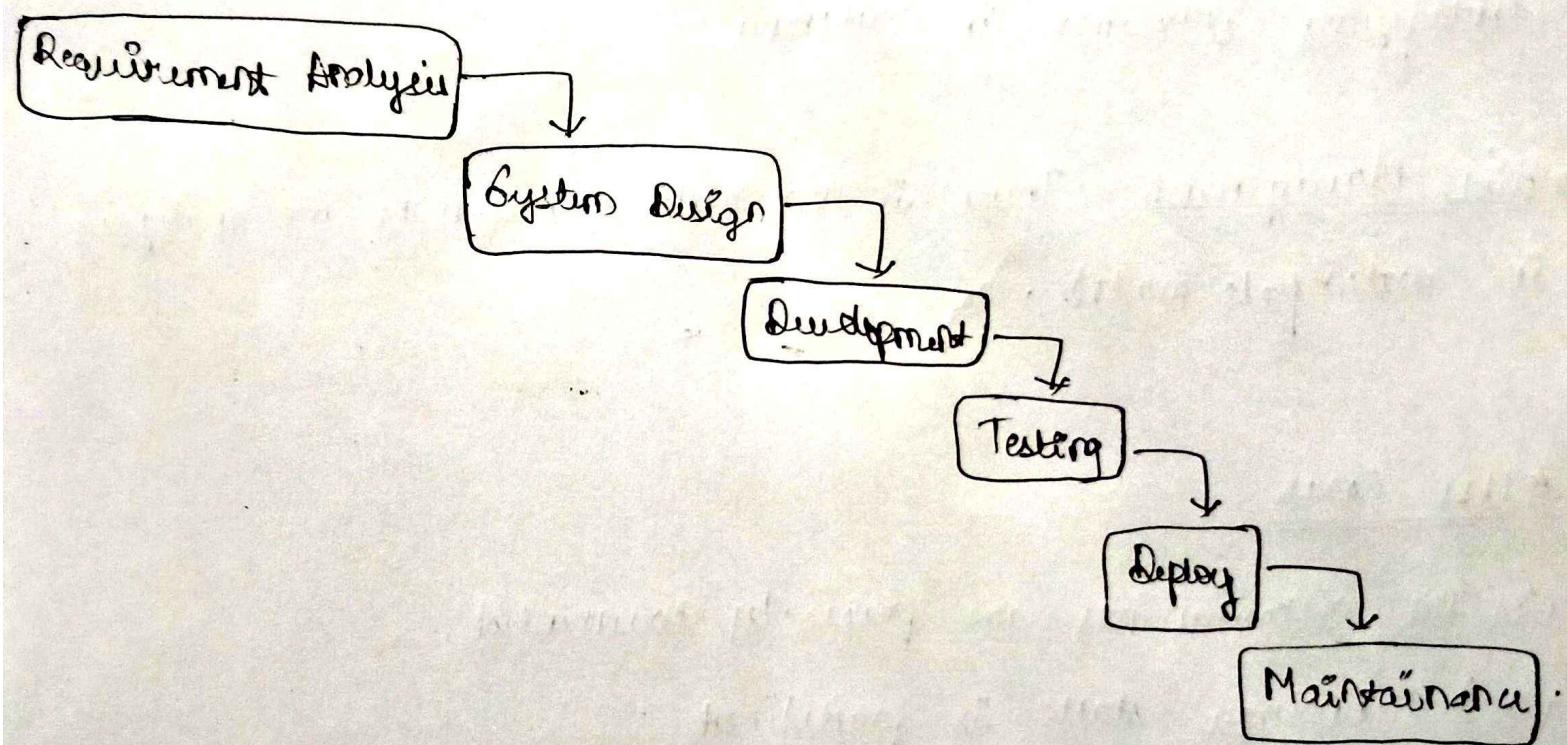


* Ques. 1

* Name of SDLC :: Waterfall SDLC Model.

* Illustration :



* Advantages:

- (i) Simple to understand .
- (ii) Perfect model for small & medium-sized projects .
- (iii) It is the base model & other models are derived from it .
- (iv) Easy to classify & prioritize tasks .

* Disadvantages :-

- (i) No system of feedback.
- (ii) High risk & uncertainty.
- (iii) Inappropriate for long term projects.
- (iv) Hard to measure progress.
- (v) Integration is done at the end so there is no option for identifying problems in advance.

* Risks Management :- There is no risk management or analysis in waterfall model.

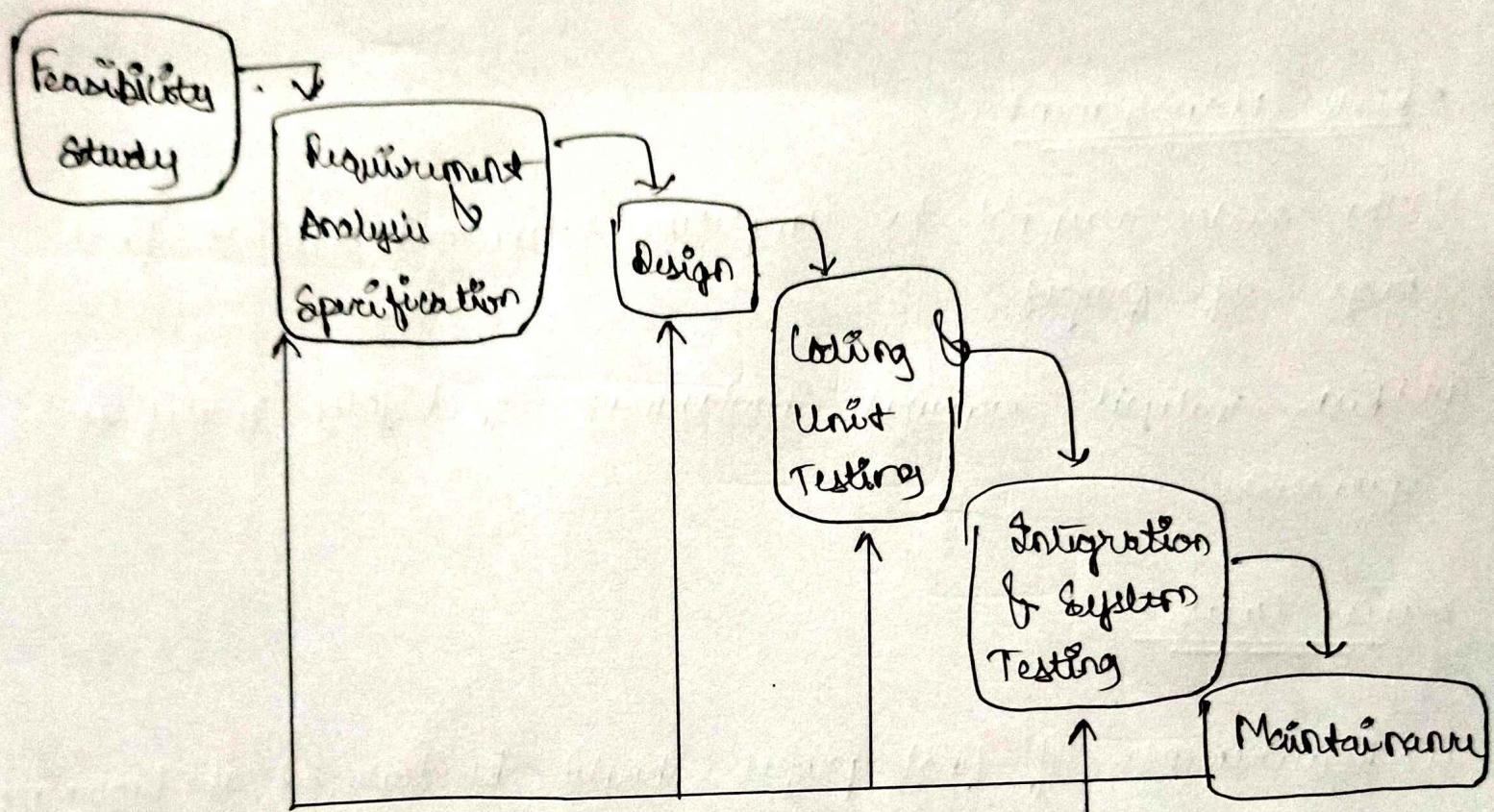
* Use Cases :-

- (i) The requirements are precisely documented.
- (ii) Technology stack is predefined.
- (iii) No ambiguous requirements.
- (iv) Exact product definition.
- (v) Project is relatively small in size.

* Sl No. 2.

* Name of SDLC :- Iterative Waterfall SDLC Model.

* Illustration:-



* Advantages:

- (i) This SDLC model is simple & easy to interpret.
- (ii) Progress is easily measurable.
- (iii) Has phase containment of errors.
- (iv) Has feedback & ability to move back to changes stage where error is detected.
- (v) Flexible to changes.

* Risadvantages:

- (i) No phase overlapping.
- (ii) No parallelism.
- (iii) less customer interaction.
- (iv) Requires more resources than waterfall SDLC model.

* Risk Management:

- (i) The risks may not be completely determined even at final stage of project.
- (ii) Risk analysis requires involvement of highly qualified specialists.

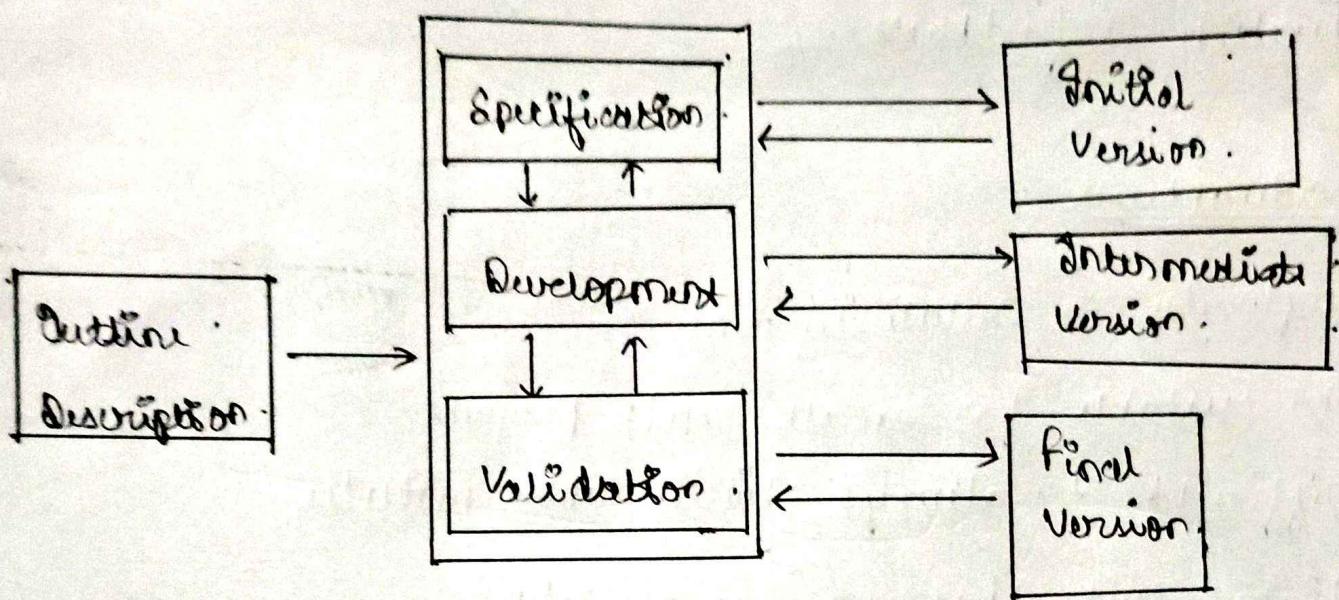
* User Cases:

- (i) Requirements of first project should be clear at the beginning.
- (ii) Middle to large scale projects.
- (iii) Main task is predefined but may change.
- (iv) To certain errors in the phase they were introduced.

* Sl No. 3

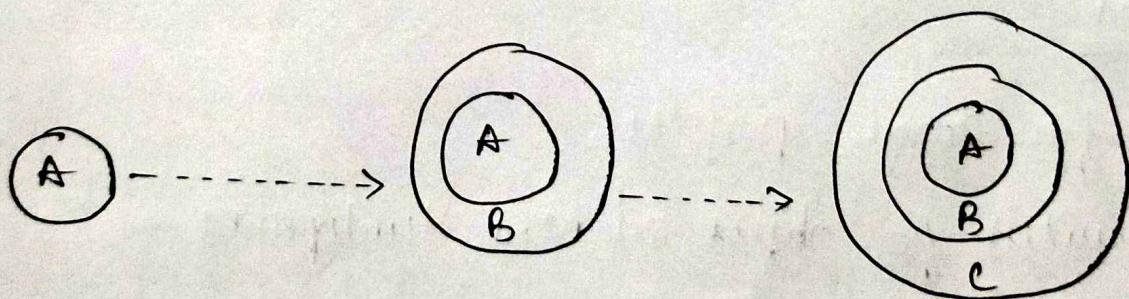
* Name of SDLC: Evolutionary SDLC Model

* Illustration 1:



* Illustration 2:

→ Suppose A, B, C .. are different modules of our project.



evolutionary development →

* Advantages

- (i) Better Risk analysis than waterfall & iterative SDLC model.
- (ii) Supports changing Environment.
- (iii) Better suited for large mission-critical projects.
- (iv) Software is produced early which facilitates customer evaluation & feedback.

* Disadvantages

- (i) Complexity is relatively more.
- (ii) Not suitable for small scale projects.
- (iii) Difficult to always divide into modules.
- (iv) Higher cost than previous models.
- (v) Skilled resources required for risk analysis.

* Risk Management: Better risk management & containing errors.

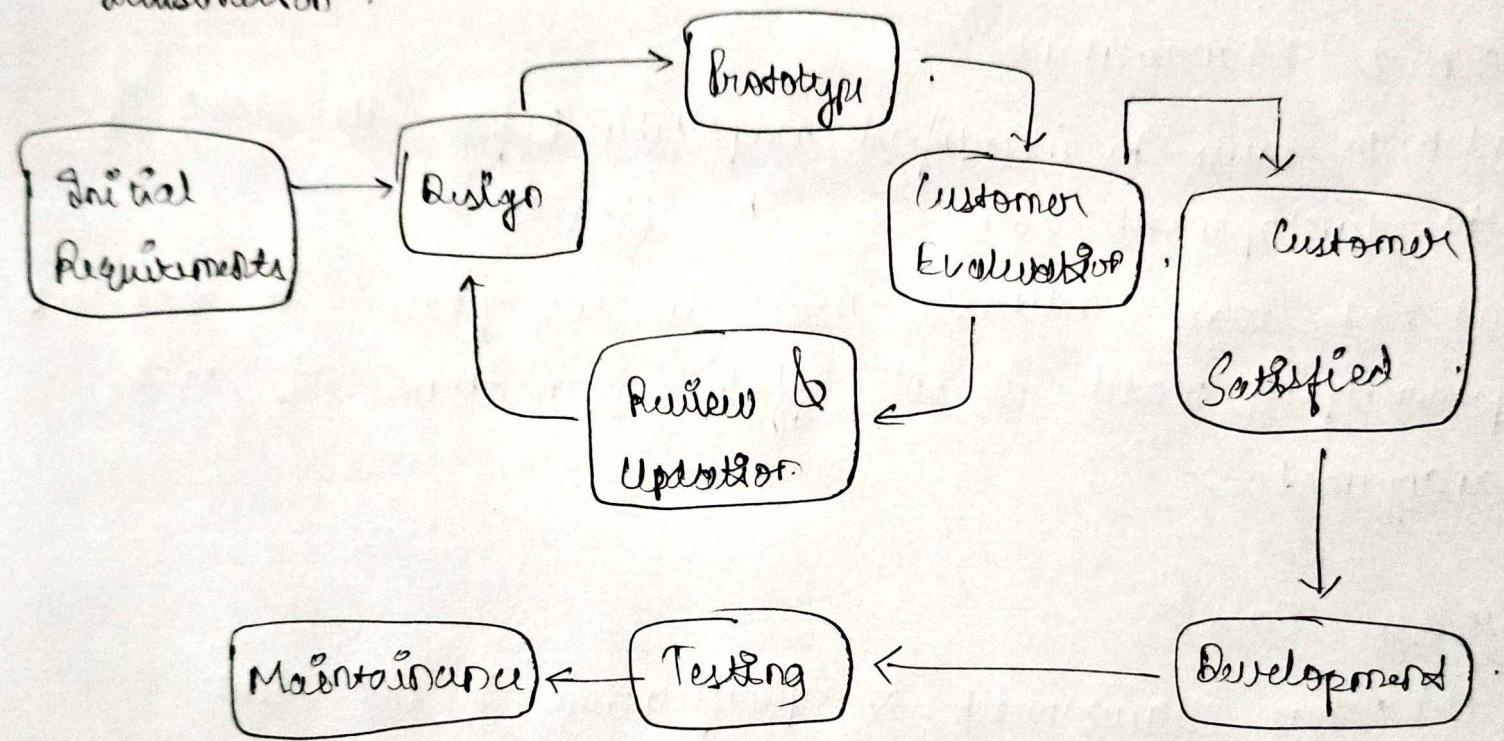
* Use Case

- (i) Useful for large projects.
- (ii) Well suited for object oriented development.
- (iii) Since product is produced in increments, characteristics become clearer & requirements are also made concrete by each increment.

* Sl No. 4

* Name of SDLC : Prototype Model .

* Illustration :



* Advantages

- (i) Reduces risk of incorrect user requirement .
- (ii) Quick decision .
- (iii) Prototype building solidifies customer requirement .
- (iv) Active customer participation .
- (v) Smoother development process because of prototype development at early stage .

* Disadvantages

- (i) Repeated customer interaction waste time & money .
- (ii) Prototypes are unstable / badly implemented .

- (iii) Needs committed customer.
- (iv) Prototyping tools are expensive.
- (v) Consumes more time.

* Risk Management :-

- (i) Risk must be identified completely before the start of the development work of the project.
- (ii) Risk may actually arise in any phase, in that case prototyping model is not effective in terms of risk management.

* Use case :-

- (i) when requirement & specification is not clear.
- (ii) when product or requirements are subjected to changes or update in future.

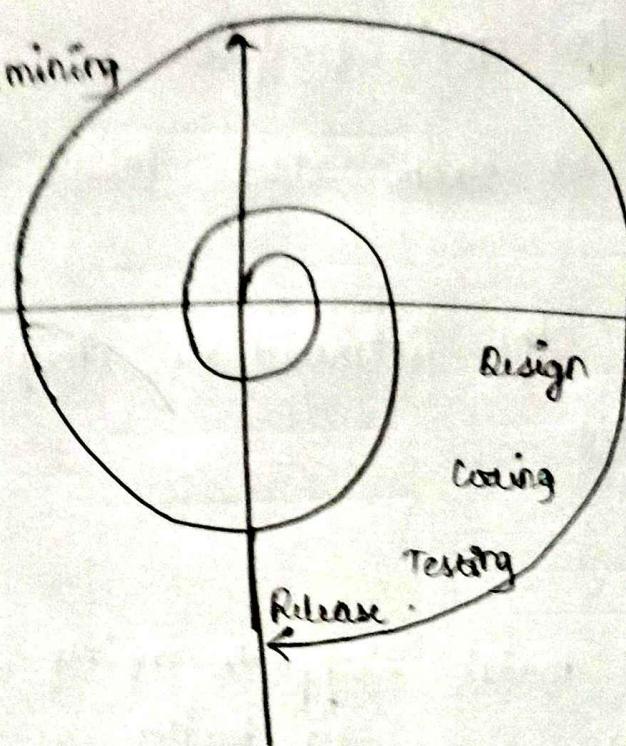
Ans No. 5

* Name of SDLC : Spiral SDLC Model / Meta Model

* Illustration

Planning & Determining
Objectives

At start
next stage



2) Risk Analysis & Solving

3) Develop next version
of product

* Advantages

- (i) life cycle is divided into small parts & if the risk concentration is higher, the phase can be finished earlier to address the risks & threats.
- (ii) the development process is precisely documented yet scalable to change.
- (iii) the model is very flexible at any given stage.
- (iv) since prototypes are produced in each stage user requirements are clear.
- (v) very efficient model for mission-critical projects.

* Disadvantages:-

- (i) This model is quite expensive.
- (ii) The risk control demands involvement of the highly skilled professionals.
- (iii) Not effective for small projects.
- (iv) Risk analysis at each stage takes increasingly more time.
- (v) Big number of the intermediate stages require excessive documentation.

* Risk Management :-

- (i) The spiral SDLC model supports coping up with risks by providing the scope to build a prototype.
- (ii) Since Risk analysis & management is done at phase 2 itself, it provides the next stages development of the least risky & most cost-effective strategy.

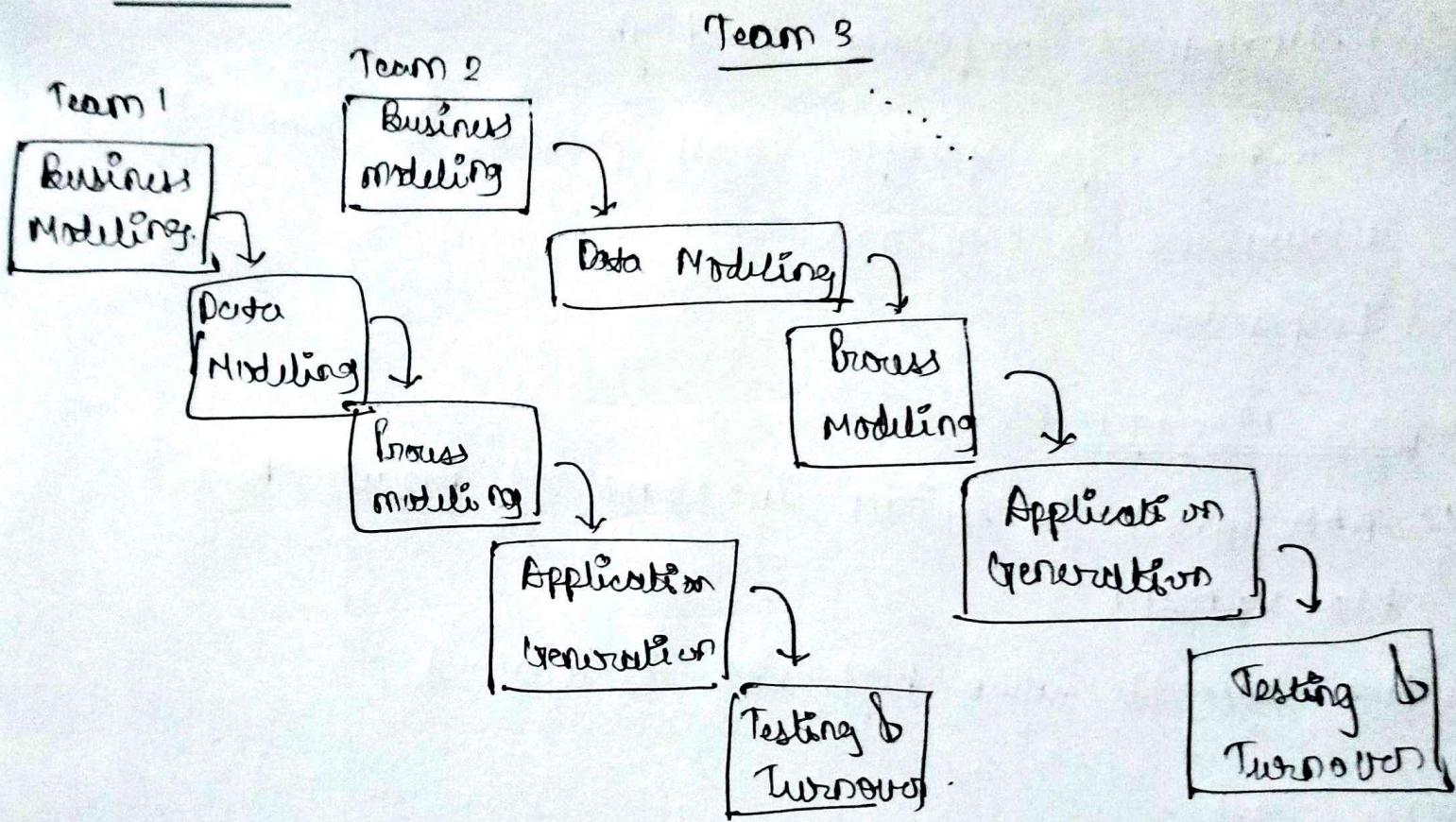
* Use Case :-

- (i) When customer isn't sure about requirements.
- (ii) When there are several changes to be expected across various stages.
- (iii) Projects where risk management is essential.

* Sl No. 6

* Name of SDLC : Rapid Application Development (RAD) SDLC model

* Illustration :-



* Advantages :-

- (i) Changing requirements can be accommodated
- (ii) Progress can be measured.
- (iii) Productivity with fewer people in short time.
- (iv) Reusability of components.
- (v) Encourages Customer Feedback.

* Disadvantages:-

- (i) Technically strong team members are required for identifying business requirements.
- (ii) System modularization is required which is difficult sometimes.
- (iii) Management complexity is high.
- (iv) Suitable for specific small projects \hookrightarrow customer involvement is required.
- (v) Expensive.

* Risk Management :-

- (i) RAD model is limited in terms of Risk Management.
- (ii) Not suitable when high risk is involved.

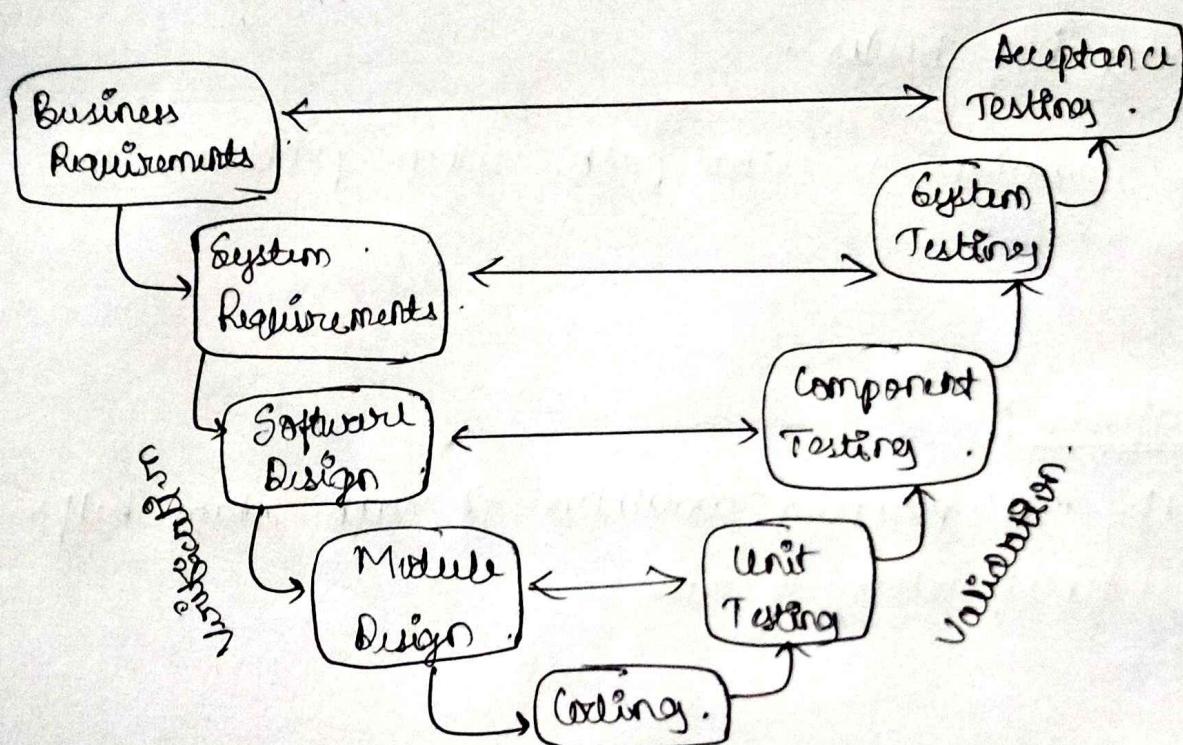
* Use Case :-

- (i) Requirements are well known \hookrightarrow projection to be modularized.
- (ii) When there is sufficient budget to afford that allows the use of automatic code generating tools.

Ques No. 7

* Name of SDLC: V-shaped SDLC model.

* Illustration :-



* Advantages :-

- (i) Every stage of V-shaped model has strict results so it's easy to control.
- (ii) Testing & verification take place in the early stages.
- (iii) Effective for projects where requirements are static & clear.
- (iv) Has a higher chance of success than waterfall.

* Disadvantages :-

- i) there is a lack of flexibility .
- ii) adjusting flexibility is expensive .
- iii) Relatively big Risks .
- iv) Doesn't provide a clear path when problems are encountered .

* Risk Analysis :-

→ In V-model test planning conducted at each stage helps in early identification of risk .

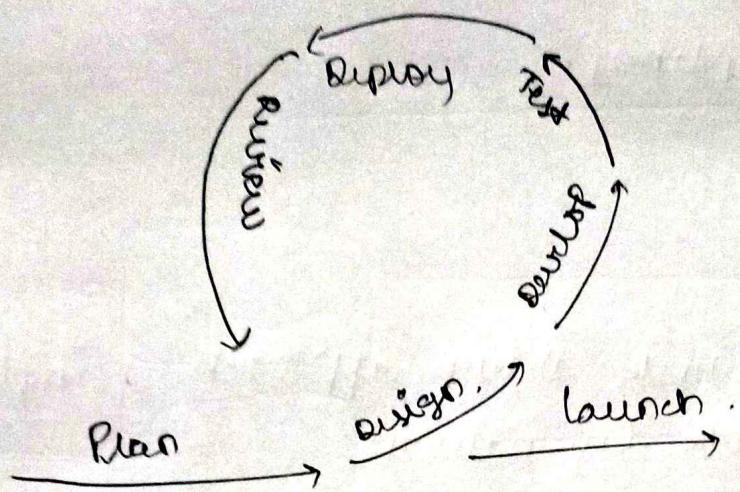
* Use Case :-

- (i) Projects where accurate product testing is required .
- (ii) Projects which are small or mid-sized where requirements are strictly predefined .
- (iii) The engineers of required classification , especially tester are within reach .

* Sl No. 8

* Name of SDLC : Agile SDLC Model

* Illustration of



* Advantages:

- Correctness of functional requirements are implemented into the development process to provide competitiveness.
- Project is divided into short & transparent iterations.
- Risk is minimized thanks to flexible change process.
- Fast release of first product version.
- Lesser cost
- Frequent feedbacks.

* Disadvantages

- Less Documentation due to Agile nature.
- Team should be professional & client oriented.
- New requirements may conflict with existing architecture.
- High individual dependency.

* Risk Management

- Agile is an inherent risk driven approach & implicitly supports risk management by nature.
- Sprints :- Since agile uses short iterations or sprints to build the end product in sections means that risks are handled in each sprint & therefore on a much smaller scale than the whole project.
- Since Agile team regularly meets with project initiator they are able to discuss how closely project is aligning or how much it is deviating. This helps in containment of risks.

* User Case

- User needs change dynamically.
- Requires only initial planning to start the project.
- When rapid deployment of modules is essential.
- Very widely used model.