LAB-1 IT-314(Software Engineering)

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1) **A simple data processing project.**

The model which can be used is **Waterfall**.

Reason – We will use Waterfall Model as we already know all the requirements to process the data and the requirements are fixed and are not altered anywhere. So, Waterfall Model satisfies all the conditions here.

2) **A data entry system for office staff who have never used computers before. The user interface and user-friendliness are extremely important.**

The model which can be used is **Prototype.**

Reason – We will use Prototype Model here the users are completely new to the computer work so they can be considered as novice users also the UI/UX facility has been highlighted here which can be better done by Prototype Model, so here using Prototype Model is more beneficial.

3) **A spreadsheet system that has some basic features and many other desirable.**

The model which can be used is **Incremental.**
Reason – Here, we have been given some basic features and we have to develop other desirable features using this basic features

which can be done through Incremental Model so we would use this model.

4) **A web-based system for a new business where requirements are changing fast and where an in-house development team is available for all aspects of the project.**

   The model which can be used is **Agile.**
   Reason – In this case, we would use Agile Model, as it can be used to change the things more flexibly and rapidly and all updates can be done very fast which is required by the current client so Agile Model can be beneficial here.

5) **A Web-site for an on-line store which has a long list of desired features it wants to add, and it wants a new release with new features to be done very frequently.**

   The model which can be used is **Agile - Scrum.**
   Reason – In this case, we would use Agile - Scrum Model, as we can divide the features into different sprints and each sprint can be immediately completed after the previous sprint and can be done very frequently.

6) **A system to control anti-lock braking in a car.**

   The model which can be used is **Spiral.**
   Reason – In this case, we would use Spiral Model, as here human life is evolved so we cannot take any risk and we have to minimize the risk in our system so we can use Spiral Model because it uses iterative model which minimizes the risk.

7) **A virtual reality system to support software maintenance.**

The model which can be used is **Evolutionary.**
Reason – In this case, we would use Evolutionary Model, as here we have to continuously improve and adapt to the current evolving software maintenance and in this model, it does both iterative and incremental model, so this model would be beneficial.

8) **A university accounting system that replaces an existing system.**

The model which can be used is **Waterfall.**
Reason – In this case, we would use Waterfall Model, as here the university accounting system is already known and all the instructions are clear to be replaced so here Waterfall model can be beneficial.

9) **An interactive system that allows railway passenger to find train times from terminals installed in stations.**

The model which can be used is **Evolutionary Prototyping.**
Reason – In this case, we would use Evolutionary Prototyping Model, as here the users are not well experienced with the UI interface and we can identify the basic functionalities of train times of terminals and the main objective is we have had to identify more and more functionalities and release newer version. So, Incremental model is more beneficial.

10) **Company has asked you to develop software for missile guidance system that can identify a target accurately.**

The model which can be used is **Spiral.**

Reason – In this case, we would use Spiral Model, as here risk assessment is the major part which is to be considered so Spiral model can be more beneficial.

11) When emergency changes have to be made to systems, the system software may have to be modified before changes to the requirements have been approved. Choose a process model for making these modifications that ensures that the requirements documents and the system implementation do not become inconsistent.

The model which can be used is **Agile.**
Reason – In this case, we would use Agile Model, as here we have to make our system in which changes can be updated very frequently and consistently so here Agile Model is more beneficial.

12) Software for ECG machine.

The model which can be used is **Spiral.**

Reason – In this case, we would use Spiral Model, as here high accuracy in some cases is required and it requires great expertise and we have to do tending to zero error as it is the case of human being hence, we can use Spiral Model which ensures much less error as compared to other models.

13) A small scale well understood project (no changes in requirement will be there once decided).

The model which can be used is **Waterfall.**

Reason – In this case, we would use Waterfall Model, as it is best suited for the small-scale projects where the requirements are fully understood and there are minimal changes.