1. a) Kenalpasti fasa dalam Kitaran Hayat Pembangunan Sistem (SDLC).

   Identify the phases in System Development Life Cycle (SDLC).

   (10 markah/*marks*)

1. Planning
   - Plan the objectives, scopes of the system's project.
   - Gives out role for each person in the team
2. Analysis
   - Gather all the information about the requirement needed
   - Test the feasibility of the project
   - Make a report to be presented for gathering sponsors and investors
3. Design
   - Early prototype of the project
   - Include the DFD,FDD, Case Diagram, Context Diagram
4. Implementation
   - Developing the systems and integrate the necessary components
   - Run initial product testing
5. Maintenance
   - Documentation needed to maintain the system and update it
   - Fix bugs, update features, and ensure system's performance

   b) Bincangkan perbezaan kaedah pembangunan perisian berikut:

   Discuss the differences of the following software development methods:

   - *Agile Methodologies*
   - *Extreme Programming (XP)*
   - *Scrum*

   (10 markah/*marks*)

Agile methodologies	Extreme Programming	Scrum
Iterative and incremental, focusing on delivering small piece of product	Frequent releases with short iteration	Divided into sprints for each features
For project with changing requirement where flexibility is crucial	For smaller teams working on a highly technical projects	Effective for teams working on complex project with clear timeline and deliverable
Continuous feedback from customer	Customer involvement during each releases	Customer provide input during sprint reviews and planning

2. MyT ialah aplikasi mudah alih yang sedang digunakan oleh pelajar untuk mengesan perkhidmatan bas di Universiti Malaya (UM). Anda sebagai penganalisis sistem di Bahagian Teknologi Maklumat UM telah ditugaskan untuk mengetuai projek menambah baik aplikasi ini. Berhubung dengan kitaran SDLC, terangkan langkah yang anda perlu ambil untuk menyelesaikan projek ini dan berikan contoh untuk menyokong penerangan anda.

MyT is a mobile application that is being used by students to track bus services at Universiti Malaya (UM). You as a system analyst at UM Information Technology Division have been assigned to lead a project to improve this application. In relation to SDLC cycle, describe the steps that you need to take to complete this project and provide examples to support your description.

(15 markah/*marks*)

1. Planning
   - After identifying the project, as a system's analyst I will create a Baseline Project Report
   - In which I will conduct the feasibility assessment and determining the project cost
   - After that I will distribute the necessary role to each team's member
2. Analysis
   - Gathering requirement for the project. For that I will conduct a group interview and individual interview for the UM students
   - After that I will create a context diagram and data flow diagram for the system
   - This will allow the team to structure the requirement into a diagram for easy understanding.
3. Design
   - After that I will create the Use Case Diagram and Activity Diagram for the system
   - This step is necessary so that it will be easier for the Implementation phase later as it shows all the end users for the system
   - I also will design the User Interface neatly to make it user-friendly for all people that will be using the system
4. Implementation
   - Start to code the systems
   - Run a testing module for the system
   - For example, I will run a code walkthrough, where professionals will be reviewing the code for each module. This will allow us to detect any improvement can be made to the code
5. Maintenance
   - I will be maintaining the system performance by giving out updates
   - I also will document all the process before to allow for an easier maintaining process for future reference

3. Berdasarkan Soalan 2, cadangkan dan terangkan gambar rajah DFD dan *Use Case* untuk aplikasi MyT yang dipertingkatkan ini.

   Based on Question 2, propose and explain DFD and Use Case diagram for this improved MyT application.

   (15 markah/*marks*)

DFD