Year 12 SL Week 1

Read 1.2 System Design Basics pgs. 23 to 40 and then answer questions 1 to 13 referring to these pages.

1) Explain what is meant by the following terms:

   a) Dumb terminal
   b) Thin client
   c) Client
   d) Server
   e) Router
   f) DNS server
   g) Firewall
   h) Client-server network

2) What do we mean by Social and Ethical issues? Give one example of each.

3) What do we mean by the following?

   a) Reliability of an IT system
   b) Integrity of data
   c) Inconsistency of data
   d) Security
   e) Biometrics
   f) Authenticity
   g) Privacy
   h) Anonymity
   i) Intellectual property
   j) Digital divide
   k) Equality of access
   l) Surveillance
   m) Globalisation
   n) Cultural diversity
   o) Multi-factor authentication

4) What are Standards and Protocols and why are they important?

5) Write two advantages and two disadvantages of an IT system.

6) Name three techniques that can be used to gather information during system's analysis.

7) Explain the following terms:

   a) Stakeholder
   b) Structured and unstructured interviews
   c) Restricted (closed) and unrestricted (open) questionnaires
   d) Hawthorne effect

8) Name three organizational capabilities.

9) What does the requirements specification document contain?

10) Mention the three types of data processing.

11) Describe the following graphic techniques used to describe a system or a part of it:

a) System flowchart
b) DFD
c) Structure chart

12) What do we mean by the following terms?

a) Modular design
b) Top-down design
c) Modular language

13) What do we mean by Iterative-Design-Methodology?

14) Write a program by going through the following steps:

a) Create a class called Volumes.

b) Inside this class create a method called volCylinder. This method takes two parameters (i) radius, (ii) height. This method returns the volume, which is calculated by $V = (22/7)*r*r*h$.

c) Create another method called volCone where $V = (1/3)* (22/7)*r*r*h$.

d) Create a third method called volSphere where $V = (4/3)*(22/7)*r*r*r$.

e) Create the main method and write code so that the program displays a menu such that if the user chooses 1 the volume of the cylinder is calculated, 2 for the cone and 3 for the sphere. These are calculated after the user is asked to input the required values. The user is kept being asked to enter her choice. When the user enters 4 it means the user wants to end the program.