PART A: (30 MARKS)

INSTRUCTION: *Answer **ALL** questions.*

1. The architecture is a representation that enables a software engineer to:
   I. Analyze the effectiveness of the design in meeting its stated requirements
   II. Consider architectural alternatives at a stage when making design changes is still relatively easy
   III. Reduce the risks associated with the construction of the software
   IV. Compose individual components into larger architectural blocks.

   A. I, II and III
   B. I, II, and IV
   C. I, III and IV
   D. II, III and IV

2. In Software Engineering, the *Architectural Description Language* (ADL) provide the designer with the ability to:
   I. decompose architectural components
   II. compose individual components into larger architectural blocks
   III. represent interfaces (connection mechanisms) between components.
   IV. represent the component design and implement.

   A. I, II and III
   B. I, II, and IV
   C. I, III and IV
   D. II, III and IV

3. List below are the elements in Design Model **EXCEPT**:

   A. Data elements

B. Architectural elements

C. Interface elements

D. Component elements

4. The architectural model in software design can divide several model except:

   I. Structuring Model

   II. Control Modelling

   III. Centralize Modelling

   IV. Modular decomposition

   A. I, II and III

   B. I, II, and IV

   C. I, III and IV

   D. II, III and IV

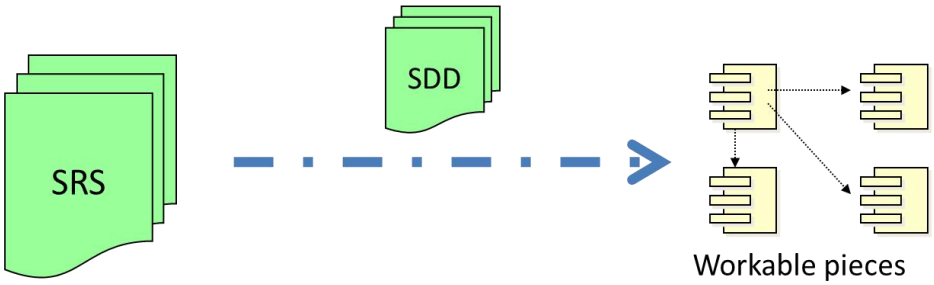

Figure 1

5. **Figure 1** shows on how the works from requirement to design phases and the goal on the illustration is :

   A. To make implementation simple and faster

   B. To make implementation simple and efficient

   C. To make implementation simple and quality

   D. To make implementation simple and easy

6. List are the **TRUTH** about the Architectural Design in Software Design Process **EXCEPT:**
   A. An early stage of the system design process.
   B. Represents the link between specification and design processes.
   C. Often carried out in parallel with some specification activities.
   D. It involves in identifying the minor system components and their communications.

7. The important elements in Interface design are:
   I. User interface (UI).
   II. External interfaces to other systems.
   III. Internal interfaces between various design components.
   IV. Connected interface with few types of communication.

   A. I, II and III
   B. I, II, and IV
   C. I, III and IV
   D. II, III and IV

8. In software engineering, a **good design** can be defined as:
   A. “A design which balances trade-offs to minimise the total cost of the system over its entire lifetime.”
   B. “Software design should Exhibit with Firmness, Commodity and Delight.”
   C. “Software design should Inhibit with Firmness, Commodity and Delight.”
   D. “A design which balances to maximise the entire of lifetime system with the total cost of the system”

Identify True (A) or False (B) for Questions 9 and 10.

9. Inheritance—all responsibilities of a superclass is immediately inherited by all subclasses
   A. True
   B. False

10. Polymorphism—a characteristic that greatly reduces the effort required to extend the design
   A. True
   B. False

11. Identify the correct sequence of stages in the system evolution process
   A. Impact analysis, release planning, change implementation, system release
   B. Release planning, impact analysis, change implementation, system release
   C. System release, release planning, impact analysis, change implementation
   D. None of the above.

12. There are **THREE (3)** different types of software maintenance, fault repair, software adaptation and **x**. Identify **X**.
   A. software maintenance
   B. functionality addition or modification
   C. functionality review
   D. software addition or modification

13. processes depend on this factors except:

   A. The type of software being maintained.
   B. The development processes used.
   C. The skills and experience of the people involved.
   D. The milestones allocated for the project.

14. All of these are factors that need to do software maintenance, **EXCEPT**

A. To repair errors.
B. New requirements are added to the system.
C. Performance or reliability that requires improvement.
D. Staff changes.

For Question 5, 6 and 7 please refer to **Figure 2**

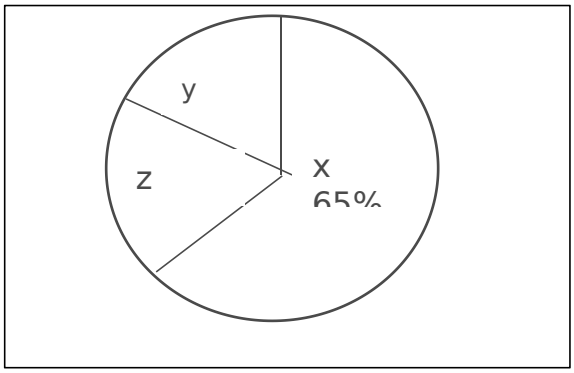

Figure 2. Distribution of maintenance effort

15. **Figure 2** shows the different types of software maintenance and how is effort distributed. Identify **X**?

A. Maintenance to repair software faults.
B. Maintenance to adapt software to a different operating environment.
C. Maintenance to add or modify the system's functionality.
D. Maintenance to improve the organizational building.