This paper consists of **SIX (6)** questions. Answer any **FOUR (4)** questions in the answer booklet provided. All questions carry equal marks.

**Question 1**

(a) Understanding the purpose and potential of an information system is a critical factor to successful information system development. Describe the purpose of the following types of information systems.

i. Transaction Processing Systems
ii. Management Information Systems
iii. Decision Support Systems
iv. Executive Support Systems
v. Expert Systems

(b) Development of information systems often involves several types of IT professionals. The system analyst is one of the important participants in system analysis and design.

i. Identify and describe the roles of a system analyst in information systems development.

ii. Besides the other system analyst who are the participants involved in development process?

(c) The followings are two approaches to system analysis and design. Briefly describe both approaches in system analysis and design and their emphasis.

i. Structured analysis and design
ii. Object-oriented analysis and design
Question 2

(a) You are an employee of Tenaga National Berhad (TNB) which is based in Kuala Lumpur. Recently, Salina has just joined TNB as a system designer. She is involved in the data gathering and has to decide what to examine and what to question or observe. Sampling is a structured approach commonly used with these gathering methods.

Explain sampling to Salina, and convince her why it needs to be done.  

(7 marks)

(b) (i) Currently, you are assisting Jenny to prepare and conduct a survey in STS, a system solution company. She needs explanation on how to use scaling in the questionnaires. Discuss with her the importance of scaling and the different form of scales measurements.

(7 marks)

(ii) This question is included in a survey distributed by David in TNB. When a residential customer call, I always use my computer terminal to get an answer.

Sometimes  Never  Always  Usually
1     2      3      4

Rewrite the question and possible responses for an appropriate outcome.

(3 marks)

(c) Prototyping is viewed as a very viable alternative to the more classical System Development Life Cycle (SDLC). What are the TWO(2) advantages of using prototyping to replace traditional System Development Life Cycle (SDLC) in System Development Projects? Describe TWO(2) disadvantages of the prototyping approach?

(8 marks)

Question 3

(a) While carrying out investigation of hard and soft data, extraction from archives is always a norm. Discuss the pros and cons of using archival data.

(9 marks)

(b) With its radical methodologies employed Rapid Application Development (RAD) has been gaining attention and fast acceptance in system development efforts. One of such component is JAD. Address the advantages and disadvantages of JAD in its application in data requirements analysis.

(8 marks)
Prototype is a concept of differing variations. Elaborate to some level of detail FOUR (4) different conceptions of prototyping that may be fully applied in particular situation. (8 marks)

**Question 4**

(a) (i) Create a context diagram for billing in a Dental office, external entities include the patients and insurance company. (5 marks)

(ii) Draw Diagram 0 showing general processor for the above (i) problem. (10 marks)

(b) Give THREE(3) reasons why an analyst should partition a data flow diagram into separate computer programme. (3 marks)

(c) (i) Explain the need for Manual Procedure. Describe the characteristics of manual procedure. (4 marks)

(ii) What is a batch process? (3 marks)

**Question 5**

(a) (i) Describe the objectives of user interface design. (4 marks)

(ii) What are the four types of user interface? (4 marks)

(b) Input design plays an important role because it ensures that the data are captured into a suitable format for the computers to use. Good screen design can avoid the situation “Garbage in! Garbage out!” List and explain FOUR (4) guidelines to good screen design. (8 marks)

(c) There are three main types of logically structured databases: hierarchical, network and relational. Using suitable diagrams, differentiate these three database structures. (9 marks)
Question 6

(a) In selecting an application architecture, the systems analyst must determine whether the system will be an on-line system, a batch processing system, or a combination of the two. Explain and each of these three processing methods. What are the factors to be considered when making decision on which processing method to implemented in a system? 

(9 marks)

(b) Documentation is essential for successful system operation and maintenance. Why is documentation important? List four (4) types of documentation.

(6 marks)

(c) List and explain the different classifications of maintenance.

(8 marks)

(d) Testing is done to make sure that programs are functioning properly. Briefly explain two types of testing.

(2 marks)