Question 1

(c)   Briefly explain any **THREE (3)** types of databases with reference to the number of supported users.

(6 marks)

[Total: 25 marks]

1. (a) Your manager requested that you propose to a manufacturing company to convert a traditional file-based system to database systems. In your proposal to the company, list and explain each of the following:

   (i) TWO (2) drawbacks of using the traditional file-based system in managing the company's daily operations. (6 marks)

   (ii) TWO (2) benefits of using database systems in managing the company's daily operations. (6 marks)

Q1.   (b)   Advice Mr Shito to transform its business computer system to Database Management System (DBMS). You need to justify your recommendation by carrying out the following tasks:-

   (i)   Briefly explain any **THREE (3)** advantages of using DBMS.   (6 marks)

   (ii)   Briefly describe any **THREE (3)** functions of DBMS.   (6 marks)

   (c)   Mr Shito has since agreed to adopt the implementation of DBMS but he would like you to furnish him with further details of DBMS. For a start, outline to him the **FIVE (5)** components in the database system environment.   (5 marks)

Q1. (a) Data become useful only when they are placed in certain contexts and the main mechanism for providing such contexts for data is '**metadata**'. Explain the following terms:

(i) Data (2 marks)

(ii) Metadata (2 marks)

(b) Data can be recorded and stored in files of a file-based system or database management system. Briefly explain how a **file-based system** is different from a **database management system**. (4 marks)

(c) File-based systems were first developed to store, manipulate and retrieve data but as business applications become more complex, it was evident to have a number of limitations. Describe any **THREE (3) disadvantages** of using a file-based system. (6 marks)

(e) A **database management system** (DBMS) performs several important functions to ensure the integrity and consistency of a data in the database. Briefly explain any **FOUR (4)** functions of a DBMS. (8 marks)

Q1. **(a)** Lei Tai Kor runs a convenient store business (EasyBuy Sdn Bhd) selling daily use and household items. Currently, he uses a system written entirely in C++ to monitor his business transactions and inventories. He plans to expand his business in the near future to nearby housing estates and if that is proven successful, he will then expand to nearby cities.

        (i) Explain with relevant examples **THREE (3)** problems that EasyBuy will face when they try to expand the business due to the file-based system that they are using now. (9 marks)

        (ii) Explain how a database system can overcome the **THREE (3)** problems mentioned in Q1 (a) (i) above. (9 marks)

    (b) We cannot build a comprehensive and effective information system using productivity software like MS Word, MS Excel and MS PowerPoint. Explain why. (7 marks)

Question 1

(a)   Define the following terms in the context of database systems:

    (i)   Data model   (2 marks)

    (ii)   Entity   (2 marks)

    (iii) Relational database   (3 marks)