CERTIFIED PUBLIC ACCOUNTANT

FOUNDATION LEVEL 2 EXAMINATIONS

F2.3: INFORMATION SYSTEMS

DATE: TUESDAY 27, MAY 2025

INSTRUCTIONS:

1. Time Allowed: **3 hours 15 minutes** (15 minutes reading and 3 hours writing).

2. This examination has **seven questions** and only **five questions** should be attempted.

3. Marks allocated to each question are shown at the end of the question.

4. The question paper should not be taken out of the examination room.

QUESTION ONE

Nowadays many organizations are automating their systems so that they can work efficiently, faster and accurately. Computers are now basic needs especially at work places, hospitals, education institutions, banking institutions and in many other sectors. John and Jacob already have the computers and have gone further to even create an online trading system. They are now in the process of modernizing their online trading system. The modernization will add new features to the existing system and expand the range of interfaces beyond desktop and laptop computers to include tablet computers and smartphones. The system will add Twitter messaging in addition to continued support for traditional email.

Required:

a) Discuss FOUR main categories of computers that can be used by John and Jacob.

(8 Marks)

b) Briefly explain the meaning of hardware platforms. (2 Marks)

c) Outline TEN advantages of cloud computing. (10 Marks)

(Total: 20 Marks)

QUESTION TWO

The Attendance Management System (AMS) can be made smarter by using a face detection technique, where a camera of a machine is used, which automatically captures the image of a staff member and checks the observed image with the face database. This technology is the least intrusive and fastest biometric technology. It is typically used for two purposes. First, marking attendance for staff by comparing the face images produced recently and secondly, recognition of humans who are strange to the environment i.e. an unauthorized person. Once recognition is done, attendance will be automatically updated in the database along with his name, date and time.

Required:

a) Discuss at least FOUR components of an expert system referring to the above attendance management system. (8 Marks)

b) Briefly discuss at least THREE examples of knowledge work systems. (6 Marks)

c) Outline at least THREE challenges faced while implementing knowledge management systems. (3 Marks)

d) Outline at least THREE steps to be followed to obtain Values for knowledge management systems. (3 Marks)

(Total: 20 Marks)

QUESTION THREE

Sales and marketing information systems assist the firm in marketing and sale of products and services to customers. An important operational system in this area is the sales order processing system, which is used to capture customer orders. Manufacturing and production information systems deal with the planning, development and production of products. An important system in this area is an inventory system, which is used to provide information about the number of items held in inventory to support manufacturing and production activities. Finance and accounting information systems keep a record of the firm's financial assets and the flow of funds. The finance function is responsible for managing the firm's financial assets such as cash, shares and other investments. To establish if the firm is getting the best return on its investments, the finance function must obtain information from both external and internal sources. The accounting function is responsible for maintaining and managing the firm's financial records. Human resources information systems maintain employee records, record employee skills, job performance and training, and assist in planning employee compensation and career development. An example of a system used in the human resources area would be a performance appraisal tracking system, which is used to track details of each employee's performance evaluations.

Required:

a) **Discuss FOUR kinds of organizational change that are enabled by information systems.** (8 Marks)
b) **Explain what we mean by Business Process Re-engineering.** (2 Marks)
c) **Discuss the FIVE perspectives of feasibility study in system investigation stage while developing an information system.** (5 Marks)
d) **Briefly, discuss FIVE categories of fourth-generation language tools.** (5 Marks)
(Total: 20 Marks)

QUESTION FOUR

Electronic commerce has become a global password for all international firms. These firms around the world have opted to the new technologies that keep on coming such that they can be able to compete in an international setting and offer competitive services in an accurate and timely manner. However, all these successful firms understand that they are doing transactions in exchange for money; they make money by providing good service using the Internet, by expanding the reach of existing customers, or by providing existing services or goods at a minimized cost. All organizations that choose to perform digitally based transactions are at risk. They are investing hugely in every new upcoming technology such that they can store, communicate, disseminate, and retrieve information because the world is driven by technological era. Nevertheless, viruses, hackers and so many others calamities are hitting and challenging these companies endlessly, even though these firms seem to be challenged, they earn a lot of money compared to traditional firms, and this creates a serious need for traditional firms to shift to digitally based environment.

Required:

a) Describe briefly at least FIVE examples of electronic payment systems for e-commerce. (10 Marks)

b) Although e-commerce has more advantages to businesses today, it also comes with challenges. Outline at least FIVE limitations of e-commerce. (5 Marks)

c) Discuss FIVE categories of m-commerce services. (5 Marks)

(Total: 20 Marks)

QUESTION FIVE

Urumuri Inc is an engineering firm with approximately 600 employees. A database is required to keep track of all employees, their skills, assigned projects, and departments in which they work. Every employee has a unique number assigned by the firm, a name, and date of birth. If an employee is married to another employee of the firm, the data of the marriage and who is married to whom must be stored; however, no record of marriage is required if an employee's spouse is not also an employee. Each employee has a job title. Each employee does only one type of job at a time, and we only need to retain information about an employee's current job. There are 14 different departments in the firm, each with a unique name. An employee can report to only one department. Each department has a phone number. To procure various types of equipment, each department deals with many vendors. A vendor typically supplies equipment to many departments. We need to store the name and address of each vendor and the date of the last meeting between a department and a vendor. Many employees can work on a project. An employee can work on many projects, but can only be assigned to at most one project in a given city. For each city, we are interested in its state and population. An employee can have many skills, but they can use only a given set of skills on a particular project. Employees use each skill that they possess in at least one project. Each skill is assigned a number, and we will record a short description of each skill. Projects are distinguished by project numbers and we must store the estimated cost of each project.

Required:

a) Outline FIVE benefits of a database management system at Urumuri Inc (5 Marks)

b) An information policy specifies the company's rules for acquiring, classifying, standardising and sharing, information, and includes procedures and roles.

Discuss the below terms as used in information policy:

i) Acquiring (2 Marks)
ii) Disseminating (2 Marks)
iii) Classifying (2 Marks)
iv) Standardizing (2 Marks)
v) Sharing information (2 Marks)

c) Explain FIVE problems associated with the traditional file environment. (5 Marks)

(Total: 20 Marks)

QUESTION SIX

Large companies and organisations have many employees. In such scenarios where there's a significant number of human employees to manage, it becomes challenging to supervise and manage the activities of the human resources efficiently. Such companies/organisations need an employee management system that can handle everything related to the company's human resources. Mickey Company wants to build an employee management system that consolidates all the relevant information on the company's human resources. This system will have two major components which are the human resource officer and the Employee. The human resource officer will be in charge of the company information, leave management and payroll. Likewise, employees can use the system to check their leave status, view salary details, yearly holiday list, and also for voicing grievances or resigning.
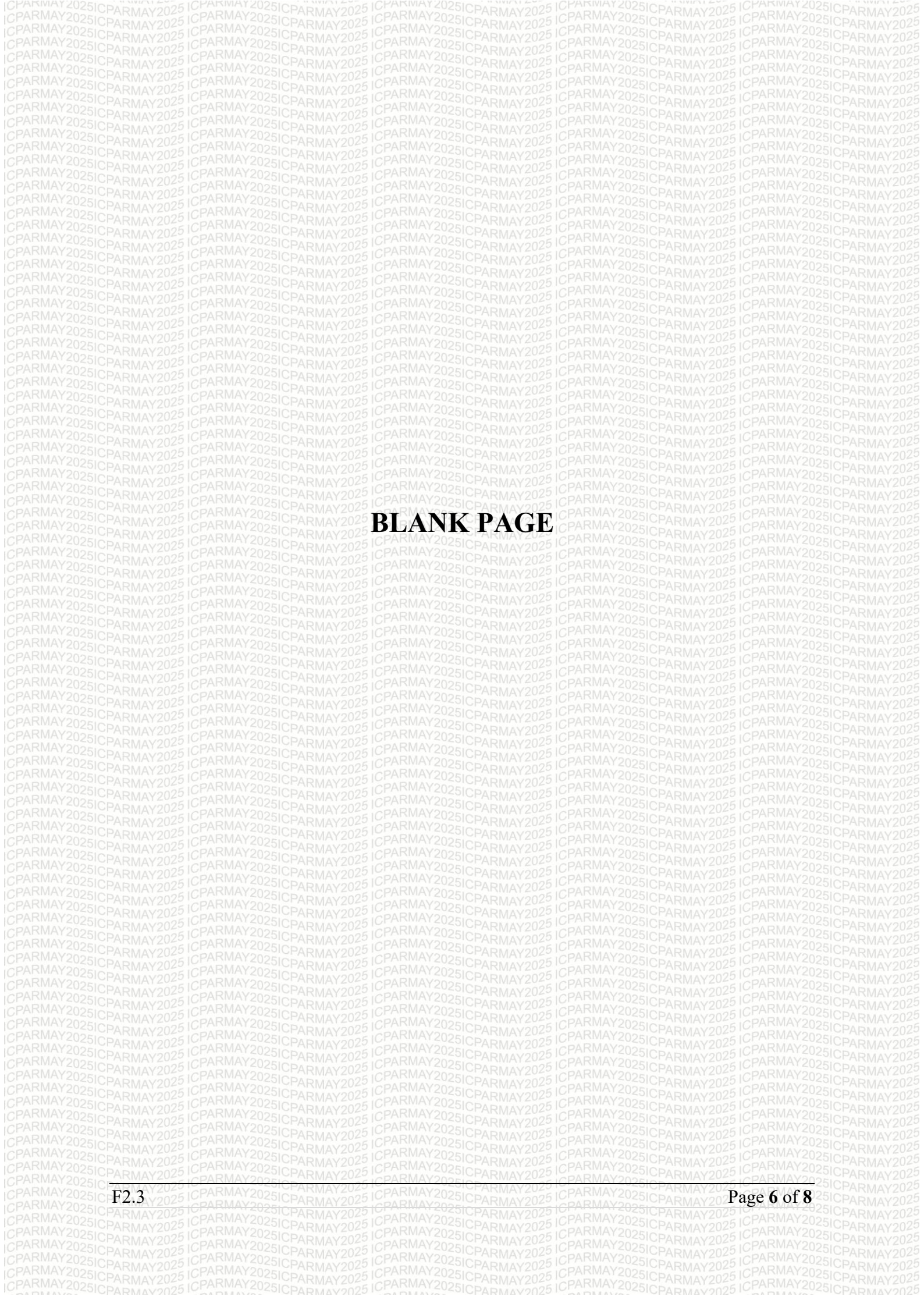
Required:

a) **Outline FOUR characteristics of all functional perspective information systems such as the Mickey company system for managing employees.**   (2 Marks)
b) **Discuss the FOUR primary types of functional perspective information systems.**
                                                                                    (4 Marks)
c) **Describe at least FOUR competitive forces that shape the fate of the firm.**   (8 Marks)
d) **Discuss at least THREE common problems faced in Management Information Systems(MIS).**   (6 Marks)
                                                                        (Total: 20 Marks)
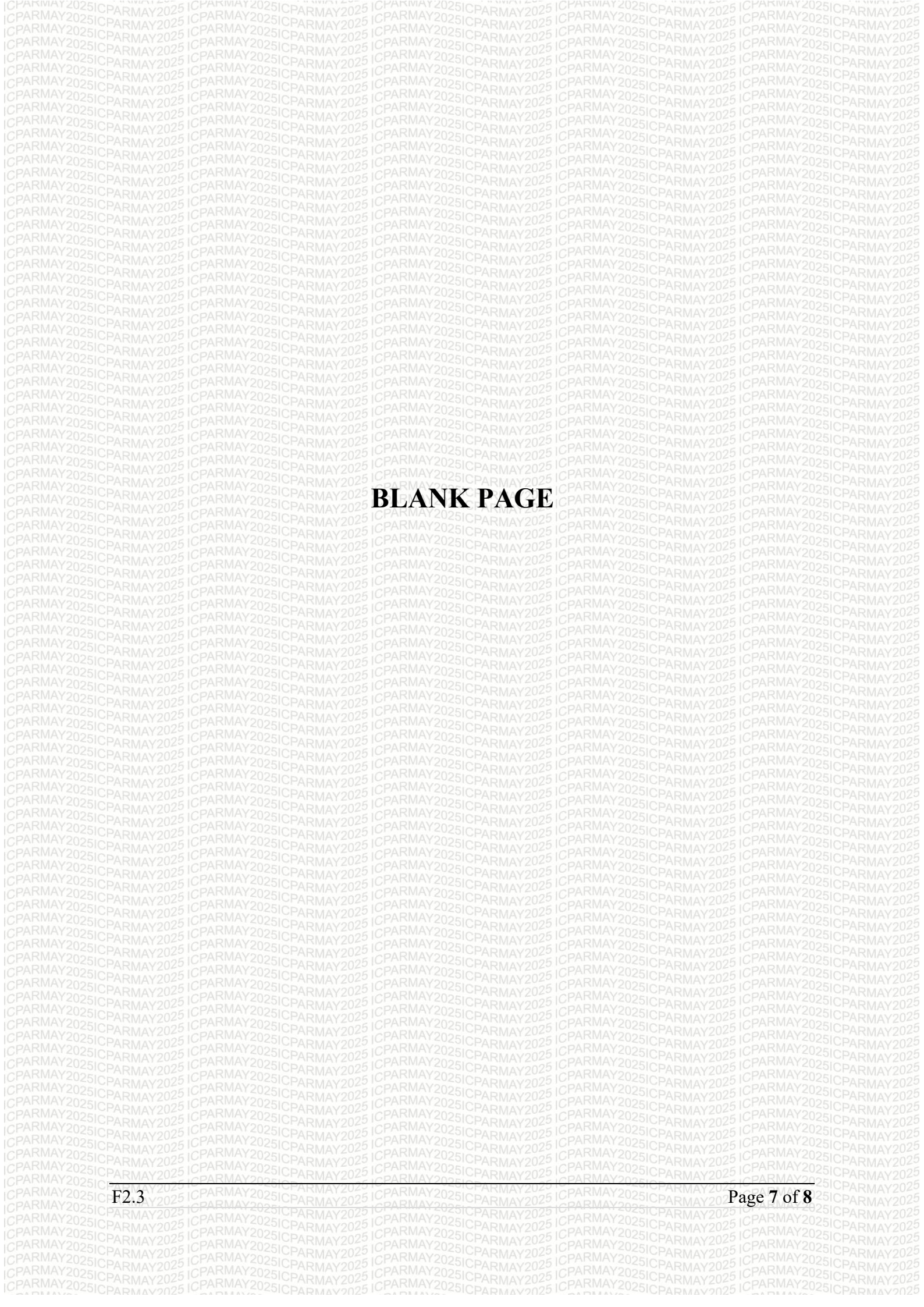
QUESTION SEVEN

Q & A LTD wants to develop a system for diagnosis of heart disease using data mining modelling technique. This system can discover and extract hidden knowledge associated with heart disease from historical heart disease database. It will assist healthcare practitioners to make intelligent clinical decisions that traditional decision support systems cannot. The system will predict whether a patient is affected with heart disease or not using Gaussian naïve Bayes machine learning algorithms on a qualified dataset.

Required:

a) **Outline the FIVE elements comprising the Business Intelligence environment.**
                                                                                    (5 Marks)
b) **Briefly discuss FOUR main types of systems that support decision-making.**(4 Marks)
c) **Define Customer Decision-Support System.**   (1 Mark)
d) **Outline FOUR capabilities of Executive Support Systems.**   (4 Marks)
e) **Give TWO benefits of Executive Support Systems.**   (1 Marks)
f) **Outline FIVE benefits of Group decision support system.**   (5 Marks)
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