



TAXATION PROGRAMME EXAMINATIONS

DIPLOMA LEVEL

D1: BUSINESS INFORMATION MANAGEMENT

WEDNESDAY 17TH JUNE 2015

TOTAL MARKS – 100; TIME ALLOWED: THREE (3) HOURS

INSTRUCTIONS TO CANDIDATES

1. You have fifteen (15) minutes reading time. Use it to study the examination paper carefully so that you understand what to do in each question. You will be told when to start writing.
2. This question paper consists of **FOUR (4)** questions of Twenty Five (25) marks each. You must attempt all the **FOUR (4)** questions.
3. Enter your Student number and your National Registration Card number on the front of the answer booklet. Your name must **NOT** appear anywhere on your answer booklet.
4. Do **NOT** write in pencil (except for graphs and diagrams).
5. The marks shown against the requirement(s) for each question should be taken as an indication of the expected length and depth of the answer.
6. All workings must be done in the answer booklet.
7. Present legible and tidy work.
8. Graph paper (if required) is provided at the end of the answer booklet.

Attempt all FOUR (4) Questions

QUESTION ONE

System Analysis is a study of a problem which an organization is trying to solve by delivery of an appropriate Information System. It includes a feasibility study.

Required:

- (a) Explain clearly the meaning of the term "Feasibility study" (4 marks)
- (b) Briefly describe the following areas of feasibility study which may be investigated.
 - (i) Organizational Factors (3 marks)
 - (ii) Legal, Ethical requirements (3 marks)
 - (iii) Economic Factors (3 marks)
 - (iv) Technical Factors (3 marks)
- (c) Discuss any three (3) controls which may be used to minimize computer crimes. (9 marks)

[TOTAL: 25 Marks]

QUESTION TWO

- (a) Distinguish between IT/IS objectives Strategy and Business Objectives Strategy (3 marks)
- (b) Describe the characteristics of Information systems supporting the following levels of an organization by stating their main focus:
 - (i) Strategic (6 marks)
 - (ii) Management (6 marks)
 - (iii) Operational (6 marks)
- (c) Explain the meaning of the terms "Knowledge Base" and "Knowledge Management" in today's organisations. (4 marks)

[Total: 25 Marks]

QUESTION THREE

- (a) Describe the use of an Intranet and an Extranet in a functional area such as sales and marketing. (10 marks)
- (b) Describe the following internal technologies and how they can help an organization achieve its objectives:
- (i) Telecommuting (3 marks)
 - (ii) E-commerce (3 marks)
 - (iii) Group Decision Support System (GDSS) (3 marks)
 - (iv) E-Learning (3 marks)
 - (v) Video-Conferencing (3 marks)

[TOTAL: 25 Marks]

QUESTION FOUR

- (a) Explain the following systems which assist in the management of knowledge in the organization.
- (i) Database Systems and Database Management Systems (4 marks)
 - (ii) Data Warehouse and Data Mining (4 marks)
 - (iii) Artificial Intelligence and Expert Systems (4 marks)
- (b) Distinguish between Perfective maintenance and corrective maintenance. (4 marks)
- (c) Security of an Information System is threatened by intentioned and unintentional threats.
- (i) Explain how quality software is obtained by software reviews. (4 marks)
 - (ii) List any three (3) intentional threats and two (2) unintentional threats. (5 marks)

[TOTAL: 25 Marks]

END OF PAPER

D1 BUSINESS INFORMATION MANAGEMENT SOLUTIONS

SOLUTION ONE

- a) Feasibility study: A study carried out to determine the probability of success of the proposed information system given the organisation's resources and constraints. This study gives a go ahead for system analysis to fully commence.
- b) Types of feasibility studies:
- i) **Organizational:** A study to examine whether the organizational environment and culture, are compatible with the proposed system.
 - ii) **Legal, ethical:** Examine regulatory requirements and general acceptability of the proposed system to employees.
 - iii) **Economical:** A study of costs and benefits where costs are weighed against benefits.
 - iv) **Technological:** An examination of available technologies whether these can be met by the organization.
- c) Three Controls:
- i) **Password controls:** A password is a secret code to allow the user access the computer system. Passwords are categorised as the thing that only 'you' knows
 - ii) **Use of a digital signature:** A digital signature is used so authenticate an electronic payment or cheque. It is a way of allowing for data communication to only occur where trusted nodes exist.
 - iii) **Data encryption:** Involves transforming data or message before sending on a network to prevent intruders read the message on its way to a destination. It involves encryption and decryption keys that are shared by the sender and the receiver.

SOLUTION TWO

a) IT/IS objectives strategy involves strategic information planning where new applications in IT are identified, this is called a portfolio through which an organization will conduct its business. Strategic information systems will enable a business organization to develop a competitive advantage. Business objectives strategy involves identifying where the business is going and why. Business direction is expressed in business objectives. A decision is made to decide which objectives are important, e.g. critical success factors.

b) Characteristics of information systems by organizational level:

i) **Strategic:**

- The main focus is on long term plans. The information is aggregated from many sources, both internal and external.
- This information is Highly summarized
- These are merely projections

ii) **Management**

- This information focuses on performance and control
- Sourced internally e.g. from TPS
- Summarized at medium level
- Focus is for short term plans

iii) **Operational**

- Main focus is on data collection and processing
- Data is collected in much detail
- Data is sourced internally
- Frequent collection of data and processing

c) Knowledge Base and Knowledge Management:

This is database containing the organization "knowhow", thus promoting knowledge sharing among employees, customers, and business partners.

Knowledge Management encourages continuously updating knowledge by the chief knowledge officer to respond to current challenges of an organization. Users of the knowledge base are also identified to validate their requirements, including security the knowledge base.

SOLUTION THREE

a) Intranet

In Sales and Marketing an Intranet will be used to protect data on sales and marketing for the organization use only. Data such as new product development must be kept secret, this also includes consumer trends, and however, within the organization knowledge can be share. Employees can develop web sites where they can share their knowledge through browsing and searching. Employee data concerning consultants can also be kept secret, this mat also include market strategies. An Extranet will link business strategic partners, customers including suppliers. Data security is enhanced using the firewall, anyone wishing this network will be requested to provide credentials.

b) Internet Technologies

Telecommuting

This is the use of networks and telecommunication systems to enable employees work at home instead of reporting at a working centre. Savings can be made by an organization on rentals and provision of office facilities, thereby increasing its profits.

E-commerce

This is buying and selling of goods and services using networks and telecommunication systems. An organization can maintain a virtual office to exchange or sale its goods. Customers buying goods have a wide selection, and price bids are also encouraged. Exchange of transactions are done electronically using EDI, a facility for cost saving in e-commerce.

GDSS

GDSS enables experts to share discussions and decision-making in a group using a network of computers and other telecommunication devices. GDSS enables organizations to assign common tasks to individual experts who are dispersed in their locations. Participants can share computer screens, documents, common views to arrive at a consensus.

E-learning

This is a method of achieving education by creating web sites which can be accessed by learners at their own will. In this arrangement virtual classrooms can be established without the need for a tutor to be at the physical point. Learners in e-learning proceed at their own pace, institutions may hire part-time tutors to deliver learning sessions in web sites.

Video-Conferencing

In this technology participants can view each other in a conference irrespective of their physical site. Videoconferencing can be used by organizations to promote collaboration from different experts assigned to one assignment. Savings are made by an organization from travel and accommodation. Assignments may be done using this technology.

SOLUTION FOUR

a)

- i) **Databases Systems and Database Management Systems:** A database may store knowledge for the organization, for example knowledge based databases. A Database Management system is a software tool which may be used to maintain this knowledge by constantly updating it to reflect the changing environment.
- ii) **Data Warehouse and Data Mining:** A data warehouse is a repository for both current and historical data. This data may be of special interest to certain employees and managers. Data mining uses reporting tools which enables employees to explore the data warehouse and produce advanced analytical reports, for example OLAP tools.
- iii) **Artificial Intelligence and Expert Systems:** AI is one of the families of intelligent agents where computers-based systems are developed to behave like human experts. AI can be applied in business to provide solutions to business problems that may be too complex to humans. Expert systems are knowledge intensive computer programs which are used to capture expert knowledge in certain domains.

b) Perfective maintenance and corrective maintenance

Perfective maintenance can mean perfecting the software by implementing new requirements; in other cases it means maintaining the functionality of the system but improving its structure and its performance.

Corrective maintenance is universally used to refer to maintenance for fault repair. It is reactive as it is carried out whenever an error arises.

c)

i) Software reviews are the most widely used method of validating the quality of a software process or product. They involve a group of people examining part or all of a software process, system, or its associated documentation to discover errors. Omissions, anomalies and other potential problems. The review is responsible for checking that the project standards have been followed and that software and documents conform to these standards. The conclusions of the review are formally recorded and passed to the author or whoever is responsible for correcting the discovered problems.

ii)

Intentional threats: These may be caused by ill-intentional or malicious users, or criminals.

Examples include the following:

- Malwares or viruses written and planted by frustrated programmers
- Gaining access to a protected information system by hackers
- Theft of data using malicious software such as sniffers

Unintentional threats: These may happen due to accidents or ignorance.

Examples include the following:

- Software errors which may show when it has been implemented
- Hardware errors due to factory fault
- Erasing a database by accident while updating

END OF SOLUTIONS