

**D5 – INFORMATION SYSTEMS IN ORGANISATIONS
SOLUTIONS & MARKING SCHEME**

JUNE 213

PART A.

Answer A1.

One way of classifying Information Systems (IS) is by organisational level. Identify THREE types of IS at different organisational levels, giving an example of each, and clearly indicating their relative levels within the organisational hierarchy. (5 marks)

Identification of three from:

- Personal and productivity systems
- Transaction processing systems
- Functional/management information systems
- Enterprise systems
- Inter-organisational systems
- Global systems

(3 marks for each system with example, and 2 marks for correct relative level – above list going from bottom to top)

Answer A2.

Describe FIVE characteristics that are typical of a Transaction Processing System. (5 marks)

Five characteristics from:

- Large amounts of data
- Data sources and uses largely internal
- Processing conducted on a regular (eg daily, weekly) basis
- High speed processing required for high volume data
- Data usually formatted and structured
- Highly detailed data (raw data) usually evident
- Low computational complexity is usual
- High levels of accuracy, integrity and security required
- High reliability required
- Enquiry processing on files and databases required

(5 marks for five characteristics – naming but not describing gives a maximum of 3 marks) **[Turn over]**

Answer A3.

Distinguish between 'structured' and 'unstructured' business decisions, and give an example of each. (5 marks)

Structured decisions:

- Routine and repetitive problems
- Standard solutions exist
- Criteria for problem and solution clearly defined
- Standard algorithms available to make decisions
- Eg profit maximisation; stock control

Unstructured decisions:

- Uncertainty in definition of problem
- No definitive or clear-cut solutions
- Decision makers may use different data, assumptions and processes
- Reliance on intuition, judgment and experience
- Eg new market predictions; planning new services

(2 marks for good coverage of each type and 1 mark for appropriate examples of each)

Answer A4.

Describe with examples the way in which the use of the internet can support 'information discovery' and 'information communications' in a business environment. (5 marks)

Information discovery achieved through:

- Browsing, finding and retrieving information
- Querying
- Downloading and processing data
- Example of browsers: Explorer, Firefox, etc
- Example of use: anything sensible, eg competitor websites, market information, contact details, etc

Information communication through:

- Podcasts
- RSS
- Micro-blogging
- Example: marketing; supply chain management
- (2 marks for each description and 1 for examples which indicate understanding)

[Turn over]

Answer A5.

Identify the THREE layers of IS network security, giving examples for each layer. (5 marks)

Layers with examples:

- Perimeter security
 - Virus scanning
 - Firewalls
 - Malware protection
 - Etc

- Authentication
 - Username/password
 - Synchronisation
 - Tokens
 - Biometrics
 - Etc

- Authorisation
 - User permissions
 - Enterprise directories
 - Rules-based access control
 - Etc

(3 marks for identifying the three layers and 2 marks maximum for examples)

Answer A6.

Define 'data management' and identify the stages of the data life cycle that require management. (5 marks)

Definition of data management to include a structured approach for capturing, storing, processing, integrating, distributing, securing, and archiving data. (3 marks)

Diagram or description of the data life cycle from sources to storage to analysis to results to solutions. (2 marks)

Answer A7.

Describe the role of an Inventory Management system, including inventory costs and the key decisions with which such a system can support this business function. (5 marks)

Description of inventory control to include avoiding overstocking, avoiding insufficient stock and ordering. **[Turn over]**

Costs are for maintaining stock, ordering stock and having insufficient stock and the role of inventory management is to minimise these combined costs.

Key decisions are when to order and how much to order.

(1 mark for basic definition, 2 marks for costs and their underpinning of the role of inventory management, 2 marks for the key decisions)

Answer A8.

Describe 'Predictive Analysis Information Systems' and illustrate their application in TWO example environments. (5 marks)

Predictive Analysis as tool for determining possible future outcome and likelihoods of occurrence.

Uses sophisticated analysis of past data to predict future events and behaviours.

Examples include traffic light systems, early diagnosis of possible disease and bank customer behaviour.

(3 marks for description and 1 mark for each of two examples)

PART B.

Answer B9.

a). With reference to any business with which you are familiar, give FIVE questions which should be answered by its business strategy. (10 marks)

The five required questions are:

- What is the long term direction of the business
- What is the plan for deploying resources
- What resource trade-offs/sharing will be needed
- What is the unique positioning of the business amongst its competitors
- How will lasting competitive advantage and profitability be ensured

(1 mark for each question and 1 mark for an attempt to relate it to a particular business – simply listed as above gives just 5 marks)

b). Porter's competitive forces model has been used to develop strategies for businesses in order to increase their competitive advantage. Explain the FIVE forces, relating them to your chosen business. (10 marks)

[Turn over]

- Threat of entry of new competitors
- Bargaining power of suppliers
- Bargaining power of customers
- Threat of substitute products/services
- Rivalry among existing companies in the same business field

(1 mark for each point and 1 mark for an attempt to *explain* with reference to the business example)

Answer B10.

a). 'Recruitment' is one activity of the Human Resources (HR) Management function of an organisation that benefits from the application of information systems (IS). Identify FOUR other activities within the HR function to which IS can be applied. (4 marks)

Expect four of the following with clear exposition:

- Assessing
- Deploying
- Developing
- Retaining
- Planning

(1 mark for each with clear exposition)

b). Why is the web useful for Recruitment? (8 marks)

- Ability to reach a wide audience at low cost
- Fast access to a large number of job offerings
- On-line checking of salary comparisons
- Global recruiting
- Intelligent software for pre-screening tests
- Use of social media sites to locate best talent
- HR portals for job matching

(2 marks for any of 4 well-explained points)

c). Select ONE other business function and describe how IS can support this activity. (8 marks)

(Candidates may choose Operations/Production, Marketing/Sales, Accounting/Finance and present four points for 2 marks each of how IS can be applied)

[Turn over]

Answer B11.

The security of an Information System is threatened by factors which may be unintentional or intentional.

a). Identify and explain THREE unintentional threats. (9 marks)

Explanation of three most likely factors:

- Human error
- Environmental hazards
- Computer systems failures
- Or other

(3 marks for identification and explanation of each – good explanation to include example)

b). Identify and explain THREE intentional threats. (9 marks)

Explanation of three factors from the following:

- Theft of data
- Inappropriate use of data
- Theft of computer time
- Theft of software
- Physical threats such as damage or sabotage
- Etc

(3 marks for identification and explanation of each – good explanation to include example)

c). Briefly describe 'identity theft'. (2 marks)

Use of personal details (eg credit card details, other personal details), facilitated by the widespread use of these details on the internet, physical theft of eg a laptop may lead to this, reluctance of companies to reveal the extent, etc

(any 2 distinct points required)

[Turn over]

Answer B12.

- a). **Identify and describe FIVE types of inter-organisational systems (IOS).**
(10 marks)

Solutions may include:

- B2B trading systems
- B2B support systems
- Global systems
- Electronic funds transfer (EFT)
- Groupware
- Shared databases

(description of any 5 points required for 2 marks each)

- b). **Identify and describe FIVE major IOS infrastructure technologies.**
(10 marks)

Any five from the following:

- Electronic data interchange (EDI)
- Extranets
- XML
- Web services
- Enterprise Application Integration
- Extended ERP

(description of any 5 points for 2 marks each)

Answer B13.

- a). **Describe the components of a Decision Support System (DSS)?**
(10 marks)

Components will be:

- Database
- Model base
- User interface
- Users
- Knowledge base

[Turn over]

(2 marks for each, 1 for identification and 1 for description)

b). Explain FIVE capabilities of a DSS.

(10 marks)

Capabilities may be any of the following:

- Support for decision makers
- Supports several interdependent or sequential decisions
- Supports all phases and varieties of decisions
- Adaptable with changing conditions
- Easy to construct and use
- Good use of quantitative models
- Etc

(2 marks for each of 5 well explained points)

End of Examination

Matrix of Los and ACs

| LO | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | B9 | B10 | B11 | B12 | B13 |
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