higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

SYSTEMS ANALYSIS AND DESIGN
NQF LEVEL 3

3 March 2020

This marking guideline consists of 9 pages.

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SECTION A

QUESTION 1

1.1	1.1.1	D		
	1.1.2	D		
	1.1.3	C		
	1.1.4	A		
	1.1.5	D		
	1.1.6	A		
	1.1.7	A		
	1.1.8	A		
	1.1.9	C		
	1.1.10	C		
			(10 × 1)	(10)
1.2	1.2.1	D		
	1.2.2	K		
	1.2.3	F		
	1.2.4	H		
	1.2.5	A		
	1.2.6	C		
	1.2.7	J		
	1.2.8	O		
	1.2.9	E		
	1.2.10	B		
			(10 × 1)	(10)
1.3	1.3.1	Total Cost of Ownership		
	1.3.2	Business Process Automation		
	1.3.3	Accounting Information System		
	1.3.4	Business Process Re-engineering		
	1.3.5	Entity Relationship Diagram		
	1.3.6	Small or Medium Enterprise		
	1.3.7	Joint Application Development		
	1.3.8	Growth Share Matrix		
	1.3.9	Strengths, Weaknesses, Opportunities, Threats		
	1.3.10	Business Process Improvement		
			(10 × 1)	(10)

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1.4 1.4.1 tactical planning
1.4.2 outsourcing
1.4.3 innovative strategy
1.4.4 Organisational transformation
1.4.5 Activity elimination
1.4.6 Chief information officer
1.4.7 Cost justified
1.4.8 Differentiation strategy
1.4.9 problem child
1.4.10 Management systems

(10 × 1) (10)

SECTION A: 40

QUESTION 2

2.1 Regularly interacting or interdependent group of units forming an integrated whole (2)

2.2
- Delivered on time
- Within the budget
- With specified functionality
- Providing the business value and benefits required (4)

2.3 2.3.1 Advantages
- Fully identifies system requirements long before programming (construction) begins
- It minimizes changes to requirements during the development project

Disadvantages
- Because the design must be completely specified before programming begins it can take a long time before even part of the system is ready for use
- The documents are often long and difficult to understand, so users don't always pick up problems or missing functionality in the design (4)

2.3.2 Advantages
- Fully identifies system requirements long before programming (construction) begins
- Minimises changes to requirements during the development project
- Reduces the delays of the waterfall (Any TWO)

Disadvantages
- Same as waterfall approach but slightly minimised by teams working in parallel
- Integrations must take place, which can sometimes cause problems if not all conform to similar design standard (4)

2.4 Every manager relies on the availability and correctness of information to determine the strength and downfall of the company.

OR

Managers need information systems to make informed decisions. (2)
[16]

QUESTION 3

3.1 Collecting, storing and processing financial and accounting data used by decision makers (2)

3.2 Computer systems used by telecommunication service providers to manage networks (for example telephone networks)✓
Support management functions such as network inventory, service provisioning, network configuration and fault management✓✓ (3)

3.3
- Productivity tools✓
  Applications allowing easier performance of day-to-day tasks✓
- Communication tools✓
  Email, voice mail, internet, diaries, electronic calendars, video conferencing✓
- Collaboration tools✓
  Allow automatic routing of jobs from one person to the next where several people are involved in the process✓ (6)

3.4 Accounting information system
- Automates role of accounting in organisation
- Replaces manual system of book-keeping, handling accounting functions such as debtors and creditors, purchasing and sales, balance sheets, profit and loss
- Captures normal accounting transactions and produces required reporting information according to regulations and standards of government and accounting profession
- Produces annual reports and audits required to reflect current position of business (Any THREE)

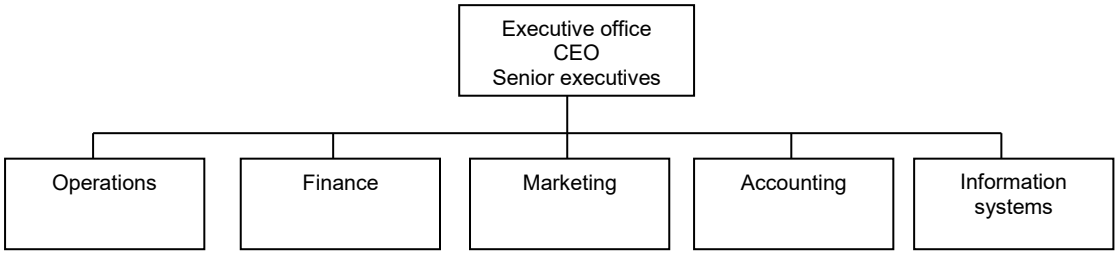
Total information system
- Works across the organisation and at various levels
- Support an organisation's total information needs in terms of business operations, decision making and strategic planning
- May consist of several separate systems that work together to provide information systems of an organisation (6)

[17]

QUESTION 4

4.1 Contracting or subcontracting of noncore activities to free cash, personnel, time, and facilities for activities in which a company holds competitive advantage (2)

4.2



(6)

4.3
- Chief knowledge officer
  Organisational leader, responsible for ensuring organisation maximises value it achieves through knowledge
- Mobile app developer
  Focused on developing software or systems for mobile devices
- Network administrator
  Responsibility includes maintaining computer infrastructures with emphasis on networking
- Computer programmer
  Writes computer programs
- Database administrator
  Responsible for performance, integrity and security of database
- Systems analyst
  Analyses a complex process or operation in order to improve its efficiency, especially by applying a computer system
- Chief technology officer
  An executive-level position in company or other entity which focuses on scientific and technological issues within an organisation
- Chief information officer
  Executive title given to person in charge of information technology (IT) strategy and computer systems required to support the organisation's unique objectives and goal
- Webmaster
  Responsible for maintaining one or many websites

(1 mark for career, 1 mark for role) (Any 8 × 2) (16)

4.4
- Operations
- Development
- Technical support

(3 × 2) (6)

[30]

QUESTION 5

5.1
- New information system development projects
- Upgrades of information systems
- Purchases of additional hardware, software or services to cope with additional staff (3)

5.2
- Business standing
- Cost and contract terms
- Skills, knowledge and experience
- Availability
- Scope of offering (5)

5.3 5.3.1 Gives organisation full use of computer technology for agreed period of time at agreed monthly cost

5.3.2 Similar to rental, but normally over longer period and used for assets of higher value

5.3.3 Refers to health and comfort factors associated with users who spend time working on computers

(3 × 2) (6)

5.4

FINANCE METHOD	ADVANTAGE	DISADVANTAGE
Renting	Hardware does not become obsolete No long-term financial commitment Does not need lump sum funding or investment Often includes maintenance and support contract (Any ONE)	Higher monthly cost Hardware not owned (Any ONE)
Leasing	Hardware does not become obsolete Not long-term financial commitment Does not need lump sum funding or investment Often includes maintenance and support contract Less expensive that renting (Any ONE)	Monthly costs Hardware is never owned Longer time commitment than rental (Any ONE)
Purchasing	Total ownership and control of hardware Can sell equipment (Any ONE)	High initial investment Cost of maintenance Equipment becomes obsolete over time (Any ONE)

(Any 1 advantage and 1 disadvantage) (3 × 2) (6)

5.5 Advantages
- Lower risk – know what you are getting
- Cheaper – many customers share the cost of development
- Tried and tested – error-free
- Should include training materials
- Often includes maintenance and support (Any THREE)

Disadvantages
- Might include ongoing licence fees
- Never own the source code, so cannot really make changes
- Might not be exact business fit (6)

5.6
- Reduced training costs
- Expertise
- Reduced support costs
- Reduced complexity – fewer complications when putting things together
- Interoperability – working together easily
- Volume discounts for purchasing and support (Any 4 × 1) (4)

[30]

QUESTION 6

6.1 6.1.1 Way in which organisations plan for future and provides objectives

6.1.2 Set or mix of products, brands and services offered to clients

6.1.3 Set of information system applications that support key business areas as well as cross-functional business operations

(3 × 2) (6)

6.2
- Investment plans
- Technology implementation plans
- Organisational transformation plans (3)

6.3
- Determining a shared vision of where the organisation should go
- Determining the goal they want to achieve
- Planning on how to achieve those goals (3)

6.4
- Defining the project scope and estimating the size of the project
- Defining and managing the work plan
- Staffing the project
- Controlling and monitoring project activities (4)

6.5 6.5.1 A system request document is a formal document used to summarise the details relating to proposed information system development project. (2)

6.5.2
- Project manager
- Business analyst (2)

6.6
- Rivalry amongst current competitors
- Threat of new entrants
- Threat of substitute products
- Bargaining power of customers
- Bargaining power of suppliers (5)

6.7 Strategically planning (top level)
- Looks at company vision and goals
- Develops strategies and policies towards achieving business goals using technology (Any ONE)

Tactical planning (middle level)
- Setting objectives, designing tactics to achieve strategies
- Defining, prioritising and scheduling information system projects that will need implementation to achieve defined strategy (Any ONE)

Operational planning (lower level)
- Control of day-to-day operations
- Resource management (Any ONE)

(1 mark for level of planning, 1 mark for relevant explanation) (6)

6.8
- Means by which position of an organisation is examined in terms of its state✓✓
- Important during planning as it provides us information about a current or future level of achievement of some business measure✓✓✓
- Provides means to plot course or route from current position to desired position✓✓✓ (8)

6.9
- Internal business factors
  Include strengths and weaknesses of organisation in terms of company portfolio and available resources
- External business factors
  Factors that make up environment in which organisation exists and competes
- Internal information system factors
  Include system portfolios and information systems resources.
- External information system factors
  Include changes in technology, technology costs, skill and availability

(1 mark for factor, 1 mark for reason) (4 + 4) (8)

[47]

QUESTION 7

7.1 7.1.1 Assessment of practicality of proposed plan or method

7.1.2 Refers to project that has seen its original goals expand while in progress

7.1.3 Percentage rate that compares total net benefits (the return) received from project to total costs (investment) of project

(3 × 2) (6)

7.2 organisational (2)

7.3 P = Performance
I = Information and data
E = Economic issues
C = Control or Security
E = Efficiency of processes or people
S = Service both internally and externally (6)

7.4 Root-cause analysis

- Method of problem solving used for identifying the root causes of faults or problems
- Focuses on underlying causes of problems and tries to remove them
- Used for more complex or serious problems
- Problems should be prioritised by users during problem analysis

(Any THREE)

Problem analysis

- Focuses on understanding problem and finding a solution to it
- Seeks ideas and input from users and managers
- Useful and effective for improving efficiency and ease to use systems
- Focuses on problem, not underlying problem (Any THREE)

(2 × 3) (6)
[20]

SECTION B: 160
GRAND TOTAL: 200

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