



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF COMPUTING AND INFORMATICS**

**DEPARTMENT OF INFORMATICS, JOURNALISM AND MEDIA TECHNOLOGY**

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| <b>QUALIFICATION : BACHELOR OF INFORMATICS HONOURS (WEB INFORMATICS, BUSINESS INFORMATICS)</b> |                                  |
| <b>QUALIFICATION CODE: 08BIFH, 08BIHB</b>  | <b>COURSE LEVEL: NQF LEVEL 8</b> |
| <b>COURSE: ENTERPRISE ARCHITECTURE</b>   | <b>COURSE CODE: EAT810S</b>      |
| <b>DATE: JULY 2022</b>   | <b>PAPER: THEORY</b>             |
| <b>DURATION: 3 Hours</b>   | <b>MARKS: 90</b>                 |

| <b>SECOND OPPORTUNITY/SUPPLEMENTARY EXAMINATION QUESTION PAPER</b> |                              |
|--|------------------------------|
| <b>EXAMINER(S):</b>  | <b>Dr Irja Shaanika</b>      |
| <b>MODERATOR (S):</b>  | <b>Dr Michael Twum-Darko</b> |

**THIS EXAMINATION PAPER CONSISTS OF 5 PAGES  
(INCLUDING THIS FRONT PAGE)**

**Instructions for the students**

- 1. Answer ALL the questions.**
- 2. Write clearly and neatly.**
- 3. Number the answers clearly.**

**Section A: True and False Questions****[10 marks]**

1. IT systems became an essential infrastructure required to execute day-to-day business activities of private companies only. [1 mark]
2. For many modern companies, the successful execution of any business strategy may be largely equivalent to the successful delivery of corresponding information systems implementing this strategy. [1 mark]
3. A digital environment only creates opportunities for improving existing and developing new products and services but does not pose considerable threats to many organisations. [1 mark]
4. Enterprise Architecture has not much in common with traditional architecture. [1 mark]
5. One-way companies respond to conflicting demands is to adopt different operating models at different organizational levels. [1 mark]
6. Business-supporting Enterprise Architecture domains are virtually unrelated to specific business functionality of IT systems. [1 mark]
7. Artifacts implicit duality is when different parts of Enterprise Architecture artifacts are relevant to different groups of actors. [1 mark]
8. Standardised Technology Architecture is the stage of Enterprise Architecture mature where companies look to maximize individual business unit needs or functional needs. [1 mark]
9. An operating model is a system of governance mechanisms that ensures business and IT projects achieve both local and company-wide objectives. [1 mark]
10. The Operating Model captures how an organization delivers products to its customer. [1 mark]

**Section B: Structured Questions****[50 marks]****Question 1:****[8 Marks]**

Briefly describe some of the scenarios that have made information systems become more powerful, ubiquitous, diverse, and affordable among organisations.

**Question 2:**

**[8 Marks]**

The successful utilisation of information systems requires consistent coordination in three broad organisation aspects: People, Process and Technology. When it comes to the process aspect, briefly discuss some of the actions that can be implemented to ensure the success of any new high-impact IT.

**Question3:**

**[8 Marks]**

With examples, briefly discuss any two disruptive technologies of how they pose significant threat to many organisations.

**Question 4:**

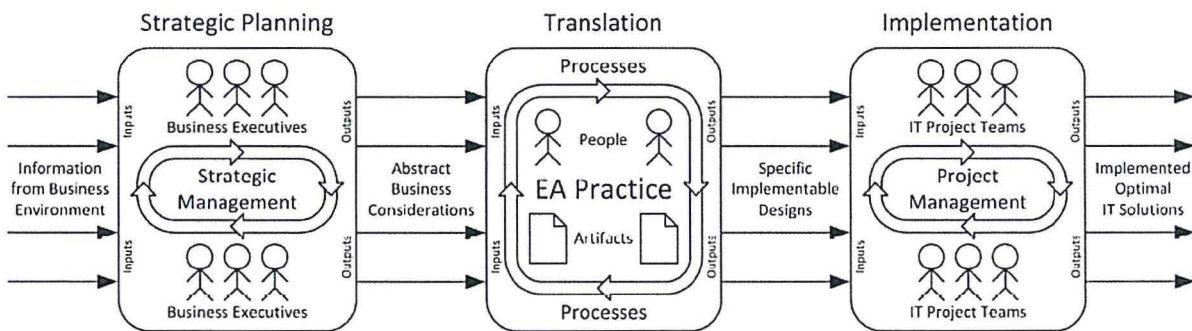
**[6 Marks]**

Explain how business managers and IT Specialists in modern organisations are dependent on each other.

**Question 5:**

**[6 Marks]**

With regards to the diagram below, discuss the linkage between Enterprise Architecture practice and other process:



**Question 6:**

**[8 marks]**

Briefly discuss the Operating Model implications toward the implementation of the Enterprise Architecture Practice.

**Question 7:**

**[6 marks]**

Describe the purpose of each level of the Parsons/Thompson Model:

## Section C: Case Study Questions

[30 marks]

Read the following case study and answer questions below.

### Enterprise Architecture at Chubb Industries

Enterprise architecture (EA) at Chubb was the framework the organization used to align IT and the business. EA provided a target architecture for business leaders and IT professionals to use to collaborate and to enable the company to adapt and prosper. "Our EA is the glue that brings Business and IT together," claimed Chubb CIO, Jim Knight. Chubb Industries, which now operates in 54 countries and territories, is the largest publicly traded property and casualty insurance company in the world and the largest commercial insurer in the United States. Having been founded in North America in 1792, it may well be one of the oldest underwriting companies.

CIO Knight had put in place a decentralized (federated) EA in place to support Chubb's seven lines of business (LOB). However, after six years he realized that tweaks to the decentralized EA were not able to deal with problems that surfaced over time. In particular, standards weren't being followed closely enough and the business units were focusing on their own unit's goals but suboptimizing on the organizational goals. The decentralized approach inhibited agility because it misaligned IT and the enterprise business strategy, created duplication, and impeded coordination across the LOBs. Knight decided to consolidate the LOB architects into a centralized enterprise IT organization with a broader scope.

CIO Knight reorganized Chubb's IT group to have a Chief Architect/Architecture Practice Lead who reported to the Chief Development Officer who, in turn, reported to Knight himself. A Manager in charge of Development also reported to the Chief Development Officer. The Manager in charge of Infrastructure reported directly to Knight. The new IT organization was designed to deliver integrated solutions to the business.

One of the first things Knight did was create a target architecture with four major components: *Architecture Principles* (i.e., general rules and guidelines including "Be business oriented with a business-driven design," "Promote consistent architecture," etc.); *Architecture Governance* (i.e., practices to manage at the enterprise-wide level including controls, compliance obligations, processes, etc.); *Conceptual Reference Architectures* (i.e., target architecture support domains including business, application, information and technical architectures, policy administration, advanced analytics, i.e., content management); and, *Emerging Technology* (processes to promote innovation and explore emerging technologies). The target architecture used 50 architecture compliance rules derived from the TOGAF framework.

All new projects were issued a "building permit" by the Architecture Governance Board and were assigned one or more architects from the five EA domains (i.e., Business, Application, Information, Technical, and Security) to ensure that the target architecture was being adhered

to. The architects submitted artifacts and design documents for review and formal approval. Any deviations from the architecture rules must be corrected or remediated. The architects worked closely with the project leader.

It was believed by the IT executives that the new EA model delivered value to the business, helped determine the new technologies that offered the greatest potential benefits, and provided better access to IT intellectual capital. The LOBs get the resources that are most appropriate for meeting their needs. But it wasn't only the IT people who thought the EA added value. Dan Paccico, the Senior Vice President and Controller, said: "Chubb now has better long-term and strategic planning reflecting an enterprise point of view."

**Question 1:** [5 Marks]

The CIO claimed: "Our EA is the glue that brings Business and IT together". Clarify how EA as a tool can glue Business and IT together.

**Question 2:** [5 Marks]

Chubb Industries, which now operates in 54 countries and territories, is the largest publicly traded property and casualty insurance company in the world. With regards to the above statement list and justify the type of operating model Chubb Industries belong to.

**Question 3:** [5 Marks]

Discuss the interdependency between five Enterprise Architecture domains (Business, Application, Information, Technical and Security)

**Question 4:** [10 marks]

Briefly, explain the informational contents of artifacts that were submitted and designed for review.

**Question 5:** [5 Marks]

Analyse this Chubb scenario below "CIO Knight had put in place a decentralized (federated) EA in place to support Chubb's seven lines of business (LOB). However, after six years he realized that tweaks to the decentralized EA were not able to deal with problems that surfaced over time. In particular, standards were not being followed closely enough and the business units were focusing on their own unit's goals but sub-optimising on the organisational goals. The

decentralized approach inhibited agility because its misaligned IT and the enterprise business strategy, created duplication, and impeded coordination across the LOBs.”

Under which EA maturity stage would you place Chubb organisation and Justify why.

**Question 6:**

**[5 Marks]**

Discuss the implication that might arise from poor communication and the lack of mutual understanding between the below mentioned actors.

“CIO Knight reorganized Chubb's IT group to have a Chief Architect/Architecture Practice Lead who reported to the Chief Development Officer who, in turn, reported to Knight himself. A Manager in charge of Development also reported to the Chief Development Officer. The Manager in charge of Infrastructure reported directly to Knight.”

The End