

Final exam - Short-long questions

● Graded

Student

Lihang Shen

Total Points

11.75 / 24 pts

Question 1

Q1

1 / 3 pts

✓ + 1 pt **Barely Clear.** Answers contain inaccuracies or incomplete thoughts. Identification/Definition is mostly inaccurate. Key ideas/explanations are somewhat unclear or disorganized, showing a limited understanding of the topic. Little to no examples are provided to adequately support the answer.

+ 2 pts **Partially Clear.** Answers are mostly correct and covers the main aspects of the question, though it may lack detail or depth in some areas. Relevant examples or reasoning are provided but has minor issues or not detailed/completed.

+ 3 pts **Full Marks.** Answers are comprehensive, accurate and complete. Identification/Definition is correct. The response fully addresses the question with clear, well-organized ideas. It demonstrates a deep understanding of the topic, providing relevant examples or evidence to support the answer.

+ 0 pts **Incorrect/Missing.** The answer is missing or does not address the question at all

Question 2

Q2

1 / 3 pts

✓ + 1 pt **Barely Clear.** Answers contain inaccuracies or incomplete thoughts. Identification/Definition is mostly inaccurate. Key ideas/explanations are somewhat unclear or disorganized, showing a limited understanding of the topic. Little to no examples are provided to adequately support the answer.

+ 2 pts **Partially Clear.** Answers are mostly correct and covers the main aspects of the question, though it may lack detail or depth in some areas. Relevant examples or reasoning are provided but has minor issues or not detailed/completed.

+ 3 pts **Full Marks.** Answers are comprehensive, accurate and complete. Identification/Definition is correct. The response fully addresses the question with clear, well-organized ideas. It demonstrates a deep understanding of the topic, providing relevant examples or evidence to support the answer.

+ 0 pts **Incorrect/Missing.** The answer is missing or does not address the question at all

💬 TOGAF has 3 domains: data, technology, business, and architecture. There needs to be more explanation for each of the mentioned.

Question 3

Q3

0 / 3 pts

+ 1 pt Barely Clear. Answers contain inaccuracies or incomplete thoughts. Identification/Definition is mostly inaccurate. Key ideas/explanations are somewhat unclear or disorganized, showing a limited understanding of the topic. Little to no examples are provided to adequately support the answer.

+ 2 pts Partially Clear. Answers are mostly correct and covers the main aspects of the question, though it may lack detail or depth in some areas. Relevant examples or reasoning are provided but has minor issues or not detailed/completed.

+ 3 pts Full Marks. Answers are comprehensive, accurate and complete. Identification/Definition is correct. The response fully addresses the question with clear, well-organized ideas. It demonstrates a deep understanding of the topic, providing relevant examples or evidence to support the answer.

✓ **+ 0 pts Incorrect/Missing.** The answer is missing or does not address the question at all

💬 Your discussion should have the gist that- "The given information is reliable in terms of consistency but lacks validity due to the inaccuracy of the measurement"

Question 4

Q4

2.75 / 3 pts

+ 1 pt Barely Clear. Answers contain inaccuracies or incomplete thoughts. Identification/Definition is mostly inaccurate. Key ideas/explanations are somewhat unclear or disorganized, showing a limited understanding of the topic. Little to no examples are provided to adequately support the answer.

+ 2 pts Partially Clear. Answers are mostly correct and covers the main aspects of the question, though it may lack detail or depth in some areas. Relevant examples or reasoning are provided but has minor issues or not detailed/completed.

✓ **+ 3 pts Full Marks.** Answers are comprehensive, accurate and complete. Identification/Definition is correct. The response fully addresses the question with clear, well-organized ideas. It demonstrates a deep understanding of the topic, providing relevant examples or evidence to support the answer.

+ 0 pts Incorrect/Missing. The answer is missing or does not address the question at all

💬 **- 0.25 pts** Point adjustment

Question 5

Q5

1 / 3 pts

✓ **+ 1 pt Barely Clear.** Answers contain inaccuracies or incomplete thoughts. Identification/Definition is mostly inaccurate. Key ideas/explanations are somewhat unclear or disorganized, showing a limited understanding of the topic. Little to no examples are provided to adequately support the answer.

+ 2 pts Partially Clear. Answers are mostly correct and covers the main aspects of the question, though it may lack detail or depth in some areas. Relevant examples or reasoning are provided but has minor issues or not detailed/completed.

+ 3 pts Full Marks. Answers are comprehensive, accurate and complete. Identification/Definition is correct. The response fully addresses the question with clear, well-organized ideas. It demonstrates a deep understanding of the topic, providing relevant examples or evidence to support the answer.

+ 0 pts Incorrect/Missing. The answer is missing or does not address the question at all

💬 No explanation provided about the rights and did not relate to the scenario.

Question 6

Q6

1 / 3 pts

✓ + 1 pt **Barely Clear.** Answers contain inaccuracies or incomplete thoughts. Identification/Definition is mostly inaccurate. Key ideas/explanations are somewhat unclear or disorganized, showing a limited understanding of the topic. Little to no examples are provided to adequately support the answer.

+ 2 pts **Partially Clear.** Answers are mostly correct and covers the main aspects of the question, though it may lack detail or depth in some areas. Relevant examples or reasoning are provided but has minor issues or not detailed/completed.

+ 3 pts **Full Marks.** Answers are comprehensive, accurate and complete. Identification/Definition is correct. The response fully addresses the question with clear, well-organized ideas. It demonstrates a deep understanding of the topic, providing relevant examples or evidence to support the answer.

+ 0 pts **Incorrect/Missing.** The answer is missing or does not address the question at all

Question 7

Q7

2 / 3 pts

+ 1 pt **Barely Clear.** Answers contain inaccuracies or incomplete thoughts. Identification/Definition is mostly inaccurate. Key ideas/explanations are somewhat unclear or disorganized, showing a limited understanding of the topic. Little to no examples are provided to adequately support the answer.

✓ + 2 pts **Partially Clear.** Answers are mostly correct and covers the main aspects of the question, though it may lack detail or depth in some areas. Relevant examples or reasoning are provided but has minor issues or not detailed/completed.

+ 3 pts **Full Marks.** Answers are comprehensive, accurate and complete. Identification/Definition is correct. The response fully addresses the question with clear, well-organized ideas. It demonstrates a deep understanding of the topic, providing relevant examples or evidence to support the answer.

+ 0 pts **Incorrect/Missing.** The answer is missing or does not address the question at all

► More justification is needed to showcase why this framework was chosen.

Question 8

Q8

3 / 3 pts

+ 1 pt **Barely Clear.** Answers contain inaccuracies or incomplete thoughts. Identification/Definition is mostly inaccurate. Key ideas/explanations are somewhat unclear or disorganized, showing a limited understanding of the topic. Little to no examples are provided to adequately support the answer.

+ 2 pts **Partially Clear.** Answers are mostly correct and covers the main aspects of the question, though it may lack detail or depth in some areas. Relevant examples or reasoning are provided but has minor issues or not detailed/completed.

✓ + 3 pts **Full Marks.** Answers are comprehensive, accurate and complete. Identification/Definition is correct. The response fully addresses the question with clear, well-organized ideas. It demonstrates a deep understanding of the topic, providing relevant examples or evidence to support the answer.

+ 0 pts **Incorrect/Missing.** The answer is missing or does not address the question at all



THE UNIVERSITY OF
SYDNEY

10:40

Room Number

S458

Seat Number

12

Student Number

49005114811

ANONYMOUSLY MARKED

(Please do not write your name on this exam paper)

CONFIDENTIAL EXAM PAPER

This paper is not to be removed from the exam venue

Computer Science

EXAMINATION

Semester 2 - Final, 2024

INFO5990 Professional Practice in IT (Paper)

For Examiner Use Only

Q (Sec A)	Mark
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
SEC A Total	

EXAM WRITING TIME: 2 hours

READING TIME: 10 minutes

This examination paper consists of 15 pages.

EXAM CONDITIONS:

Calculator - non-programmable

This is a RESTRICTED OPEN book exam - Students are allowed to bring 1-A4 size cheat sheets of notes (double-sided)

MATERIALS PERMITTED IN THE EXAM VENUE:

(No electronic aids are permitted e.g., laptops, phones)

None

MATERIALS TO BE SUPPLIED TO STUDENTS:

1 x 15-page answers book

Answer sheet: Gradescope MCQ (single-sided - 100 Qs)

Blank scratch paper (student will be provided with answer booklet)

INSTRUCTIONS TO STUDENTS:

- a) Calculators are permitted.
- b) This exam contains 2 sections:
- c) **Section A:** 16 multiple-choice style questions - tests core knowledge (16 marks).
- d) **Section B:** 8 x short written answers (target ~50-200 words) - tests your ability to analyze information and synthesize ideas (3 marks each, total 24 marks)
- e) Answer all questions in the allocated space.
- f) Questions are worth equal marks. The mark to be awarded for each part is indicated.

Q (SEC B)	Mark
1	
2	
3	
4	
5	
6	
7	
8	
Sec B Total	

Please tick the box to confirm that your examination paper is complete.



Total Score _____

Section A:

Multiple-choice style questions - tests core knowledge

Marks: 16 x 1 = (16 marks)

- B 1. Imagine your company is implementing a new SCM (Supply Chain Management) software system into the organization with the help of an IT team. Considering the role of IT in organizations, how can this SCM software add value to the organization? [1 mark]
- A) By maintaining traditional business functions
B) By changing business processes and introducing new functions
 C) Limiting innovation in business models
 D) Disregarding technological advancements
- C 2. A business model describes how an organisation creates, delivers, and captures value. It is primarily based on which of the following elements? [1 mark]
- A) Business goal
B) Business Objective
C) Business Strategy
D) Business Operating Model
- B 3. Which of the following is a commonly accepted perspective on employees in change management? [1 mark]
- A) Employee resistance occurs but not frequently
B) Employee resistance is expected and considered normal during change
C) Employee resistance only occurs in small organizations
D) Employee resistance is irrelevant to the change process
- A 7 4. In which of the following ways does DevOps create business value? (Select the best possible answer) [1 mark]
- A) Enabling faster feedback cycles for enhanced customer experiences
B) Minimizing customer feedback cycles
C) Maximizing project size
D) Increasing hardware reliability

C 5. What type of project estimation model is the Constructive Cost Model (COCOMO) an example of? [1 mark]

- A) Function Point
- B) Component Matrix
- C) Algorithmic Model
- D) The sum of the parts

C 6. Which approach does Quality Assurance (QA) use to ensure a company provides the best products or services? (Select the best possible answer) [1 mark]

- A) Customer-centered approach
- B) Innovation-centered approach
- C) Process-centered approach
- D) Employee-centered approach

A 7. Which of the following testing methods employs white box testing to ensure that each component of the application functions correctly? [1 mark]

- A) Component Testing
- B) Integration testing
- C) System Testing
- D) Acceptance Testing

A 8. Imagine a development team aiming to ensure the system's stability over an extended period of usage. The testing team runs a scenario where the website experiences a continuous, heavy load for 48 hours. The goal is to detect any memory leaks, performance degradation, or other issues that may arise over this period. What type of **Testing** is this? [1 mark]

- A) Soak Testing
- B) Stress testing
- C) Performance testing
- D) Load testing

C 9. Which of the following cybersecurity standard focuses on secure payment card data handling for merchants and payment processors? [1 mark]

- A) ISO/IEC 27001
- B) NIST Cyber Security Framework
- C) PCI DSS
- D) HIPAA

B 10. Which security control primarily ensures data integrity? [1 mark]

- A) Technical Control
- B) Physical Control
- C) Administrative Control
- D) Audit

D 11. NIST cyber-Security Framework has 5 functions. Which of the following functions is NOT included in the NIST Cybersecurity Framework? [1 mark]

- A) Protect
- B) Detect
- C) Monitor
- D) Recover

guideline to manage and reduce risk

D 12. What is the primary focus of the Egoism ethical framework? [1 mark]

- A) Universal moral principles X
- B) Collective well-being of society
- C) Cultural norms and traditions
- D) Individual's situation and self-interest

D 13. Which of the following is considered a fundamental element of a Business Intelligence (BI) system? [1 mark]

- A) Data Warehouse
- B) Business Analytics tools
- C) User Interface
- D) All of the above

C 14. Which of the following is **NOT typically** recognized as a standard OLAP operation? [1 mark]

- A) Slicing ✓
- B) Dicing ✓
- C) VLOOKUP
- D) Pivot ✓

C 15. Imagine you have been assigned a non-graded practice assignment that an instructor will review. You could have submitted a friend's work with minimal edits since it is not graded, but you chose to complete the assignment yourself.

In this situation, what term best describes your Ethical commitment to honesty guided by your values? [1 mark]

- A) Teleological X
- B) Etiquette
- C) Personal ethics
- D) Professional ethics X

D ? 16. What does **GDPR** stand for? [1 mark]

- A) Government Data Privacy Rules
- B) General Digital Protection Requirements
- C) Global Digital Privacy Regulation
- D) General Data Protection Regulation

Section B:

8 short written answers (target ~50-200 words. Please write your answers inside the allocated space)

Tests your ability to analyze information and synthesize ideas

(3 marks each, a total of 24 marks)

1. Is there a relationship between the IT operating model and the organizational strategy? Justify your answer. [3 marks]

Yes, Business strategy includes IT Strategy and IT Strategy tells how to construct IT operational Model. A Business Strategy is a plan to achieve business goal, and IT operational model should highly align to the IT Strategy which derive from organizational strategy. That's why they are highly related.

2. Explain any three domains of The Open Group Architecture Framework (TOGAF), which is an enterprise architecture framework. [3 marks]

They are Technical, Data, Application. By using TOGAF, company can improve their:

- decision making by using new technical, such as some data driven analytical tools
- use of resources, such as build a data warehouse for resource sharing within company
- Efficiency by using more powerful management tools, such as an ERP System. Can reduce the process of cross-functional collaboration among different departments

3. Imagine you receive a report indicating that a machine learning-based medical test consistently yields the same results for a group of patients. However, a detailed examination reveals that the test does not accurately measure what it claims to assess.

Based on this scenario, how would you assess the **reliability and validity** of the information? Justify your answer. [3 marks]

I will assess the reliability by using following methods

- make sure data is real (i.e. not made up by someone), such as collecting from real cases
- make sure the machine learning workers are professional

I will assess the validity by using following methods

- The machine learning model is correct
- The size of the data is large enough to represent most patients

4. Differentiate between load testing, soak testing, and stress testing, providing appropriate examples [3 marks]

Load Test: the goal is to assess the performance under expected load condition. the test scenario is simulate concurrent users or transactions within expected limits. Such as, test whether a system can handle 1000 users concurrently.

Soak Test: the goal is to evaluate system stability over time. the test scenario is sustain load over an extended periods. Such as, test the performance of system after 72 hours of continuous usage

Stress Test: the goal is to identify breaking points and recovery behavior. the test scenario is to push system beyond its limits, and observe failure and recovery. Such as, observe the failure reason and recover speed of a system after receiving 10 times the normal traffic

5. Scenario: During the COVID-19 vaccination campaign, a healthcare provider incorrectly records a patient's date of birth and last name. This error leads to significant issues with the patient's vaccination record, including difficulties in obtaining their vaccination certificate, which is essential for travel and access to certain public spaces, and the risk of potential medical errors. Therefore, the patient submits a formal request to the healthcare provider for the correction of their personal information.

Based on the scenario, identify and explain the **specific individual right in GDPR** that the patient is exercising by requesting the correction of their personal information. [3 marks]

The right is "right to access the correct information". Even this patient can access his/her information record, but his/her record is incorrect. As a result, the medical company needs to make sure they store the correct data.

6. What is a social engineering attack? Describe **any three tactics** that attackers commonly use to execute such attacks. [3 marks]

Social engineering attack is psychological manipulation that tricks people into revealing sensitive information or taking action aiding cyberattacks. Some tactics are

- Phishing Attack: Deceptive communication to steal personal information. Such as, emails pretending to be from a bank asking for login information.
- Provide a fake website of some real exist websites, such as Amazon, to mislead user input their password.
- Send warning message to user and ask them to provide they are not criminals. During self proofing, user will always lose their personal information or property.

7. Imagine you are a government official responsible for urban planning, and your team proposes a development project that could displace a small community but promises significant economic growth, job creation, and improved infrastructure for the entire city.

By favoring the project to maximise overall social welfare, which ethical framework are you following? Justify your answer. [3 marks]

I follow the Utilitarianism ethical framework. This framework is based on total situation of most people. It makes sure my project can cover most people within the community. Namely, most people will accept this project because their life quality increase. Most people is covered also means the project maximize the overall social welfare.

Since it is really difficult to cover all people within the community.

8. Imagine you need to combine data from multiple sources, process it, and ingest it into a large Data Warehouse repository. What is this entire process called, and how does it work? [3 marks]

It's called ETL. It works by firstly gather unstructured data from multiple sources, such as media, document. Then it will categorize those data into different type. After some tuning and analyzing, those data will become organized. Then data Analytics will try to find hidden trend inside those data. Finally, store those data into corresponding data warehouse.

One example could be sort data according to their date of release.

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END OF EXAMINATION

