SEMESTER 2 2020 FIT1049 MOCK EXAM (WITH SAMPLE RESPONSES)

QUESTION 1: **Professional communications and practice (10 marks)**

You are in the third year of your university course, and you have found the following advertisement for a graduate opportunity in a technology role at Monash Bank, i.e. one of the leading banking institutions in Australia. Using your own authentic experiences, write an email to a generic HR email address for this company as appropriate. You do not need to include in your answer the recipient's email nor the subject heading.

We're looking for students from a wide range of degree backgrounds who are completing their degree in 2020-2021. You'll be looking to gain real experience and to help us create success for clients, colleagues and communities. You can build your own future as you contribute to ours.

In our technology team, you'll join more than 1,500 people based all around the world working on delivering innovative solutions across our business areas. Technology is critical to our organisation remaining at the forefront of digital change and driving our businesses to continued success.

By joining the Monash Bank Internship Program, you'll become an integral member of the team for your entire placement. In a technology role, you'll sit side by side with business leaders and help shape the strategy of our work. You'll be given ownership of a diverse range of projects and be responsible for continuing to find ways to improve and evolve our technology and data offerings.

In order to be successful, you will have strong technical skills, communications skills, as well as the ability to work in dynamic teams whose members come from a wide range of professional backgrounds across the world.

If you are interested, please send us an expression of interest that briefly outlines your motivation and suitability for the role via email at <recruitment@monashbank.com.au>. Selected applicants will then be invited to submit a formal application.

To: <_recruitment@monashbank.com.au_>
Subject: Expression of interest for the Monash Bank Internship Program
Attached: None

Dear Sir/Madam,

I am writing to express my interest in participating in the Monash Bank Internship Program. I am a current third-year student enrolled in the Bachelor of Information Technology at Monash University, with a major in Data Science. I have always been interested in the use of IT in the field of finance and commerce. I thus find this internship an exciting opportunity to further develop my understanding of the field I am interested in, while also further developing my technical and professional skills.

Alongside my study, I have also been working as a part-time Systems Developer for a local not-for-profit charity organization. In this role, I work with many staff and volunteers with a diverse range of backgrounds and experience in IT. This experience has helped me further develop the abilities to effectively work in various busy teamwork environments through effective communications.

With the skills I learnt in my study, as well as the above experience, I believe that I would make a suitable candidate for the internship, and I would welcome an opportunity to submit a formal application in the near future. Please let me know if you require further information in the meantime. I can be contacted either by email at this address, or by telephone on 04XX-XXX-XXX. I look forward to hearing from you soon, and thank you for your consideration.

Kind regards,

[Your name]

Semester 2 2020 FIT1049 Mock Exam (with sample responses)

QUESTION 2: Information gathering, analysis and processing (10 marks)

You are working in the Digital Team in a company that sells educational Apps for schools, and are asked to develop a presentation to be given at a professional development event in the company. The event will be attended by co-workers from different sections across the company, and many of them do not have any IT or technical background. The presentation will be about the use of artificial intelligence (AI) as part of the company's products.

As part of the research you have conducted so far, you found the following source on the Internet. You consider using this source in order to argue how important it is to remove any potential biases in the datasets as part of the product development process using AI. On the basis of the information provided below, briefly describe what kind of additional research you would conduct to establish the **currency, authority,** and **accuracy** of this specific source, in order to determine whether this source is suitable as a reliable source for your presentation.

Title: "Unlocking AI's Potential for Social Good"
Date of publication: 27 October 2020
Author: Mark Purdy, who is "an independent economics and technology advisor based in London, UK", according to the article.
Publication outlet: *Harvard Business Review*, i.e. a magazine published by Harvard Business Publishing, which is a publisher owned by Harvard University in the US. It aims to "provide professionals around the world with rigorous insights and best practices to help lead themselves and their organizations more effectively and to make a positive impact", according to the publisher's website. The magazine is not an academic publication, but is a well-established publication known to have attracted many contributions from leading academics and business leaders.

To establish the **currency** of the source, I would search for more recent sources that confirm or undermine the up-to-date-ness of the main claims in Purdy's article. Purdy's article was published only a few weeks ago, so its main claims are likely to still be current unless there have been significant recent developments in artificial intelligence since late October.

To establish the **authority** of the source for my research purpose, I would search for other credible sources that verify Purdy's expertise in relation to artificial intelligence and data curation. The publisher's association with Harvard University should support (but not guarantee) the authority of the source.

To establish the **accuracy** of the source, I would note the specific claims made in Purdy's article, and then search for other credible sources to either verify or falsify the claims (or to reconsider Purdy's presentation of the claims in relation to other perspectives).

QUESTION 3: Narrative construction and dissemination (10 marks)

Following Question 2, you are preparing a presentation about the use of artificial intelligence (AI) as part of the company's products. You have decided to use the source you analysed in Question 2, and you are specifically interested in using the following information from the same source as part of the presentation.

Most real-world datasets are not statistically representative by definition — they represent the outcome of various societal and institutional biases. A healthcare database, for example, reflects a series of filters around which people get the disease, who gets treated, and whose data gets recorded in the database. So we need to correct for built-in biases at every turn. In using AI-based systems, a first step for businesses, governments, and regulators must be to carefully scrutinize the process by which their training datasets are created. Greater openness around the broad structure and parameters of datasets can help organizations spot gaps and biases, as well as provide extra reassurance around the integrity of such data.

3a. Imagine that you are to capture this information in one slide as part of your presentation, and aim to use the information to argue how important it is to remove any potential biases in the datasets as part of the product development process. Develop textual/written elements of this slide using a hierarchical style of visual composition (e.g. the Minto Style). Your slide should succinctly represent the key points relevant to the specific purpose as outlined in the scenario. (n.b., do not forget to include in-text citations.) (5 marks)

Removing potential biases in the AI training datasets

Real-world data as representative of the biases in its origin
- e.g. Various societal and institutional biases (Purdy, 2020)

Importance of greater openness of the data structure and parameters
- For effective identification of gaps/biases (Purdy, 2020); and
- For extra reassurance for the integrity of training datasets (Purdy, 2020)

3b. Briefly explain the principles behind your response above, i.e. in what ways you have reorganised the original information in order to make it relevant to the specific purpose outlined in the scenario. (5 marks)

I reorganised the information to mainly highlight the reason and benefits for removing the potential biases from the AI training datasets, since this will support the main message of this slide, which is about why such removal is important.

The slide is thus organised hierarchically in such a way to first present why the removal of data biases is necessary, and then to present what kind of benefits such removal will deliver as a result. In this process, I have also removed some of the references to businesses, governments and regulators, since these are not relevant to the audience, and I have also reworded some of the phrases to make them more generic so that it will communicate to those without IT backgrounds.

QUESTION 4: Situational management and interpersonal communications (10 marks)

You have just joined the IT Department of Monash Consulting. One of the first tasks you were given was to clean up the draft meeting minutes taken by your predecessor (who left the job very recently). In the draft meeting minutes, the following text passage (Item 4.5) was found.

<mark>Rewrite as appropriate to correctly document</mark> this item for meeting minutes. For your reference, the names and the title of these individuals are:

- Mr Bob Washingmachine (IT Manager; Chair of the meeting)
- Ms Sue Pebble (Senior Systems Analyst)
- Mr Peter White (Systems Analyst)
- Ms Jean Brown (Systems Analyst)

Item 4.5: Security features for the Payroll Systems

For this item, Bob said that we can discuss freely about the topic, and he wanted to brainstorm what kind of features can be implemented in our Payroll System used in the company. Sue then said she thinks we should first look into the features that come with other systems used by our competitors. But Peter White said that it may not be a good idea since we do not have much time, and some people agreed. Jean was also one of the people who agreed. Jean was interested in the way one of the systems she previously used in another company kept all the logs of the users and their activities. We had more discussion, but eventually we voted for Sue's suggestion, with Bob's additional suggestion that Sue and Jean work together and report back to the next meeting. The suggestion was voted in favour. Bob seconded, and then motion was also moved by Sue.

Item 4.5: Security features for the Payroll Systems

The Chair asked the attendees to discuss what security features can be implemented in the company's payroll systems. While there was some concern over the time it might take, it was agreed that the department would review the security features used by competitors to see what might work best for our own payroll systems. The chair requested that Senior Systems Analyst Sue Pebble and Systems Analyst Jean Brown conduct this review and report back at the department's next meeting.

Sue Pebble moved the motion that she and Jean Brown conduct a review of competitors' security features for potential implementation in Monash Consulting's Payroll Systems, to be reported at the next department meeting. The proposal was seconded by the Chair. A majority voted in favour of the motion, and the motion passed.

QUESTION 5: Teamwork and professional behaviours (10 marks)

Respond to the following questions based on the scenario below.

You have been working in a team of five (5) on a software development project for two weeks. All the team members come with different professional expertise and background, and from the beginning there have been some disagreements within the team about the general approach your team should take to software development.

Meanwhile, your team does have a dedicated project manager, but he is relatively new to the organisation. Even though he is a competent developer, he is not confident enough to take initiatives in the team's discussion, fearing that his suggestions may not be well-received by his team members. You also notice that all the team members, including the project manager, are on the same level of seniority in the organisation. This is making the team's dynamics at times overly informal, if not unprofessional.

You just attended the fourth meeting for the project, but the team is still struggling to come to an agreement on the general direction of the project. There was also an argument between two of the team members about resource allocations, but the rest of the team failed to make any useful or constructive intervention. After this incident, you all found it a little awkward to figure out how to conduct day-to-day work in close proximity to each other.

5a. Identify which of Tuckman's stages of team development your team is in (1 mark).

Storming

5b. Explain the reasons why your team is in the stage you identified (see answer above for Question 5a), by noting the characteristics of the stage you identified (3 marks).

The team members seem to be experiencing some trial-and-error here, as members grapple with differing skills sets, knowledge, experience and expectations about task outcomes. In this case the similarity in seniority levels between team members is contributing to the uncertainty as people are unsure about what level of formality is required to communicate effectively with each other. The need at the storming stage to negotiate, make some compromises, and so on can be challenging, and this scenario is a good example of this kind of experience at this stage.

5c. Describe two potential risks for this team in terms of teamwork (3 marks), and explain how you could minimise these risks (3 marks).

There is weak leadership by the project manager, and also the lack of clear leadership from any other members of the team that has low power concentration. As a result, this 'storming' stage is not facilitated in a controlled and constructive manner to progress to the next stage, and there is a risk of a prolonged storming stage that would delay the progress. This risk may be managed if we are to implement clear protocols for regular and more structured communications (e.g. meeting minutes) about progress and deadlines.

There is also some confusion and disagreements based on the different backgrounds and expertise the members bring in to this team. It might be helpful if I were to suggest that the team members explicitly agree on their individual roles and expected contributions/outcomes, in order to overcome the lack of structure arising due to the low power concentration and different perspectives and expectations within the team.

QUESTION 6: Professional ethics and legal frameworks for IT professionals 1 (10 marks)

Respond to the following questions based on the scenario below. For your reference, a summary of the ASC Code of Ethics is also provided below the scenario.

Julie is working as an IT Systems Analyst for a small start-up IT company, which has been in operation for two years. The company's main product is a mobile payment system that enables mobile phones to be used as a Point-Of-Sales (POS) device, so that businesses such as gardeners and plumbers can use their mobile phone for credit card transactions at their customers' homes. Julie's company supplies both the hardware as well as the software, and sets them up for clients' specific use as part of the service. While Julie's company purchases the hardware from another vendor, the software is developed in-house, a process with which Julie has been involved. The company has been generally successful, but with its newness and the initial investment it made when the company was established, the financial situation is rather tight. The company will go bankrupt if its sales drop.

A few weeks ago, Julie noticed some strange behaviour with the software. It worked fine almost all the time, but there were times when the system charged the customers a random number of times. This problem only happened very occasionally, and there has been no pattern to the problem. Julie's company has not disclosed this issue to its clients yet, since it fears the negative effects the issue may have on the company, and its sales and reputation. Knowing the company's financial difficulty, Julie agrees to remain silent, while also finding technical solutions to eliminate this problem as soon as possible.

A summary of the ASC Code of Ethics

1. **The Primacy of the Public Interest:** You will place the interests of the public above those of personal, business or sectional interests.
2. **The Enhancement of Quality of Life:** You will strive to enhance the quality of life of those affected by your work.
3. **Honesty:** You will be honest in your representation of skills, knowledge, services and products.
4. **Competence:** You will work competently and diligently for your stakeholders.
5. **Professional Development:** You will enhance your own professional development, and that of your staff.
6. **Professionalism:** You will enhance the integrity of the ACS and the respect of its members for each other.

6a. List one each of the actual and potential ethical issues (i.e. one actual issue and one potential issue), making reference to the values in the ACS Code of Ethics. (4 marks)

Actual issue: Julie's company compromised its adherence to the value of *Competence*, since it knowingly released a product that is still incomplete. [You can also discuss in terms of *Primacy of the Public Interest*, *Enhancement of Quality of Life*, or *Honesty*.]

Potential issue: Julie and Julie's company both potentially acted against the value of *Professionalism*, since such unprofessional behaviour would compromise the public's confidence in the IT profession in general.

6b. What should Julie do now, to deliver better, if not entirely positive and professional, outcomes? And why? Describe and justify your responses in light of the values in the ACS Code of Ethics. (3 marks)

Julie should argue for the company to at least make a public notice of the defect, outlining the risks the defect poses to the users, and also the actions the company is taking to rectify the issues in the meantime. This will be aligned with the values of *Honesty* and *Competence*, and to some extent compensate the earlier breach of *The Primacy of the Public Interest* and *The Enhancement of Quality of Life*.

6c. What could Julie have done alternatively in the first place to prevent the issues from developing? And why? Describe and justify your responses in light of the values in the ACS Code of Ethics. (3 marks)

Julie should have argued against the release of this product until the cause of the issue was identified and addressed. This action may go against the *Enhancement of Quality of Life* value, since this decision would not benefit the company in the short term. However, in light of the other values Julie's company would compromise by overlooking the issue (i.e. *Honesty, Competence, The Enhancement of Quality of Life*, and above all *The Primacy of the Public Interest*), it is best to take the above action overall.

QUESTION 7: Professional ethics and legal frameworks for IT professionals 2 (10 marks)

Respond to the following questions based on the scenario below.

Jess works for a game development company as a Developer, but having completed a qualification in graphic design, she also runs her private online business as a successful graphic designer. Although both roles involve her IT skills, they are very different and require very separate sets of expertise.

One day, Jess told her manager at the game development company about her graphic design business, and the manager was very interested and asked her to show him some of her design work. Impressed, the manager also asked if she would like to take on some graphic design work for the company, for which the company would pay for her service separately from her Developer role at the company. The manager also requested a few more high-resolution design samples of her work so that he could present them to the management.

Excited by the prospect, Jess agreed and provided the manager with the high-resolution samples. Jess, however, did not hear from the manager on this matter after providing him the samples. Later, Jess found her samples were being used as part of the company website's design elements without her knowledge. Jess was understandably upset and made a complaint, and her design was eventually taken down from the website. Jaded by the experience, she later resigned from her role at the company, and looked for a role in the field of graphic design.

7a. Which of the following legal protections would Jess' work have: copyright, patent, or trademark? (2 marks) Briefly explain why. (3 marks)

Jess's graphic designs are protected by copyright. Copyright protects creative works such as graphic designs, while patents are used to protect inventions. Also, while a graphic can be trademarked, it has not been in this case.

7b. Imagine that there was a two-year Non-Compete Clause (NCC) in the contract she had signed when she first entered this game development company. Does this Non-Compete Clause have any implications to Jess' current situation? Explain your response. (5 marks)

The NCC in Jess's contract may say that she is not permitted to work in the same role or industry for a competitor for the two year period. In Australia, most NCCs are considered invalid, except for narrow circumstances where they are reasonably necessary to protect the employer's legitimate business interests. In this case, Jess was employed as a game developer at the company, and the graphic design work was not part of her role; this is demonstrated by her discussions with her manager where he agreed that she would be paid separately for her graphic design work.

The NCC should not be able to stop her working in the field of graphic design, or continuing to run her own graphic design company, which was separate from her employment in game development. As this is a different role/industry, the NCC would not apply.

QUESTION 8: Professional ethics and legal frameworks for IT professionals 3 (10 marks)

Respond to the following questions based on the scenario below.

Mary has been working as a programmer at a small development company for five years. While she has had a very positive experience with her team and the workplace, the recent deployment of a new colleague (Sam) to her team changed the situation.

For example, Sam repeatedly makes offensive remarks about women that are intended as 'jokes'. Mary feels uncomfortable about these behaviours from Sam, even though she understands that they are not targeted towards her personally. Mary also knows that some of her team members also find Sam's behaviours confronting. One colleague, who sits next to Sam, confides to Mary that he overhears Sam frequently swearing.

Sam nevertheless is not aggressive to his colleagues, and there is a general understanding amongst the team that this is his mannerism, and that he does not have any malicious intention towards any of the team members. Mary nevertheless spoke to Sam as a colleague that some of his behaviours actually make her feel uncomfortable. Sam just responded to Mary that this is how he has always behaved in his previous workplaces, implying that it is okay for him to behave in the same manner.

8a. Which of the following describes the situation best: bullying, discrimination, or inappropriate behaviours? (2 marks) Briefly explain why. (3 marks)

Inappropriate behaviours. Bullying involves repeated unreasonable behaviours targeted towards a specific person, while (workplace) discrimination results in an adverse effect, such as termination of employment or unfavourable deployment. From this perspective, Sam's behaviours do not fall in either bullying or discrimination.

8b. If Mary asked for your advice on what she should do next, what would you suggest to her? Explain the advice you could suggest to her, and provide justifications for your advice (assuming that you are not acting in any managerial capacity). (5 marks)

It would be useful to suggest and encourage Mary to speak to HR or the line manager in the first place. Since Mary has already taken a reasonable action to prevent the colleague from behaving unprofessionally (however with no effect), it is appropriate to escalate this by seeking advice from the manager or HR for further action.

QUESTION 9: Organisational governance and information management (10 marks)

Respond to the following questions based on the scenario below.

As a Business Analyst, you have just joined the Melbourne branch of a large global consulting firm. As part of your induction into the organisation, you were told that the firm has several different branches all spread across five different countries.

As you settled into your team, you were told by your manager that your first project would be to review the IT security policies and procedures from all the branches, and try to streamline as much as possible so that there will be some consistency in the IT security activities and operations across different branches.

As you started to liaise with the local contacts in each branch, you soon realised the enormous scale of this task. You found that not all the branches have a work unit dedicated to IT or IT security, and many of the branches have complex decision-making processes with their own internal governance structure. You also found that these branches are operating as if they are semi-autonomous entities, even though they are all part of the firm.

9a. Which of the following describes the likely structure of this organisation: divisional, functional, or matrix? (2 marks)

It is likely that this organisation has a divisional structure of management.

9b. Identify two potential challenges inherent to the organisational structure in this scenario, and explain how these challenges would influence your task in this scenario. (4 marks)

In the divisional structure, the autonomy given to each division allows the divisions to have their own set of governance structures and processes. This may result in the complex processes of obtaining authorisation if I was to suggest any changes to the policies and procedures in different divisions.

This autonomy also allows different operational practices in each division, and this may result in some limitations to the extent of consistency I can achieve with this project in the IT security activities and operations across different divisions.

9c. How do *procedures* differ from *guidelines*? Explain the difference between these concepts, and give an instance where *guidelines* could be used in the context of the organisational structure described above. (4 marks)

Procedures are designed to be enforceable within the organisation, while guidelines are not. In the organisational structure described above, one may use guidelines when consistent enforcement of a particular procedure is not viable (e.g. due to different regulations in different countries).

QUESTION 10: Organisational communications, stakeholder engagement and IT security (10 marks)

Respond to the following questions based on the scenario below.

You are working as an IT security analyst for a large banking organisation. Because of your expertise in penetration testing, most of the work you do is technical, and you rarely interact with the bank's external clients in your usual security analyst role.

Meanwhile, the bank's Communications Team is planning a special communication campaign to raise the customers' awareness on some of the common cyberattacks used to target them. The Communications Team recently asked you to write a series of short articles to be posted on the bank's social media site. In these articles you are expected to comment on recent IT security breaches in the industry, and explain how your organisation counters such threats.

The bank's Communication Team thought that these articles would give the customers some sense of reassurance that the bank is taking some tangible actions to counter such threats, hence further building their confidence in the organisation. You also know that this campaign was triggered by a recent cyberattack incident that took place in a rival institution (also a bank), and the Communication Team is also hoping that this campaign would make a competitive advantage for the bank's brand against other rival institutions.

10a. Which of the following stages of crisis management are you most likely to be in in this situation: *preparation*, *identification*, *containment*, *eradication*, *recovery* or *lessons learnt*? (1 mark) Explain why. (3 marks)

Preparation. The organisation is yet to be engaged in an incident, and is conducting a communication exercise that aims to raise the awareness and confidence of the clients.

10b. Identify and describe *one potential organisational communication challenge* and *one stakeholder management challenge* in the management of this situation, briefly explaining why these challenges apply to the particulars of this specific situation. (6 marks)

Organisational communication challenge: By writing about what kind of strategies your company is taking to counter the threats, you may be revealing to outsiders too much of the organisational knowledge of given threats, as well as the organisation's counter-measures.

Stakeholder management challenge: The reassurance to be provided needs to be realistic, and should not be committing the organisation to a false promise that leads the clients to believe that the threats are avoidable.