

MARK SCHEME

Section A: Source-Based Case Study

- 1 Study Source A.**
What is the message of this source? Explain using details from the source.

[5]

Target Skill: Making inferences

<u>Level</u>	<u>Band Descriptor</u>	<u>Marks</u>
L1	Describes cartoon/ no interpretation/ wrong interpretation Misinterpretation: Robots are becoming like humans as they are able to speak to each other. Humans are happy that A.I. can perform many functions such as writing, singing and art. Description of source: A robot is speaking to humans and showing that it is better than humans.	1m
L2	Messages that address only the positive impact of using AI <i>Award 3m for supporting evidence</i> <u>Positive Impact</u> E,g. The message of the cartoon is how much A.I. has progressed and is developing to help people in their jobs. The cartoonist views A.I. as beneficial to people as it makes work more efficient and produces better quality work in many areas. This is evident in how the robot says, 'I can do anything better ' and gives examples such as term papers, writing and art.'	2-3m
L3	Main message that addresses the cartoon as a whole <i>Award 5m for supporting evidence</i> <u>Negative Impact</u> E,g. The message of the source is that A.I is fast developing to the extent that it is becoming a threat to society. This is evident in how the robot says, 'I can do anything better than you' and gives examples such as term papers, writing and art. The man standing in front of the robot also holds a paper showing 'Your job'. This suggests that not only is A.I. getting better at arts-related industries such as writing and art, but may even be better at jobs from all industries in time to come. This may lead to humans losing their jobs to A.I. / replacing humans / humans becoming redundant. OR The message of the source is that A.I. is developing fast and surpassing the capabilities of humans. Source A shows a comment made by the woman , 'Great, it even sings Broadway musicals'. Art is a very 'human' form of expression that taps into our emotions. For the A.I. robot to be able to sing, it shows how A.I. might even reach that level of human consciousness and emotion.	4-5m

- 2 Study Sources B and C.**
How similar are these two sources? Explain your answer.

[6]

Target Skill: Comparison

L1	Similar or different based on provenance/topic / false matching <i>Award 1m if student address the stand as similar or different</i> e.g. Both sources are different. B is from an interview and C is from a website.	1-2m
L2	Similar or different, criteria established <i>Award 4m for valid support from both sides</i>	3-4 m

	Similar e.g. <u>Both sources are similar on the capabilities/ efficiency of A.I.</u> Source B mentions, 'ChatGPT's programming prowess has already made a mark on many developers.' And 'It already functions as a "co-pilot" for programmers' which shows how AI is able to aid people in their work, especially programmers. Similarly, Source C mentions 'Furthermore, A.I. algorithms can recognise patterns that may be difficult for the human eye to spot, leading to more accurate detection of malicious activity.' This shows that A.I. is capable of completing tasks that are harder for humans to do. OR Different e.g. <u>Both sources are different in terms of their views of whether companies should adopt the use of A.I. for their operations.</u> Source B states that, 'The company Microsoft chose to partner with Altman's OpenAI to integrate its technology into Bing search.' This means that Altman supports companies in using AI to ease their processes. However, Source C states that, 'Recently, news reports have revealed that many global businesses are considering or have already implemented a ban on using ChatGPT and other A.I. applications within the workplace due to concerns over data privacy.' This shows that companies are instead more conservative/hesitant/reluctant in their willingness to adopt A.I. at the workplace. Other answers accepted : e.g. <u>Difference : A.I. used for war using cyber attacks vs A.I. used against cyber attacks (one for offense, one for defense)</u> e.g. <u>Similarity : Agree that A.I. helps to fill in the gaps by doing jobs that even humans have difficulty doing.</u>	
L3	Agree and Disagree, criteria established <i>Award 4m for vague criteria/ inadequate source support</i> <i>Award 5m for more developed answers.</i>	4-5m
L4	Similar in purpose, explained <u>Both sources are similar in what they are both trying to achieve.</u> As the CEO of OpenAI, Sam Altman would be trying to convince businesses/ netizens that A.I. brings about many benefits at the workplace. This is seen in the source that says ". It already functions as a "co-pilot" for programmers, Altman said, and OpenAI is working toward unlocking a similar functionality for "every profession. It would represent an opportunity to come up with a better kind of job. The CEO is trying to get his audience to see so that A.I. complements many functions at the workplace. He said that so that he <u>can could continue to sell his technology (ChatGPT) to companies.</u> Similarly, Source C is by Terranova Security, a company which specialises in providing cybersecurity training. Hence it would be convincing companies of the benefits of using A.I. in their cybersecurity plans, This can be seen in the source that says "A.I. has become a powerful tool in the fight against cyber threats as it can help detect, analyze, and respond to malicious attacks faster." This means that A.I. is a necessity if companies want to keep themselves safe from cyber attacks. Businesses <u>will then hire Terranova Security to provide such cybersecurity training for them.</u>	6m

- 3 **Study Source D.**
How useful is this source as evidence about the use of Artificial Intelligence (A.I.)? Explain your answer. [7]

Target Skill: Utility

L1	Answers based on provenance or description. <i>Award L1/1 for answers that do not address utility</i> e.g. It is a personal view by an experienced journalist and would be one-sided.	1m
L2	Answers based on source content <i>Award 3m for a developed answer</i> e.g. <u>The source is useful as it tells me that A.I. has the potential to take away the job/ livelihood of individuals.</u> From the source, "I'm not comfortable with the idea of A.I. taking over our jobs." This suggests that A.I. will be able to replace journalists soon. OR e.g. <u>The source is useful as it tells me that there are limitations to A.I.</u> From the source, "AI may be able to mimic human writing, but it doesn't have the same heart and soul. And I hope companies recognised that." This suggests that A.I. may not be totally effective as it is lacking a personal human touch. OR Not useful due to missing information <i>Award the higher mark for more fully developed answers.</i> e.g. The source is not useful as the opinion of the journalist is one-sided and does not consider the possibility of using A.I. in the work process. The fact that John is a freelance journalist may also illicit such negative reaction from him as he may be replaced easily.	2-3m
L3	Both sides of L2	4m
L4	L2 + Reliable / not reliable and useful/ not useful due to cross reference <i>Award the higher mark for more fully developed answers.</i> <i>Award L2/3 for cross reference that do not address reliability</i> <u>The source is reliable and useful as the idea that there are limitations to A.I. can be confirmed when we cross-reference to Source E.</u> Source E says "It's all about using it in the correct way so you can still have the human touch in music, which A.I. can't create." This tells us that in the music industry, A.I. is limited in its function as AI cannot truly enhance music by replicating the human touch. This is similar to what Source D says "I'm not comfortable with the idea of A.I. taking over our jobs. Journalism is a human endeavour, and it's important for us to have a personal touch in our work. AI may be able to mimic human writing, but it doesn't have the same heart and soul." This suggests that A.I. may not be able to replace the human element especially in the creative field. <u>As the idea that there are limitations to A.I. can be confirmed when we cross- reference to Source E, Source D is therefore reliable and useful.</u> <i>Cross-reference to BI is also acceptable. (From BI – "In the area of creativity and writing, overreliance on A.I. diminishes the humanistic element.")</i>	5-6m
L5	Reliable and useful due to a broader context, supported e.g., The source is reliable and useful as it highlights the dilemma in the field of journalism with the introduction of A.I. Although this is a personal account by a journalist, the journalist is voicing out the fears of many journalists who fear the impact of A.I. While journalists acknowledge that AI increases efficiency and productivity in handling large volumes of data, there is also increased concern that A.I. might take over their jobs one day. This can be seen from the source, "I'm not comfortable with the idea of AI taking over our jobs. Journalism is a human endeavour, and it's important for us to have a personal touch in our work. A.I. may be	7m

	able to mimic human writing, but it doesn't have the same heart and soul. And I hope publishing companies recognised that." Despite the extensive use of A.I. in the creative industry, <u>people are not willing to use A.I. entirely for their work/ cautious attitude of creatives towards A.I.</u> . This highlights a need for publishing companies <u>to calibrate their reliance on A.I. and not to remove human journalist who are more effective than A.I. technology totally.</u> Hence the source is reliable and thus useful.	
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Study Sources E and F.

Having read Source F, are you surprised by Source E's comments on the use of Artificial Intelligence (A.I.)? [7]

Target Skill: Comparison and Surprised

Level	Band Descriptor	Marks
L1	Surprised or Not surprised but does not explain why <i>Award 0 marks for arguments that does not address surprised or not surprised</i> e.g. After reading E, I am not surprised with F as both are written about A.I.	1m
L2	Surprised or Not surprised due to explanation of E or F <i>Award 3m for a reason why surprised/ not surprised</i> e.g. I am not surprised by Source E because the source states that "I don't think we should be too afraid to embrace these new tools and see how they can help us, rather than replace us. This is not surprising as Alan Walker had already used technology to make music as an artiste / DJ, so the use of A.I. should not come as a surprise. OR e.g. I am not surprised by Source F because the source states that "Why pay an actual artist a licensing fee to use their song in a commercial or on a show when you can generate one that sounds similar enough." Music companies would want to make the most money of the songs they produce with the least amount put in, thus it is not surprising they are using A.I. which comes at a fraction of the cost as compared to paying licensing fee to the actual artist.	2-3m
L3	Surprised/ Not Surprised based on agreement/ disagreement of content of Sources E and F <i>Award 4m for arguments with evidence and criteria from both sources.</i> E.g. <u>I am not surprised by Source E after reading Source F because Source F supports Source E in stating that human musicians will not be redundant due to A.I.</u> Source E states that "It's all about using it in the correct way so you can still have the human touch in music, which A.I. can't create". This means that A.I. has its limitation in creating music so human musicians are still relevant. This is supported by Source F which says, "A.I. isn't going to replace human musicians..." which means that Human musicians will still have a role to play in making music OR E.g. <u>I am surprised by Source E after reading Source F because Source F opposes Source E in terms of whether A.I. will threaten the livelihood of real musicians.</u> Source E states that, "I don't think we should be too afraid to embrace these new tools and see how they can help us, rather than replace us." This means that Alan Walker does not see A.I. as a threat to musicians' livelihood as it can be used to enhance their music. However, Source F opposes Source E which says that "Why pay an actual artist a licensing fee to use their song in a commercial or on a show when you can generate one that sounds similar enough". This means that A.I. 's ability to create music will be a cheaper alternative to hiring musicians to make music thus reducing the earnings of musicians.	3-4m
L4	Both sides of L3 <i>Award 5m for arguments with a reason why surprised/ not surprised.</i>	4-5m

L5	L3 + Cross Reference <i>Note: The stand must be consistent with the reasoning; the cross-referencing checked must be on the same focus in Sources E and F before a conclusion is made on Source F; and content from Sources E and F should be used to support the reasoning.</i> e.g. <u>I am not surprised by Source E after reading Source F because Source F supports Source E in stating that people working in the creative industry will not be redundant due to A.I.</u> Source E states that "It's all about using it in the correct way so you can still have the human touch in music, which A.I. can't create". This means that A.I. has its limitation in creating music so human musicians are still relevant. This is supported by Source F which says, "A.I. isn't going to replace human musicians..." which means that human musicians will still have a role to play in making music <u>In addition, Sources E and F views on A.I. not replacing humans in the creative industry is also supported by Source D which describes A.I. being used in the field of journalism to help enhance the work of the journalists rather than replacing them.</u> This is seen in Source D that says, "They argue that A.I. will bring benefits such as processing large data and identifying trends." This complements the work of journalists as they have to manage a massive amount of information to write their articles or news. As Source E and Source F's views are supported by Source D, I am not surprised with F after reading E.	6m
L6	Not surprising due to developed provenance (with reference to context) <i>Answer need to reference to the stand</i> <i>Conclusion is made on the main source</i> <i>Award 7m for arguments that made use of evidences from both sources</i> After reading E, I am not surprised by F as in recent years, there is rising fear people have over the use of A.I. This is especially so in creative industries like art and music. Source E mentions A.I. has the possibility of 'replace us' or 'used as a weapon'. This shows the possibility of A.I. being used to replace creative artistes, thus affecting their livelihood. Source F also mentions 'A.I. cuts opportunities to collect licensing fees', showing that music producers prefer to cut corners and save costs by using A.I. Such fears are not unfounded as A.I. can easily replicate work and designs in seconds as compared to the original work which might take months or even years to complete. Eg using A.I. generators to replicate images in the style of Studio Ghibli, going against the ethos of Studio Ghibli and its co-founder Miyazaki.	7m

5 "A.I. has a positive impact on society'. Using the sources in this case study, explain how far you would agree with this statement.

[10]

Target skill: Assertion

Level	Band Descriptor	Marks
L1	Writes about statement, no valid use/ specific knowledge	1m
L2	Yes/ No, supported by valid source use <i>Award 2 marks for 1 explained source.</i> <i>Award 3-4 marks for 2 explained sources.</i> <i>Award 4m for 3 explained sources.</i> A valid explained source should include the following: 1. A valid stand 2. Evidence (quote or paraphrase) 3. Inference of evidence (not paraphrasing) 4. Outcome, Reason why or Significance (not paraphrasing) Agrees that A.I. has a positive impact on society : A,B,C,E <u>Source B agrees that A.I. has a positive impact on society. A.I. will not be harmful to society because it can be used to ease the workload in jobs.</u> This is evident in Source B, how ChatGPT "It already functions as a "co-pilot" for programmers" and may unlock 'a similar functionality for "every profession." This shows that A.I. technology like ChatGPT can be useful in the future to assist people with their jobs. A.I. can do difficult jobs and analysis and find solutions to societal problems.	2-4m

Level	Band Descriptor	Marks
	e.g. <u>Source C agrees that A.I. has a positive impact on society. This is because people can make use of A.I. to build up protection against any possible cyber attacks.</u> This is seen in Source C that says "AI has become a powerful tool in the fight against cyber threats as it can help detect, analyze, and respond to malicious attacks faster. A.I. algorithms can recognise patterns that may be difficult for the human eye to spot, leading to more accurate detection of malicious activity." A.I. can complement human efforts as it can perform difficult tasks and identify any form of cyber threat swiftly and more accurately. This helps countries and organisations to respond better as they will be able to detect and prevent possible cyber threats faster and more effectively, thus allowing peace to prevail in society. OR e.g. <u>Source C agrees that A.I. has a positive impact on society. This is because it can provide opportunities for companies to develop and profit.</u> This is evident in Source C, how Terranova Security provides cybersecurity training using AI and 'companies worldwide are investing heavily in its application'. This means that tech companies will benefit from the rise of A.I. and the technology developed can be used to further enhance our security. This will mean that companies can then sell this technology to help countries respond to cyber attacks which can possibly threaten peace in any country. e.g. <u>Source E agrees that A.I. has a positive impact on society. This is because A.I. can be used to enhance the quality of creative work like music.</u> This is mentioned in the source that says "if I'm not strong in coming up with an idea or melody, or I'm trying to improve a melody, I could use a tool to help me overcome this challenge or when I am seeking creativity.all I'm trying to do is show how you could effectively use it to build your own songs and use it as a tool and not a weapon in the industry." A.I. should be seen as a benefit to society as better quality music can be made for all to enjoy. Or Disagrees that A.I has a positive impact on society: A, B, D, F e.g. <u>Source A disagrees that A.I. has a positive impact. This is because the cartoonist views A.I.as a threat to job security.</u> This is evident in how the robot says, 'I can do anything better than you' and gives examples such as term papers, writing and art. The man standing in front of the robot also holds a paper showing 'Your job'. In this case, when A.I. advances to the point of replacing humans at their jobs, this would affect their livelihood and hence standard of living and quality of life. e.g. <u>Source B disagrees that A.I. has a positive impact. because it could be used to mislead people if fallen in the wrong hands (authoritarian governments)</u>This is evident in 'We do worry a lot about authoritarian governments developing artificial intelligence technology' and how Putin mentioned that 'whoever becomes the leader in A.I. technology "will be the ruler of the world'. This shows that A.I. could be used by countries to launch cyber attacks, affecting the security/ harmony in society. <u>e.g. Source D disagrees that A.I. has a positive impact. This is because the use of AI has taken over people's jobs and contributed to unemployment.</u> This can be seen in Source D which says "while others fear that it could lead to mass unemployment and loss of creativity." This is especially so for people working in creative industries, As A.I. can do the same job and even better and faster, there is not much need to pay people to do the same job. The effect is a loss of talents in the creative industry, leading to higher unemployment rates and an overall drop in the quality of living. E.g. <u>Source F disagrees that A.I. has a positive impact. This is because the use of A.I. will mean people will lose opportunities.</u> This is seen in Source F that says "A.I. isn't going to replace human musicians, but in future, it's going to 'cut' them out of opportunities to collect licensing fees that they have now because businesses just don't have the budget for a human composer." Companies looking to cut costs will choose to use A.I. instead of paying additional fees for a human composer. This will affect certain occupations as jobs will be affected, thus increasing the rate of unemployment which can become a societal problem.	
L3	Yes + No, supported by valid source use Award 5 marks for 2 explained source. Award 6 marks for 3 explained sources.	5-8m

Level	Band Descriptor	Marks
	<i>Award 7-8 m for 4 explained sources. Award 8m for 5 explained sources.</i> Note: - If there is <u>imbalance of sources</u>, example 1 agree, 3 disagree; 1 agree 5 disagree, candidates will be awarded a maximum of 6 points only. - Assessment is based on quality and not quantity. <u>Through analyzing at least one source in relation on to its reliability, utility or sufficiency (whether there is anything lacking in the source).</u> e.g. Source B is a reliable source which gives a balanced viewpoint. In the source, the CEO of OpenAI shares both the opportunities and challenges posed by A.I. Even though he may have a vested interest in only sharing the positive side of AI, he does share some troubling concerns such as A.I. being used by authoritarian governments or for cyberattacks. These are bound to get worse in the future. As the CEO, he is probably well-equipped with knowledge of A.I. and if humanity is not able to address these issues, then the problems he listed may become a reality. By sharing example(s) from their contextual knowledge. E.g. Source C mentions 'combining A.I. with the human factor is the key to staying secure and compliant in a digital world.' This means that while acknowledging the concerns and controversies related to the increasing use of A.I., we should recognise that A.I. offers many benefits, A.I. has been used in medical sciences, e.g. disease detection, medical diagnostics. In education and learning, we can make use of A.I. generated automated feedback. A.I. can also be used to get early warning for disaster response. On the other hand, using chatbots and robots may mean missing the human element. One can also abuse the use of A.I. to generate deep fake videos and photos, fake news or misinformation. Thus, there is a need to calibrate the use of A.I. One should not rely entirely on it but use it as a tool to complement work.	

Section B: Structured-Response Question

5. Extract 1 shows how Singapore is becoming a 'super-aged' society. In your opinion, how can we help the elderly in Singapore age well? Explain your answers using two strategies.

Level	Band Descriptor	Marks
L1	Describes the topic E.g. Singapore is facing an ageing population, where the number of seniors in the country is increasing exponentially.	1m
L2	Identifies/describes strategies Award 2m for identifying one strategy and 3m for identifying two strategies. Award 3m for describing one strategy and 4m for describing two strategies.	2-4m
L3	L2 + Explains reasons Award 5m for explaining a strategy, up to 6m. Award 6-7m for explaining both strategies. E.g. <u>One strategy is to teach the elderly about technological advancements so that they will be able to keep up with them.</u> As Singapore becomes a smart nation, e-payment is on the rise. Hence, we can teach our grandparents and other elderly how to use cashless payment methods such as PayLah! and Paynow by scanning QR codes. <u>By helping the elderly keep up with the latest technological advancements, the elderly will not feel out of place or socially isolated. Despite their age, they would feel like they can continue keeping up with these current trends. It would also allow them to be independent and feel confident in going about their daily lives, helping them age well.</u> E.g. <u>Another strategy is creating community programmes for seniors to participate in.</u> This may include group activities such as community gardening or even tai-chi classes in the nearby neighbourhood parks. For example, Active Ageing Centres conduct karaoke and game sessions with the help of volunteers every week. This would allow the elderly to pass	5-7m

	their time, especially if they are lonely during the day. <u>Joining these activities would help them form social connections. Moreover, these activities would engage them keeping their minds active as well. Hence, this strategy would allow them to age well.</u>	
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6. Extracts 2 and 3 show the role that community groups and the government play in strengthening citizens' sense of belonging in Singapore.

Do you think community groups have a more important role to play than government in working to strengthen citizens' sense of belonging? Explain your answer. [8]

Level	Band Descriptor	Marks
L1	Writes about topic, unexplained Award 2m for additional details.	1-2m
L2	Describes. Award 3m for describing 1 group Award 4m for describing 2 groups	3-4m
L3	Writes about two impact, explained Award 5-6m for explanation of 1 group Award 6-7m for explanation of 2 groups <u>Community groups have an important role to play in strengthening citizens' sense of belonging. They can come together to preserve memories of a place and render assistance to those affected by the relocation. These groups usually have a clear objective or a location they are working on, though they may informally work with a few individuals coming together to run them. For example, in line with the demolition of Dakota Crescent, two community groups, namely Dakota Adventures and Run and Gun Media came together to form Between Two Homes. This group created a multimedia website to document the rich heritage and community of Dakota Crescent and showed the impact of relocation. They also conducted workshops in schools to discuss the plans for redevelopment. Documenting such memories of Dakota Crescent allows the residents and other Singaporeans to preserve the experiences and memories that they had there. Seeing their memories being preserved, allows the residents of Dakota Crescent to feel that they have a place in society and strengthen their sense of attachment towards Singapore.</u> <u>The government has an important role to play in strengthening citizens' sense of belonging. The government creates opportunities for citizens to come together and participate in surveys, focus group discussions and workshops to contribute ideas for the design of neighbourhood spaces. They may also provide funding required to support ground-up projects that build the national identity. For example, the Our Singapore Fund was launched in 2016 by the Singapore government, giving successful applicants funding of up to 80% of their project, to a maximum of \$20 000 per project. As of 2020, the Ministry of Culture, Community and Youth has disbursed \$4.3 million to support ground-up projects like Between Two Homes. This funding provided by the government allowed Between Two Homes to care for residents who were relocating and even conduct potluck parties in Cassia Crescent, where they had relocated to. This contributes to building a sense of belonging as common memories are shared by the new residents, allowing them to develop a sense of attachment and feel comfortable in their new homes.</u>	5-7m
L4	Both aspects of L3 plus explains the relative importance of each group In conclusion, the government's role is a more important one as the funding they provide is crucial to sustain the projects that are introduced to strengthen the citizen's sense of belonging in the long term. Community groups may also not have sufficient resources and legitimacy to execute the plans in Singapore.	8m