

2024



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# AP<sup>®</sup> Seminar End-of-Course Exam

## Sample Student Responses and Scoring Commentary Set 2

### **Inside:**

#### **Part A**

- Scoring Guidelines**
- Student Samples**
- Scoring Commentary**

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## End-of-Course Exam: Part A

15 points

### General Scoring Notes

- When applying the scoring guidelines, you should award the score according to the preponderance of evidence (i.e. best fit).
- Except where otherwise noted, each row is scored independently.

### 0 (Zero)

Scores of 0 are assigned to all rows of the rubric when the response is off-topic; a repetition of a prompt; entirely crossed-out; a drawing or other markings; or a response in a language other than English.

### NR (No Response)

A score of NR is assigned to responses that are blank.

**Question 1: Argument, main idea, or thesis**

**3 points**

Reporting Category	Scoring Criteria			
<b>Row 1</b>	<b>0 points</b>	<b>1 point</b>	<b>2 points</b>	<b>3 points</b>
<b>Understand and Analyze Argument</b>	Does not meet the criteria for one point.	The response misstates the author’s argument, main idea, or thesis.	The response identifies, in part and with some accuracy, the author’s argument, main idea, or thesis.	The response accurately identifies the author’s argument, main idea, or thesis.
<b>(0-3 points)</b>	<b>Decision Rules and Scoring Notes</b>			
	<b>Typical responses that earn 0 points:</b> <ul style="list-style-type: none"> <li>Are irrelevant to the argument (do not even relate to the topic or subject of the text)</li> </ul>	<b>Typical responses that earn 1 point:</b> <ul style="list-style-type: none"> <li>Misidentify the main argument or provide little or no indication of understanding of any part of the main argument.</li> <li>Just state the topic of the argument.</li> <li>Restate the title or heading.</li> </ul>	<b>Typical responses that earn 2 points:</b> <ul style="list-style-type: none"> <li>Accurately identify only part of the argument (part is omitted or is overgeneralized).</li> <li>Describe all parts, but either vaguely or with some inaccuracy.</li> </ul>	<b>Typical responses that earn 3 points:</b> <ul style="list-style-type: none"> <li>Correctly identify all of the main parts of the argument.</li> <li>Demonstrate understanding of the argument as a whole.</li> </ul>
		<b>Examples that earn 1 point:</b> <b>Misidentify the main argument</b> <ul style="list-style-type: none"> <li><i>“Other people around the world deserve access to affordable and reliable clean energy.”</i></li> </ul> <b>Restate the title or heading</b> <ul style="list-style-type: none"> <li><i>“Nuclear could be the clean energy sources the world needs.”</i></li> </ul> <b>Scoring note:</b> Responses that only identify part 1 of the argument must score 1 because the entire idea is captured in the title of the article.	<b>Examples that earn 2 points</b> <b>Identify only part of the argument</b> <ul style="list-style-type: none"> <li><i>“Nuclear energy is a clean option that is more reliable than wind and solar.”</i></li> <li><i>“The world should adopt Nuclear energy as a clean option but public perception of nuclear energy as dangerous has inhibited its progress.”</i></li> </ul> <b>Describe all parts, but either vaguely or with some inaccuracy</b> <ul style="list-style-type: none"> <li><i>“Nuclear energy is cleaner and has less problems than other sources despite what people think.”</i></li> </ul> <b>Scoring note:</b> A response must identify either part 2 or part 3 to receive 2 points.	<b>Examples that earn 3 points:</b> <b>Include all parts of the argument</b> <ul style="list-style-type: none"> <li><i>“Nuclear energy is a clean solution to global energy problems because it produces a lot of energy without a large physical footprint and is more reliable than wind and solar. However, fear from the public and politics have slowed down its success.”</i></li> </ul>
	<b>Additional Notes</b> <b>The argument/thesis has three main parts:</b> <ol style="list-style-type: none"> <li>Nuclear energy can be a solution to energy demands.</li> <li>Nuclear energy is superior to other forms of clean energy. (A response must include a specific point of comparison for this part: either by stating nuclear energy is better than wind or solar OR providing a reason for its superiority, for example, small footprint, more efficient, reliability, produces less waste.) (A response might also make the inverse argument “other forms of energy are inferior because...”)</li> <li>There are concerns about the adoption of nuclear energy (Accept: public fear/perceptions of reactors and nuclear waste being dangerous OR any acknowledgment of the limitations of nuclear energy.)</li> </ol>			

**Question 2: Explain line of reasoning** **6 points**

Reporting Category	Scoring Criteria																		
<p><b>Row 2</b></p> <p><b>Understand and Analyze Argument</b></p> <p><b>(0-6 points)</b></p>	<p><b>0 points</b></p> <p>Does not meet the criteria for two points.</p>	<p><b>2 points</b></p> <p>The response correctly identifies at least one of the author’s claims.</p>	<p><b>4 points</b></p> <p>The response provides a limited explanation of the author’s line of reasoning by accurately identifying some of the claims AND identifying the connections or acknowledging a relationship among them.</p>	<p><b>6 points</b></p> <p>The response provides a thorough explanation of the author’s line of reasoning by identifying relevant claims and clearly explaining connections among them.</p>															
<b>Decision Rules and Scoring Notes</b>																			
<p><b>Typical responses that earn 0 points:</b></p> <ul style="list-style-type: none"> <li>Do not identify any claims accurately.</li> </ul>					<p><b>Typical responses that earn 2 points:</b></p> <ul style="list-style-type: none"> <li>Accurately identify only one claim.</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>Identify more than one claim but make no reference to connections between them.</li> </ul>					<p><b>Typical responses that earn 4 points:</b></p> <ul style="list-style-type: none"> <li>Accurately identify some claims but there are some significant inaccuracies or omissions.</li> </ul> <p>AND</p> <ul style="list-style-type: none"> <li>Provide few or superficial connections between claims (demonstrating a limited understanding of the reasoning).</li> </ul>					<p><b>Typical responses that earn 6 points:</b></p> <ul style="list-style-type: none"> <li>Accurately identify most of the claims.</li> </ul> <p>AND</p> <ul style="list-style-type: none"> <li>Clearly explain the relationships between claims (including how they relate to the overall argument).</li> </ul>				
<p><b>Additional Notes</b></p> <ul style="list-style-type: none"> <li>A response may evaluate sources and evidence in the second part (Row 2), and/or analyze the argument in the third part (Row 3). Credit should be awarded for this.</li> </ul> <p><b>Author’s claims</b></p> <ol style="list-style-type: none"> <li>The challenge of meeting the world’s energy needs is massive as demand for electricity continues to grow. (Establishes extent of problem)</li> <li>Nuclear energy is a clean option that can meet this challenge. (Sets up nuclear energy as a part of the solution to the problem)</li> <li>There are good reasons organizations have come to see nuclear energy as “clean”. (Provides rationale for recognizing nuclear energy as a viable solution)</li> <li>Nuclear power is clean because it produces a lot of energy for its small physical footprint. (Provides comparative rationale for why nuclear is a superior solution to other sources of energy)</li> <li>Wind and solar energy enjoy a better reputation as clean energy sources. (Continues comparative line of reasoning – sets up equivalence between clean energy sources).</li> <li>Both wind and solar require favorable weather conditions and backup power to be online. (Comparison highlighting limitations of other energy sources)</li> <li>Reality is far better than public perceptions of nuclear energy (negative examples of public perception might include discussions on Three-Mile Island, Chernobyl, and Fukushima). (Establishes counter-argument- acknowledges concerns about adoption of nuclear energy).</li> <li>Fear (of nuclear power) has caused unnecessary environmental harm. (Responds to counter-argument)</li> <li>Politics of nuclear waste management inhibited nuclear progress in the United States, but it is a solvable challenge. (Conclusion)</li> </ol>																			

**Question 3: Evaluate effectiveness of the evidence****6 points**

Reporting Category	Scoring Criteria											
<b>Row 3</b>  <b>Evaluate Sources and Evidence</b>  <b>(0-6 points)</b>	<b>0 points</b> Does not meet the criteria for two points.	<b>2 points</b> The response identifies little evidence. It makes a superficial reference to relevance and/or credibility but lacks explanation.	<b>4 points</b> The response explains various pieces of evidence in terms of credibility and relevance, but may do so inconsistently or unevenly.	<b>6 points</b> The response evaluates the relevance and credibility of the evidence and thoroughly evaluates how well the evidence is used to support the author's argument.								
<b>Decision Rules and Scoring Notes</b>												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th data-bbox="306 553 724 586" style="width: 25%;">Typical responses that earn 0 points:</th> <th data-bbox="724 553 1129 586" style="width: 25%;">Typical responses that earn 2 points:</th> <th data-bbox="1129 553 1535 586" style="width: 25%;">Typical responses that earn 4 points:</th> <th data-bbox="1535 553 1948 586" style="width: 25%;">Typical responses that earn 6 points:</th> </tr> </thead> <tbody> <tr> <td data-bbox="306 586 724 906"> <ul style="list-style-type: none"> <li>● Misidentify evidence or exclude evidence from the response.</li> <li>AND</li> <li>● Provide no evaluative statement about effectiveness of evidence.</li> </ul> </td> <td data-bbox="724 586 1129 906"> <ul style="list-style-type: none"> <li>● Identify at least one piece of evidence (or source of evidence) but disregard how well it supports the claims.</li> <li>OR</li> <li>● Offer broad statements about how well the evidence supports the argument without referencing ANY specific evidence.</li> </ul> </td> <td data-bbox="1129 586 1535 906"> <ul style="list-style-type: none"> <li>● Provide a vague, superficial, or perfunctory assessment of how well at least two pieces of evidence support the argument.</li> <li>OR</li> <li>● Explain the relevance of evidence or credibility of sources presented, but explanations lack detail.</li> </ul> </td> <td data-bbox="1535 586 1948 906"> <ul style="list-style-type: none"> <li>● Provide detailed evaluation of how well the evidence presented supports the argument by               <ul style="list-style-type: none"> <li>● Evaluating the strengths and/or weaknesses of the evidence.</li> </ul> </li> <li>AND</li> <li>● Evaluating the relevance of specific evidence, and credibility of sources of specific pieces of evidence presented.</li> </ul> </td> </tr> </tbody> </table>					Typical responses that earn 0 points:	Typical responses that earn 2 points:	Typical responses that earn 4 points:	Typical responses that earn 6 points:	<ul style="list-style-type: none"> <li>● Misidentify evidence or exclude evidence from the response.</li> <li>AND</li> <li>● Provide no evaluative statement about effectiveness of evidence.</li> </ul>	<ul style="list-style-type: none"> <li>● Identify at least one piece of evidence (or source of evidence) but disregard how well it supports the claims.</li> <li>OR</li> <li>● Offer broad statements about how well the evidence supports the argument without referencing ANY specific evidence.</li> </ul>	<ul style="list-style-type: none"> <li>● Provide a vague, superficial, or perfunctory assessment of how well at least two pieces of evidence support the argument.</li> <li>OR</li> <li>● Explain the relevance of evidence or credibility of sources presented, but explanations lack detail.</li> </ul>	<ul style="list-style-type: none"> <li>● Provide detailed evaluation of how well the evidence presented supports the argument by               <ul style="list-style-type: none"> <li>● Evaluating the strengths and/or weaknesses of the evidence.</li> </ul> </li> <li>AND</li> <li>● Evaluating the relevance of specific evidence, and credibility of sources of specific pieces of evidence presented.</li> </ul>
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<b>Additional Notes</b> <ul style="list-style-type: none"> <li>● A response may evaluate sources and evidence in the second part (Row 2), and/or analyze the argument in the third part (Row 3). Credit should be awarded for this.</li> <li>● Responses which solely evaluate sources of information and not specific pieces of evidence presented from those sources cannot score 6 for Row 3.</li> </ul>												

Summary of Evidence		
Source (as provided in text)	Credibility	Evidence/Relevance to claims
No Source	No Source	<i>Nearly 1 billion people today still do not have electricity.</i> Supports claim: The challenge to meet the world’s energy needs is massive as demand for electricity continues to grow.
Clean Energy Ministerial	Annual gathering of energy ministers from 26 countries and the European Commission	<i>Included nuclear energy as a clean energy source and encouraged other energy organizations to do the same. Nuclear can further “economic growth and effective environmental stewardship.”</i> Supports the claim that Nuclear energy is a clean option that can meet existing challenges.
MIT / Idaho National Lab / University of Wisconsin		<i>Nuclear energy is “essential” to expand energy access and reduce greenhouse gas emissions.</i> Supports claim: Nuclear energy is a clean option that can meet existing challenges.
US Energy Information Association		<i>In the United States, 19% of the electricity Americans use comes from 97 nuclear reactors, more than in any other country.</i> Establishes context that nuclear power is prevalent in America.
World Nuclear Power Association		<i>444 commercial nuclear power reactors operating globally; 54 under construction and 111 planned, most notably in China, India and Russia.</i> Establishes context that nuclear energy development is current and widespread.
Unclear source reference – could be WNPA	Unclear source reference – could be WNPA	<i>The gigawatts of electricity produced for millions of people by these reactors has emitted no air pollutants.</i> Supports claim that nuclear energy is a clean option that can meet existing challenges.
Stevens, Landon, et al. “The footprint of energy: land use of US electricity production”	STRATA (2017)	<i>A single nuclear reactor uses about 13 acres of land space per megawatt, compared to wind (71 acres), solar (44 acres) and hydro (315 acres). This includes land used for mining, transportation, transmission, and storage.</i> Supports claim: Nuclear power is clean because produces a lot of energy for its small physical footprint.
Nuclear Energy Institute		<i>Solar farm would need 45 square miles of land to produce the same amount of electricity as an average nuclear power plant. Wind energy farm would need roughly 260 square miles.</i> Supports claim: Nuclear power is clean because produces a lot of energy for its small physical footprint.
US Energy Information Association		<i>Nuclear reactors are online and generating power 93% of the time, compared with wind (37%) and solar (26%).</i> Supports the idea that Nuclear is an important addition to renewables as its more reliable.

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United States Nuclear Regulatory Commission		<p><i>Most nuclear power plants in the United States are licensed to operate for 60 years.</i></p> <p>Supports claim that nuclear power has its tradeoffs, but reality is far better than public perceptions of nuclear energy.</p>
The National Renewable Energy Laboratory	U.S. Department of Energy	<p><i>Operating life of renewables is roughly half as long (30 years).</i></p> <p>Supports claim that nuclear power has its tradeoffs, but reality is far better than public perceptions of nuclear energy (the drawbacks of renewables in terms of longevity are worse than nuclear).</p>
Kharecha, Pushker A., and James E. Hansen. “Prevented mortality and greenhouse gas emissions from historical and projected nuclear power”	<i>Environmental Science &amp; Technology</i> (2013)	<p><i>No one has died from radiation exposure from Three Mile Island and Fukushima.</i></p> <p>Supports claim: Nuclear power has its tradeoffs, but reality is far better than public perceptions of nuclear energy.</p>
Unclear source reference – may be Kharecha, Pushker, and Hansen	Unclear source reference – may be Kharecha, Pushker, and Hansen	<p><i>Nuclear accident at Three Mile Island in 1979: radiation exposure for the 2 million people living closest to the reactor amounted to less than a dental x-ray.</i></p> <p>Supports claim: Nuclear power has its tradeoffs, but reality is far better than public perceptions of nuclear energy.</p>
US Nuclear Regulatory Commission		<p><i>State and federal agencies and private companies tested agricultural, health and environmental factors, finding nothing of concern.</i></p> <p>Supports claim: Nuclear power has its tradeoffs, but reality is far better than public perceptions of nuclear energy.</p>
Kharecha, Pushker A., and James E. Hansen. “Prevented mortality and greenhouse gas emissions from historical and projected nuclear power”	<i>Environmental Science &amp; Technology</i> (2013)	<p><i>UN has confirmed 43 deaths from radiation at Chernobyl, considered the worst nuclear accident in history.</i></p> <p>Supports claims about why Chernobyl was a unique case (and would not happen in America). This supports the idea that even in its worst case, it is not as bad as public perceptions believe it to be.</p>
Michael Shellenberger	Founder of Environmental Progress	<p><i>Challenged Japanese government’s efforts to remove thousands of tons of “contaminated” topsoil. The response was: “Every scientist and radiation expert in the world who comes here says the same thing. We know we don’t need to reduce radiation levels... We’re doing it because the people want us to.”</i></p> <p>Supports claim: Fear (of nuclear power) has caused unnecessary environmental harm and costs.</p>
The Nuclear Energy Institute		<p><i>81,500 tons of nuclear waste from commercial power reactors in the U.S. - represents the nuclear waste from every commercial reactor in the U.S. since 1957 — no more than a football field 10 yards deep.</i></p> <p>Supports claim that politics of nuclear waste management inhibited nuclear progress in the United States, but it is a solvable challenge.</p>

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International Renewable Energy Agency		<p><i>Estimates the U.S. will have 170,000 to one million tons of waste from solar panels by 2030.</i></p> <p>Provides a counter that wind and solar power also have waste disposal issues.</p>
No source	No source	<p><i>Nuclear industry in Finland is building a deep geologic repository to permanently isolate waste from people and the environment.</i></p> <p>Supports claim: Politics of nuclear waste management inhibited nuclear progress in the United States, but it is a solvable challenge.</p>



---Response for prompt A1---

Despite past and present persistence against this clean energy source, nuclear energy has immense benefits including reducing greenhouse gas emissions, expanding energy access, and increasing energy effectiveness. For these reasons, nuclear energy is an option that must be considered in order to improve the environment we live in.

--- Response for prompt A2---

To begin, Tubb explains the problem at hand, the great need for a clean energy source. There is a huge demand for electricity, billions of people struggle with this daily. She then claims that access to energy has various benefits, including increased financial opportunity, education, healthcare, homes, and communication. This proves that this is an issue that must and should be solved. Next, Tubb introduces a clean energy source that is in consideration, nuclear energy. She exemplifies the fact that there has been a lot of backlash in the past, but things are looking up. The author then increases credibility by showing that the Clean Energy Ministerial recently included nuclear energy in their list of clean energy sources. They claim that nuclear can grow the economy and help the environment. This claim verifies nuclear as a viable and beneficial option. Tubb further proves her argument by including multiple researchers at universities' point of view about nuclear energy. She writes, "[MIT, Idaho National Lab, and University of Wisconsin] have gone so far as to say nuclear energy is 'essential' to expand energy access and reduce greenhouse gas emissions." Tubb then goes into how organizations have deemed nuclear energy as a "clean" option. Through the World Nuclear Power Association's work, she explains that the electricity produced by nuclear power reactors has emitted no pollution into the air, verifying its cleanliness. Furthermore, she proves that this power is clean due to its high energy output using little land compared to other clean power options. She includes a counterclaim, saying that wind and solar energy are usually viewed as more clean, but disproves the validity of this statement by concluding that nuclear reactors can work in any weather and can operate for much longer than other power sources. After discussing all the various benefits of nuclear over other energy sources, Tubb goes into some "tradeoffs" of nuclear. However, she continues to support her argument by saying that public perception of the bad parts of this energy source still isn't up to reality. Tubb dives into three instances of nuclear accidents, Chernobyl, Three Mile Island, and Fukushima. However, she proves that the accidents of Three Mile Island and Fukushima didn't cause any harm. The worst accident at Chernobyl resulted in 43 deaths, showing the nuclear energy isn't perfect. Tubb then explains that fear of nuclear energy is a huge problem, proven by the unnecessary environmental harm and costs caused by fear. Another concern that Tubb exemplifies is nuclear waste. While there are 81,500 tons of it, other clean energy sources cause way more waste. This shows that waste is an issue, but it could be solved. Tubb concludes by stating that nuclear power may not be a perfect option, but it still should be in consideration due to its immense benefits as a clean energy source to the environment.

---- Response for prompt A3----

One piece of evidence that author uses to support her claims made in the argument comes from the Massachusetts Institute of Technology, Idaho National Lab, and the University of Wisconsin. In order to prove that nuclear energy is a smart option for clean energy, the author includes their perspective that reads, "nuclear energy is 'essential' to expand energy access and reduce greenhouse gas emissions." This piece of evidence is extremely effective in support of the author's overall argument. Not only does it come from an extremely credible source, well-known research universities, it is highly relevant to the topic. It makes sense that these places are commenting on this issue. You can believe what they say. This evidence also connects very well to the topic at hand. It clearly proves their point. Additionally, another well selected piece of evidence was included to demonstrate the claim that nuclear power is clean due to its high energy production in terms of the physical space it takes up. By STRATA and Landon Stevens and the Nuclear Energy Institute, it was found that a nuclear reactor used 13 acres of land per megawatt compared to wind (71 acres), solar (44 acres) and hydro (315 acres). The Nuclear Energy Institute is a organization that specializes in nuclear power, so they must know a lot of information revolving around nuclear power. However, there may be a little bit of bias supporting nuclear power. STRATA is a journal that seems quite credible, using statistics to prove their point. The date may be a bit of a downfall, since it was in 2017 and data should be updated. Furthermore, the United States Nuclear Regulatory Commission and The National Renewable Energy Laboratory (U.S. Department of Energy) are both used to demonstrate how nuclear power plants operate almost twice as long as renewable energy. This clearly supports the claim that nuclear energy is a great clean energy choice due to its various benefits. Both of these are very highly credible organizations that focus on nuclear energy, possessing lots of great information revolving around nuclear power. Overall, all evidence that the author uses is highly credible, relevant, and greatly supportive pf their claims.

---- Response for prompt A1----

The authors main idea is to explain the spacial, economic and environmental benefactors of using nuclear energy, while undermining any opposing or false notions about this efficient long lasting foarm of energy. In hopes that people will recognize its benifits and encorage them to take advantage of the reasource.

---- Response for prompt A2----

Kate Rubb from "Nuclear Could be the clean energy source the world needs" begins by stating that the world needs new sources of energy to fit the demand for electricity, her solution is Neuclear energy. Despite earlier speculaton of the neggative effects of neclear energy outweighing the benifits new discoveries have foun d that these negative claims are simply not how they seem. Neuclear energy not only develops economic growth but also environmental benifits. The US energy information association found that no polutants are immitted into the environment after using nuclear energy as well as using significantly less space to mine compared to solar or hydro energy. while on the other hand Neclear energy power plants only need abouth 13 acres of land while the competition needs double or tripple that amount. While solar and hydro energy sources get recognition for being the best clean energy sources they need the ideal weather conditions to opperate at full copacity which is not ideal. Neuclear power plants can also opperate for far longer than other energy sources which usualy last half as long as the estimated 60 yearsrs of opperation nuclear owerplants can operate for. Then She follows by adressing the conserns people had about neclear energy such as explaining acidents that gave neuclear energy a bad reputation like the "infamous acident at Chernobyl" which killed 43 people. She proceeds to explain that after this tradgety scientists say that the radiation is not harmfull and that neuclear waste creates far less tones of waste compared to solar. Nuclear has 81,500 tones compred to the woping 170,000 that solar pannels produce. So she explains how peoples notions against neclear energy are wrong and it would actualy be a very beneficial alternitive to other energy sources because of the space, cost, more flexible condition use and longevity of neclear power plants.

---- Response for prompt A3----

Throught this article Tubb refrences a plethora of different creadible sources she begins by stating how the CEM or Clean Energy Ministerial stated that Nuclear energy would be included as a clean energy source and want perple to begin to take advantage of the reasource. The Massachusetts Institute of Technology even stated that " nuclear energy is essential to expand energy access and reduce greenhouse gass emmisions," this reinforces the fact thta Nuclear energy is emportant and encorage people to take advantage of it. They then added to reassuse the no polutant aspect that the US Energy Information Assosiation stated that people who have used these reactors and electricity produced have "emmitted no polutants," further justifying the fact that no harm to the environment is caused as some may seem because of some accidents in the early development of neuclear power. Then she gives evidence that proves that Nuclear power is better than others such as solar or hydro stating

that the US Energy Information reports that nuclear " reactors are online and generating power 93%," while the competitors are running at 37% and 26%. The Nuclear regulatory Commission stated that scientists have tested areas previously effected by nuclear radiation and found that there is "Nothing of concern," after testing agricultural, environmental, and health factors that may be effected by this energy. All the evidence displayed are from facilities or organizations that were made to test Nuclear effectiveness. Following this more statistics are given on how much waste is actually contributed to the environment by nuclear energy in comparison to solar " 81,500 tons of nuclear waste... in the US...the US will have 170,00 to one million tonnes of waste from solar panels," these numbers state that Nuclear energy actually produces far less waste compared to solar panels. Proper statistics are shown comparing different energy options to further show how Nuclear energy excels amongst other options despite public notions against it.

---- Response for prompt A1----

The authors argument is that nuclear energy could be the new essential the world needs.

---- Response for prompt A2----

The authors claims are - "nuclear power is also clean in the sense that it produces a lot of energy for its small physical footprint", "According to CEM, nuclear can further "economic growth and effective environmental stewardship", "There are good reasons these organizations have come to see nuclear energy as "clean", "among other concerns is nuclear waste", "Wind and solar energy enjoy a much better reputation as clean energy sources and also have benefits like zero emissions energy"

---- Response for prompt A3----

The evidence the author uses to support the claims are - "A single nuclear reactor uses about 13 acres of land space per megawatt, compared to wind, solar and hydro". " The Massachusetts Institute of Technology, in partnership with Idaho National Lab and the University of Wisconsin, have gone so far to say nuclear energy is "essential" to expand energy access and reduce greenhouse gas emissions", "The gigawatts of electricity produced for millions of people by these reactors has emitted no air pollutants", "there are 81,500 tons of nuclear waste from commercial power reactors in the United States", "association reports that nuclear reactors are online and generating power 93% of the time, compared with wind and solar".

## **End-of-Course Exam**

### **Part A: Short Answer**

**Note:** Student samples are quoted verbatim and may contain spelling and grammatical errors.

#### **Overview**

This task asked students to read and understand an argument, explain the line of reasoning, and evaluate the credibility and relevance of the evidence advanced by the author in support of that argument.

#### **Sample: A**

**1 Understand and Analyze Argument Score: 3**

**2 Understand and Analyze Argument Score: 6**

**3 Evaluate Sources and Evidence Score: 6**

#### **Row 1: Understand and Analyze Argument**

The response earned **3** points for identifying all three parts of the argument: “nuclear energy is an option that must be considered in order to improve the environment we live in” (part 1), “nuclear energy has immense benefits including reducing greenhouse gas emissions, expanding energy access, and increasing energy effectiveness,” (part 2) and it recognizes concerns about nuclear energy: “Despite past and present persistence against this clean energy source” (part 3).

#### **Row 2: Understand and Analyze Argument**

The response earned **6** points for demonstrating a thorough understanding of the author’s line of reasoning by accurately showing how the claims build upon one another to advance the argument. The response accurately identified most of the claims (e.g., “There is a huge demand for electricity,” “organizations have deemed nuclear energy as a ‘clean’ option,” “this power is clean due to its high energy output using little land compared to other clean power options,” “that wind and solar energy are usually viewed as more clean,” “nuclear reactors can work in any weather and can operate for much longer than other power sources,” “public perception of the bad parts of this energy source still isn’t up to reality,” “fear of nuclear energy is a huge problem, proven by the unnecessary environmental harm and costs caused by fear,” “waste is an issue, but it could be solved.”). The response indicates a strong understanding of the line of reasoning by demonstrating how these claims advance the overall argument. It includes explanatory language such as, “To begin, Tubb explains the problem at hand” and connects it to the idea that “this proves that this is an issue that must and should be solved.” Further examples of explanatory language include passages such as, “This claim verifies nuclear as a viable and beneficial option,” “Tubb further proves her argument by including,” and “She includes a counterclaim, ... but disproves the validity of this statement.” Because the response provides a thorough evaluation of the author’s line of reasoning by accurately identifying the relevant claims and clearly explaining the connections among the claims, it earned 6 points.

**End-of-Course Exam**  
**Part A: Short Answer**

**Row 3: Evaluate Sources and Evidence**

The response earned **6** points for effectively evaluating how well multiple pieces of evidence support the author’s argument. The response considers the relevance of specific evidence and the credibility of the sources of evidence. For example, the response analyzes the use of evidence from Landon Stephens and the Nuclear Energy Institute to show that it offers effective support of the claim about the efficiency of nuclear power due to its small footprint. The response highlights the evidence that “a nuclear reactor used 13 acres of land per megawatt compared to wind (71 acres), solar (44 acres) and hydro (315 acres)” to effectively “demonstrate the claim that nuclear power is clean due to its high energy production in terms of the physical space it takes up.” Not only does the response consider the credibility of the Nuclear Energy Institute as an “organization that specializes in nuclear power, so they must know a lot of information revolving around nuclear power” but it also recognizes that “there may be a little bit of bias supporting nuclear power.” The response also considers the fact that the evidence came from an academic journal. Likewise, the response evaluates the relevance of information from the “United States Regulatory Commission and the National Renewable Energy Laboratory,” which “demonstrate how nuclear power plants operate almost twice as long as renewable energy.” The response offers an evaluation stating that this evidence “clearly supports the claim that nuclear energy is a great clean energy choice due to its various benefits.” Because the response provides thoughtful evaluations of the effectiveness of the evidence in supporting the author’s argument, it earned 6 points.

**End-of-Course Exam  
Part A: Short Answer**

**Sample: B**

**1 Understand and Analyze Argument Score: 2**

**2 Understand and Analyze Argument Score: 4**

**3 Evaluate Sources and Evidence Score: 4**

**Row 1: Understand and Analyze Argument**

The response earned **2** points for identifying two parts of the argument. The response recognizes that the article, in vague terms, argues that nuclear power is beneficial, and notes that the article is “undermining any opposing false notions about this efficient long lasting foarm of energy” (part 3), in hopes that this recognition will “encourage [people] to take advantage of the reasource” (part 1). The response did not sufficiently identify any specific benefits of nuclear power, nor did it identify the important point in the argument that nuclear energy is superior to other forms of clean energy production, and so earned 2 points.

**Row 2: Understand and Analyze Argument**

The response earned **4** points for demonstrating a limited understanding of the author’s line of reasoning. It accurately identifies some claims (e.g., “the world needs new sources of energy to fit the demand for electricity, her solution is Neuclear energy,” “nuclear energy . . . use[s] significantly less space to mine compared to solar or hydro energy,” “solar and hydro energy...need ideal weather conditions to opperate at full copacity,” and despite “concerns people had about nuclear energy . . . notions against nuclear energy and wrong”). The response does not articulate how the line of argument is built through distinct claims, reflecting a limited explanation of the author’s line of reasoning. Efforts to connect the claims are superficial; rather than explaining with some precision how each claim connects to other claims or to the overall argument, the response uses terms like the author “follows this by adressing the conserns people had about neclear energy” without fully exploring the structure of the author’s argument. Most of the language in the response summarizes the argument rather than discussing the author’s line of reasoning, concluding that “she explains how peoples notions against neclear are wrong and it would actually be a very beneficial alterntive to other energy sources because of the space, cost, more flexible condition use and longevity of neclear power plants.” As the response correctly identifies some of the claims but provides only limited understanding of the author’s line of reasoning, it earned 4 points.

**Row 3: Evaluate Sources and Evidence**

The response earned **4** points on Row 3. The response offers superficial evaluations of the relevance of evidence and credibility of sources, but it simply accepts the author’s assertions without evaluating how well the evidence supports the author’s argument. The response makes a superficial identification of credibility in connection with one source (the Clean Energy Ministerial) but presents a limited evaluation of the source explaining that the author “refrences a plethera of different creadible sources.” In a second instance, the response noted evidence from the US Energy Information Association stating that nuclear energy “emmitted no polutants” and remarked only that evidence served the purpose of “further justifying the fact that no harm to the environment is caused.” Since the response offers an uneven demonstration of evaluative skills and does not thoroughly evaluate how well the author supported her argument with evidence, it earned 4 points.



**End-of-Course Exam**  
**Part A: Short Answer**

**Sample: C**

**1 Understand and Analyze Argument Score: 1**

**2 Understand and Analyze Argument Score: 2**

**3 Evaluate Sources and Evidence Score: 2**

**Row 1: Understand and Analyze Argument**

The response earned **1** point because it accurately identified part 1 of the main argument. The response recognizes that “nuclear energy could be the new essential the world needs;” however, the response only offers information that can be accessed from the title. Because the response does not discuss the benefits of nuclear energy in comparison to other clean energy sources (part 2) or the negative perceptions of nuclear energy (part 3), it cannot earn more than 1 point.

**Row 2: Understand and Analyze Argument**

The response earned **2** points for identifying multiple correct claims through direct quotations in a list format without demonstrating any understanding of the author’s line of reasoning. The response accurately identifies several claims (e.g. nuclear energy is clean due to “its small physical footprint,” groups have “come to see nuclear energy as ‘clean,’” fears exist around “nuclear waste,” and “wind and solar energy enjoy a much better reputation as clean energy sources”). The response misidentifies evidence as another claim, identifying that nuclear energy can further “economic growth and effective environmental stewardship.” Since the response identifies various claims but provides no explanation of the connections between them (the author’s line of reasoning), it cannot earn more than 2 points.

**Row 3: Evaluate Sources and Evidence**

The response earned **2** points because it identifies various pieces of evidence but disregards how well the evidence supports the argument. The response identifies evidence that nuclear reactors use “13 acres of land,” “nuclear energy is ‘essential’ to expand energy access and reduce greenhouse gas emissions,” the reactors “emitted no air pollutants,” and “nuclear reactors are online and generating power 93% of the time.” In addition, the response identifies various sources of evidence: The Massachusetts Institute of Technology, Idaho National Lab, and University of Wisconsin. The response does not go beyond listing evidence and sources and offers no evaluative statements of the sources or their effectiveness. As evidence and sources are identified without any evaluation of the evidence, the response cannot earn more than 2 points.