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1. How does the act use nostalgia about the place of physics in the world in the past to revisit understandings of the partnership of Bohr and Heisenberg?

The act uses nostalgia about the place of physics in the world to revisit understandings of the partnership of Bohr and Heisenberg because they look back on their history as friends through important scientific achievements. Nostalgia also is used to further deepen the friendship between Bohr and Heisenberg.

2. How does the act use religious imagery to delineate the relationships between Bohr, Heisenberg, and their colleagues in physics? Why use religious imagery to outline these relationships? What does this imagery imply about the field of physics?

The act uses religious imagery to delineate the relationships between Bohr, Heisenberg, and their colleagues in physics by including multiple religious references. Throughout the act Einstein is referred to as the “God of physics” and Bohr is referred to as the “Pope of Copenhagen”. These religious references help underscore the differences between Bohr, Heisenberg, and the other colleagues and their beliefs. At the time, the political scene was dominated by Catholicism which shows why the religious references are used. The imagery implies about the field of physics that the field contains many varying perspectives and ideologies. It also shows how the field of physics is constantly changing based on the societal and cultural aspects.

3. How does this act use descriptions of movement to discuss the work of Bohr and Heisenberg?

The act uses descriptions of movement to discuss the work of Bohr and Heisenberg to draw a reference to their work on the uncertainty principle and the electron. The descriptions of movement show how everything works together and connects. For example, the uncertainty principle relates to the movement and Bohr and Heisenberg’s work discusses the composition of an atom and its movement.

4. What is complementarity in theoretical physics? How does this act use the idea of complementarity?

Complementarity is a quantum mechanics term used in the complementarity principle. The complementarity principle indicates that it is impossible to know 2 properties simultaneously. The idea of complementarity is used to expand on the Copenhagen Interpretation. Furthermore, the idea of complementarity is used to explain how there is still much to learn in science and a lot of uncertainty between two specific characters.

5. What further questions arise in this act about Heisenberg's motivations/intentions about the development of an atomic bomb?

The further questions that arise in this act about Heisenberg’s motivations about the development of an atomic bomb are what Heisenberg wants to do with the knowledge of atomic bombs and how can this knowledge lead to the development of an atomic bomb. Heisenberg never says whether or not he will create the bomb, however he indicates that he has the ability to solve the equation. Therefore, this begs the question whether or not Heisenberg truly has good motivations/intentions or if he has the ability to create the bomb at all.

6. What is the significance of the calculation done by Perrin and Flugge?

The significance of the calculation done by Perrin and Flugge is that it shows that Heisenberg's calculation is incorrect because they both did not get the same value.

7. What does Margrethe mean when she says "That was the last and greatest demand that Heisenberg made on his friendship with you."

To be understood when he couldn't understand himself, and that was the last and greatest act of friendship for Heisenberg that you performed. To leave him misunderstood" (111)? Margrethe means that Heisenberg is not certain of his position on the atomic bomb. Additionally, Bohr provided advice to help Heisenberg reach a conclusion. Margrethe means to show Bohr and Heisenberg's friendship when they care about each other. Bohr eventually helped Heisenberg to decide what to do regarding the atomic bomb.

8. Who is Georg Duckwitz, and what important role did he play?

Georg Duckwitz was a German diplomat during World War II. The important role he played was a source of information from Germany. Through him many Jews escaped and fled.

9. What is the importance of "meanwhile" in Heisenberg's last speech on p. 94? What is the significance of the "final core of uncertainty at the heart of things" (115)?

The importance of "meanwhile" in Heisenberg's last speech is that it shows that there are further things that happen around their life. The significance of the "final core of uncertainty at the heart of things" is that there will always be uncertainty, despite how certain something is. It implies that uncertainty is normal and is a key part of everything.