



Practice Worksheet on Smart Clothing

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Subject: Technology

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Long Answer Questions

1. Describe the different ways smart clothing integrates technology to monitor health and provide feedback, giving specific examples from the text.
2. Analyze the benefits and drawbacks of utilizing smart clothing for health monitoring, considering factors such as ease of use, precision, and data privacy.
3. Compare and contrast the 'smart shirt' created by Jayaraman and the chemically printed sensors developed by Wang, highlighting their functionalities and limitations.
4. Explain the function of various sensors used in smart clothing and how they gather data, including various types of sensors used and what data they collect. Discuss the applications of this technology in various fields.
5. Discuss the possible future developments and uses of smart clothing technology, addressing factors such as materials advancements, sensor miniaturization, and integration with other wearable technologies.

6. Analyze the ethical considerations related to using smart clothing, including data privacy, security, and the possibility of misusing personal health information.

7. Discuss the effect of smart clothing on various daily life aspects, including health and wellness, communication, and environmental awareness. Analyze the possible advantages and disadvantages of widespread smart clothing adoption.

8. Explain how smart clothing technology has progressed from its initial stages to its current capabilities, using specific examples to highlight key advancements and innovations.

Multiple Choice Questions

1. Which of the following is a function of Jayaraman's 'smart shirt'?

- a) Detecting heart rate
- b) Monitoring body temperature
- c) All of the above
- d) None of the above

2. In what year was Jayaraman's 'smart shirt' developed?

- a) 2005
- b) 2001
- c) 2010
- d) 1995

3. What type of sensors are printed directly onto fabric by chemist Joe Wang?

- a) Chemical sensors
- b) Physical sensors
- c) Optical sensors

d) Acoustic sensors

4. What body fluid do Wang's sensors detect chemicals in?

- a) Oxygen
- b) Sweat
- c) Carbon dioxide
- d) Nitrogen

5. What is one disadvantage of Jayaraman's 'smart shirt'?

- a) They are expensive
- b) They need to be plugged into an external device
- c) They are difficult to use
- d) They are not accurate

6. What are some functions of smart clothing mentioned in the text?

- a) Improve posture during yoga
- b) Answer phone calls
- c) Control music volume
- d) All of the above

7. Where can Wang's sensors function?

- a) They are only effective above water
- b) They work underwater
- c) They are not reliable
- d) They cannot detect dangerous chemicals

8. What device do the yoga smart clothes connect to?

- a) Smartphone
- b) App
- c) Computer
- d) Tablet

Answer Key

Long Answer Questions - Expected Responses

1. Describe the different ways smart clothing integrates technology to monitor health and provide feedback, giving specific examples from the text.

Expected Answer: Explain how smart clothing uses technology to monitor health and provide feedback. Include examples like heart rate tracking, posture analysis, and chemical detection.

2. Analyze the benefits and drawbacks of utilizing smart clothing for health monitoring, considering factors such as ease of use, precision, and data privacy.

Expected Answer: Discuss the advantages and disadvantages of using smart clothing for health monitoring, considering factors like convenience, accuracy, and privacy.

3. Compare and contrast the 'smart shirt' created by Jayaraman and the chemically printed sensors developed by Wang, highlighting their functionalities and limitations.

Expected Answer: Compare and contrast the 'smart shirt' developed by Jayaraman and the chemically printed sensors developed by Wang, focusing on their functionalities and limitations.

4. Explain the function of various sensors used in smart clothing and how they gather data, including various types of sensors used and what data they collect. Discuss the applications of this technology in various fields.

Expected Answer: Explain how the sensors in smart clothing work, including the different types of sensors used and the data they collect. Discuss the applications of this technology in various fields (e.g., healthcare, fitness, environmental monitoring).

5. Discuss the possible future developments and uses of smart clothing

technology, addressing factors such as materials advancements, sensor miniaturization, and integration with other wearable technologies.

Expected Answer: Discuss the potential future developments and applications of smart clothing technology, considering factors like material advancements, sensor miniaturization, and integration with other wearable technologies.

6. Analyze the ethical considerations related to using smart clothing, including data privacy, security, and the possibility of misusing personal health information.

Expected Answer: Evaluate the ethical considerations associated with the use of smart clothing, such as data privacy, security, and potential misuse of personal health information.

7. Discuss the effect of smart clothing on various daily life aspects, including health and wellness, communication, and environmental awareness. Analyze the possible advantages and disadvantages of widespread smart clothing adoption.

Expected Answer: Discuss the impact of smart clothing on various aspects of daily life, including health and wellness, communication, and environmental awareness. Analyze the potential benefits and drawbacks of widespread adoption of smart clothing.

8. Explain how smart clothing technology has progressed from its initial stages to its current capabilities, using specific examples to highlight key advancements and innovations.

Expected Answer: Explain how smart clothing technology has evolved from its early stages to its current capabilities, providing specific examples and highlighting key advancements and innovations.

Multiple Choice Questions – Correct Answers

1. Which of the following is a function of Jayaraman's 'smart shirt'?

Correct Answer: All of the above

2. In what year was Jayaraman's 'smart shirt' developed?

Correct Answer: 2001

3. What type of sensors are printed directly onto fabric by chemist Joe Wang?

Correct Answer: Chemical sensors

4. What body fluid do Wang's sensors detect chemicals in?

Correct Answer: Sweat

5. What is one disadvantage of Jayaraman's 'smart shirt'?

Correct Answer: They need to be plugged into an external device

6. What are some functions of smart clothing mentioned in the text?

Correct Answer: All of the above

7. Where can Wang's sensors function?

Correct Answer: They work underwater

8. What device do the yoga smart clothes connect to?

Correct Answer: App