
Student Name: _____

Teacher: _____ Date: _____

District: Wake County

Assessment: 9_12 Tech Ed TE11 - Technology Engineering and Design Test 1

Description: Unit 1

Form: 501

1. As knowledge and skills increase, modification to products advance from one generation to the next. This is an example of:

- A. technological design.**
- B. manufacturing.**
- C. technical creativity.**
- D. technological evolution.**

2. Innovations are the result of a series of refinements that have improved an invention overtime. This is the concept of:

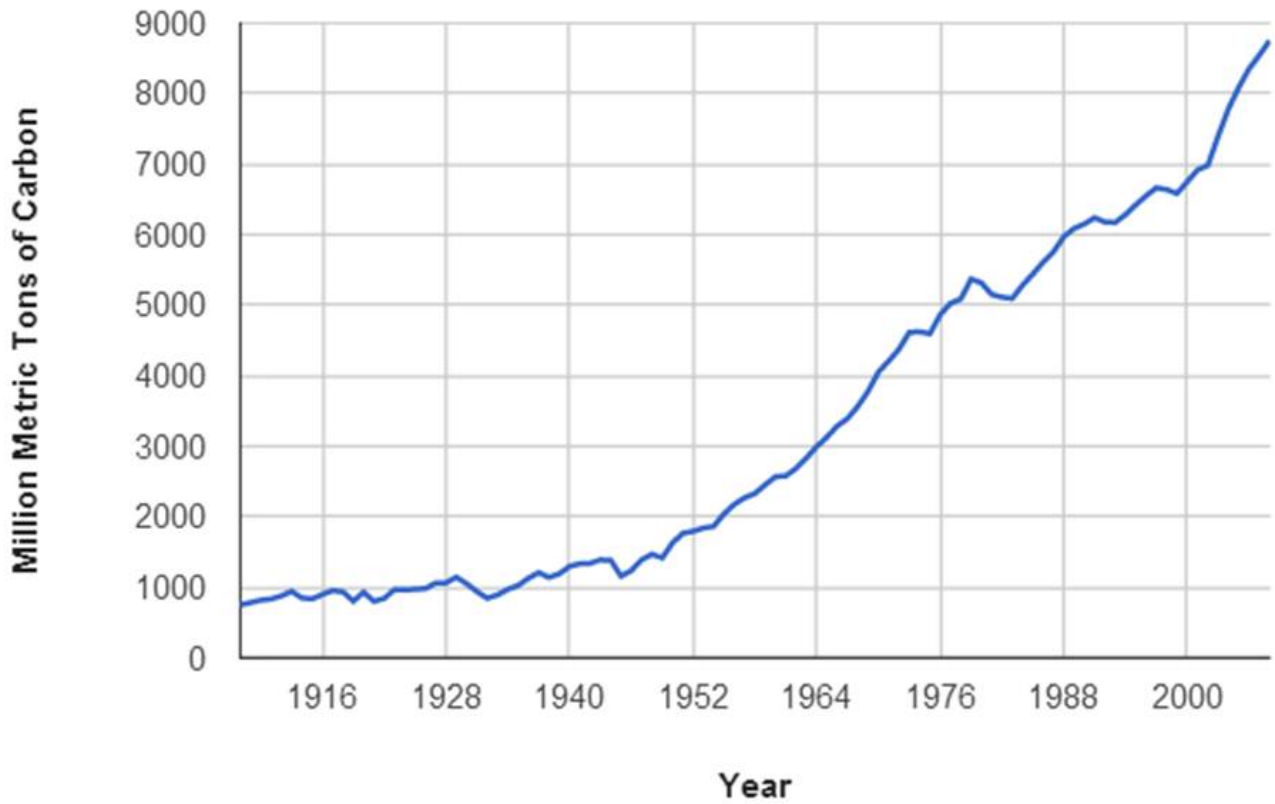
- A. Scientific discovery**
- B. Technological evolution**
- C. Scientific method**
- D. Technological mobility**

3. Since people are able to transfer the knowledge and skills related to the creation and production of technology to next generations, which statement is a reasonable conclusion?

- A. The development and use of technologies exhibits an evolutionary characteristic.**
- B. A thorough understanding of science is necessary for the development of technology.**
- C. Only those with technical abilities are prepared to use new technologies.**
- D. Future technological development has little relationship with how it was used in earlier times.**

4.

Global Carbon Emissions (1908-2008)

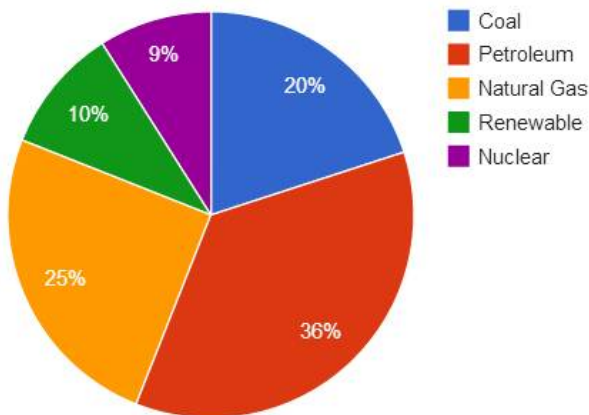


Using the information TE11 Carbon Chart, determine which of the following year ranges showed the largest increase in carbon emissions.

- A. 1916-1928
- B. 1928-1940
- C. 1940-1952
- D. 1952-1964

5.

US Energy Consumption by Source (2011)



is consumed the least in the United States.

Using the information TE11 Energy Chart, determine what energy source

- A. Coal
- B. Petroleum
- C. Natural Gas
- D. Nuclear

6. What is NOT a trade-off while selecting a resource for a design?

- A. An exchange of one resource for another
- B. Giving up on a benefit for a more desirable one
- C. Compromising between the benefits of resources to achieve results.
- D. Substituting different approaches

7. The transfer of technological knowledge and skills from one generation or society to another is usually accompanied with modifications to the products. This process is called:

- A. Technical creativity
- B. Technological evolution
- C. Manufacturing
- D. Technological design

8. An engineer is more likely to bring a project to completion with this characteristic.

- A. Procrastination
- B. Creativity
- C. Creativity
- D. Social ability

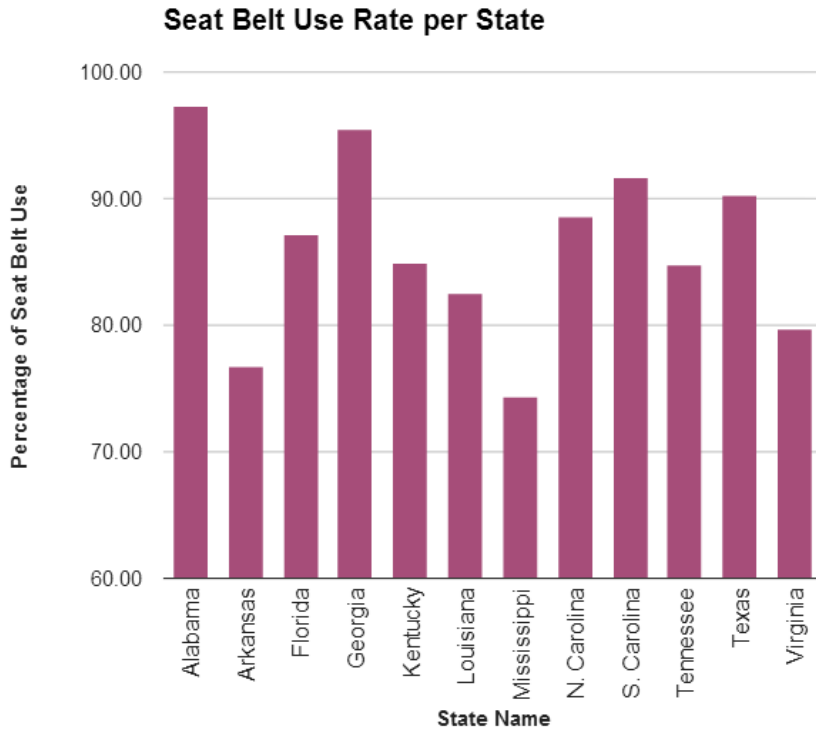
9. An example of a product of technological evolution is:

- A. mechanical pencil
- B. ink and quill
- C. wooden pencil
- D. cave painting

10. The changes in cell phones from one generation to the next generation is an example of:

- A. updating services.
- B. technological evolution.
- C. technological invention.
- D. manufacturing processes.

11.



Using the information TE11 Sealt Belt Use

Chart, determine which state has a seat belt use rate near 80%.

- A. Alabama
- B. Mississippi
- C. Virginia
- D. Louisiana

12. Common characteristics of technologists, scientists, and mathematicians could include such things as:

- A. a reluctance to try new ideas and new solutions
- B. creativity, curiosity, and a desire for new knowledge
- C. satisfaction with the present state of knowledge
- D. not using math to solve problems

13. Technological literacy is defined as:

- A. the ability to use computers to solve problems
- B. an understanding of the history of technology
- C. an understanding of the relationship between science, math, and technology
- D. the ability to successfully interact with technology and to make informed decisions

14. The invention of a water filter by the U.S. Army which is now available for public use is an example of:

- A. a trade-off.
- B. technology transfer.
- C. design optimization.
- D. streamlining.

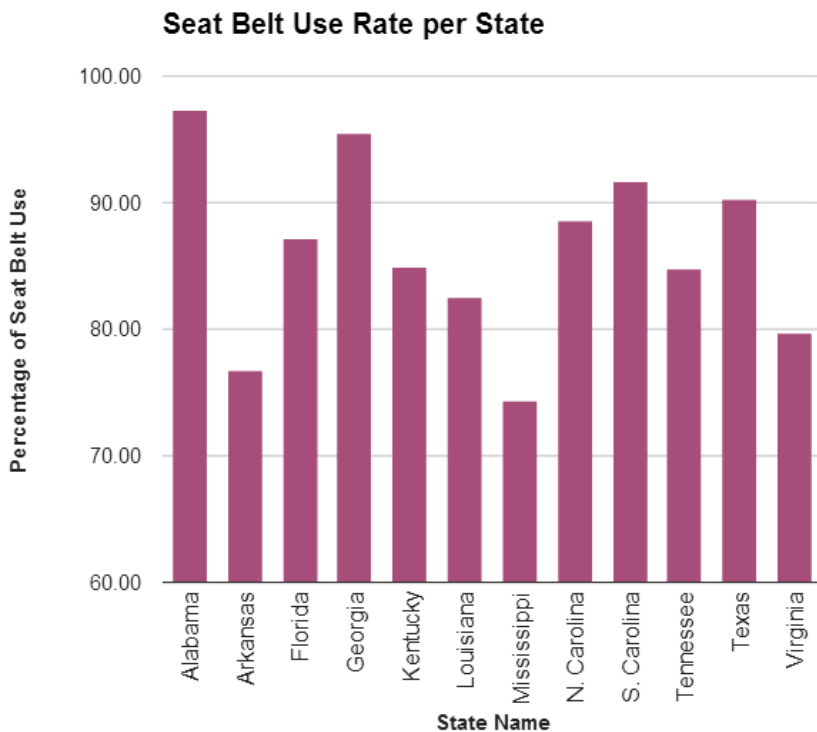
15. The change from the quill pen to the ball-point pen we use today is referred to as:

- A. brainstorming
- B. innovation
- C. discovery
- D. patent

16. An understanding of the interrelationships among technologies and other fields of study better enables one to use:

- A. technologies to find answers to scientific problems
- B. processes to design, produce, and assess technology
- C. mathematical models and simulations
- D. the scientific method to solve scientific problems

17.



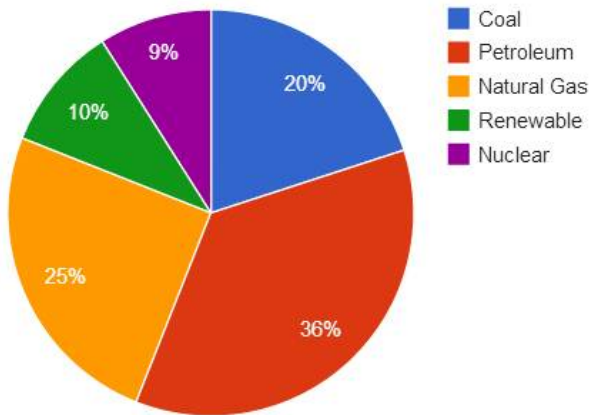
Using the information TE11 Sealt Belt Use

Chart, determine how many states fall below North Carolina in percentage of seat belt use?

- A. 0
- B. 4
- C. 7
- D. 8

18.

US Energy Consumption by Source (2011)



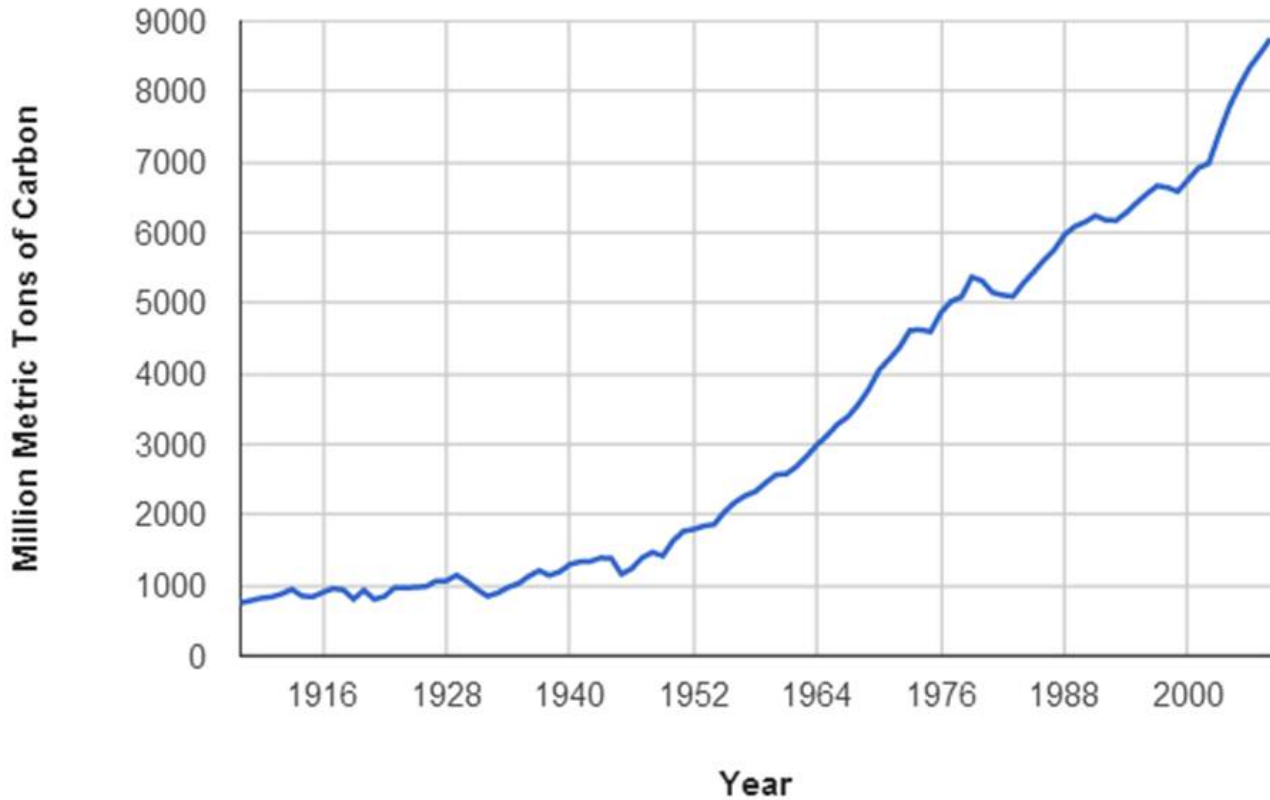
is consumed the most in the United States.

Using the information TE11 Energy Chart, determine what energy source

- A. Coal
- B. Petroleum
- C. Natural Gas
- D. Nuclear

19.

Global Carbon Emissions (1908-2008)



Using the information TE11 Carbon Chart, determine the approximate amount of global carbon emissions as of year 2000

- A. 750 Million Metric Tons
- B. 6000 Million Metric Tons
- C. 6750 Million Metric Tons
- D. 8750 Million Metric Tons

20. The study of technology should look at how the development of how technology affects humans at both the:

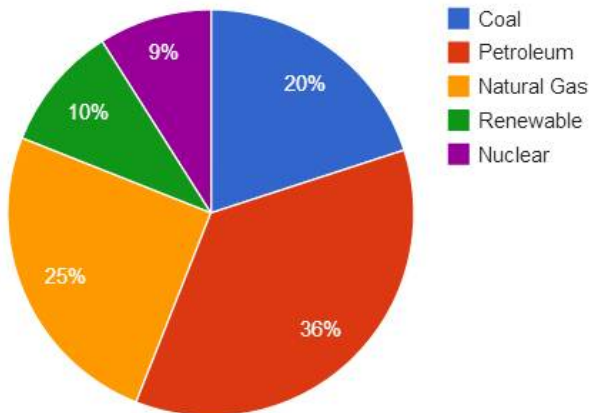
- A. local level and global level
- B. market place and work place
- C. school house and state house
- D. time of birth and time of death

21. When a new technology is introduced it immediately begins to undergo scrutiny and changes. This leads to:

- A. a poor economy
- B. innovation
- C. invention
- D. fewer patents

22.

US Energy Consumption by Source (2011)



Using the information TE11 Energy Chart, determine the approximate percentage of fossil fuel (coal, petroleum, natural gas) consumption.

- A. 0.81
- B. 0.45
- C. 0.56
- D. 0.36

23. The advent of wireless technology has significantly impacted the ability to:

- A. communicate more effectively
- B. build more effectively
- C. transport more effectively
- D. manufacture more effectively

24. Which of the following does NOT support the phrase "New technologies create new processes?"

- A. Moon->Light->Tides
- B. Cell phone->Texting->Hands free driver
- C. Car->Roads->Traffic Lights
- D. Computer->Desktop->Laptop

25. To stay competitive, companies create new technologies resulting in new processes. The following are results of new technology EXCEPT:

- A. Computer companies creating faster computers
- B. Cell phone companies creating smaller cell phones
- C. Farmer creating a milking machine
- D. Car company changing management protocols

26. Government helps inventors and innovators of technology protect and control the use of their ideas for a limited time by giving them a:

- A. Patent
- B. Tax Rebate
- C. Grant
- D. Trademark

27. A positive effect of transportation technology has been the ability to distribute goods to areas where they are not manufactured. A negative effect has been linked to illegal dumping of used tires. This is an example of a(n):

- A. anticipated effect.
- B. trade-off
- C. intended effect.
- D. unintended effect

28. The introduction of fast food restaurants into the American way of life has had both positive and negative impacts. One of the negative impacts is believed to be the increase in the number of people who are overweight. This is an example of a(n):

- A. anticipated effect.
- B. trade-off.
- C. intended effect.
- D. unintended effect.

29. A company surveyed college students to determine their need and want for a new portable computer accessory. Once the data was gathered, the company began designing the accessory to specifications determined by the data. This is an example of:

- A. Research and development
- B. Consumer marketing
- C. Strategic design
- D. Design and development

30. The activities that might result in new or improved products and processes describes what activity used in industry?

- A. Production
- B. Research and development
- C. Time management
- D. Testing

31. What technological process converts knowledge into a physical form?

- A. Development
- B. Research
- C. Time management
- D. Testing

32. A software design team is working on a new computer operating system. They analyze the market and work to develop new software using what type of problem-solving approach?

- A. Technological
- B. Industrial design
- C. Research and development
- D. Total quality management

33. If a solar cell can be made that breaks water into H₂ and O₂, then the H₂ can be stored and run through a fuel cell to generate electricity. To make this happen will require:

- A. deductions
- B. reactions
- C. research
- D. competition

34. Rafael's department is trying to make a working model of a miniature propane fueled generator that can be refueled in seconds to power cell phones. They are involved in:

- A. development
- B. manufacturing
- C. basic research
- D. market testing

35. To minimize unwanted impacts of a new technology, Charles should conduct a:

- A. cost-benefit analysis
- B. scientific analysis
- C. risk analysis
- D. quality analysis

36. Research and development (R&D) is used intensively by industry to prepare devices and systems. Which of the following is an example of R&D for the marketplace?

- A. Technology students working on a website competition
- B. A company working on management protocols
- C. NASA researchers working on space hydroponics systems
- D. Cell phone companies working to increase the speed of downloads