

Student Name: _____
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District: Wake County

Assessment: 9_12 Tech Ed TE11 - Technology Engineering and Design Test 3

Description: Test 2 Form A

Form: 501

1. An example of a subsystem in a car is:

- A. Steering Wheel**
- B. Suspension**
- C. Tire**
- D. Windshield**

2. Studying the historical developments of technology helps citizens:

- A. vote for public funding for new science and technology initiatives.**
- B. rely on the expertise of others to make technological decisions.**
- C. appreciate how innovation is an essential component of history.**
- D. select the best solution to a problem.**

3. Which is NOT a part of the preparation to begin the process of producing a consumer product?

- A. Engineering design**
- B. Raising capital**
- C. Packaging materials**
- D. Stock materials**

4. A technologically literate person should have a good understanding of the history of technology because:

- A. it allows one to understand how old and obsolete technologies are now valuable in today's society**
- B. greater understanding of technology history will increase your knowledge for other history classes.**
- C. it helps one to better understand the scientific method.**
- D. it allows one to understand how technology evolves and builds through invention and innovation**

5. Thomas Edison's invention of the light bulb has affected every person's day to day life. This is an example of how technology has affected:

- A. society**
- B. the economy**
- C. politics**
- D. The environment**

6. In order to better understand the world and technology around them, with regards to invention and

innovation, people need to understand:

- A. the history of technology.**
- B. the future of the country.**

- C. current political bills and laws.
- D. the history of civilizations.

7. Technology involves the use of processes to develop _____ that solve problems and extend human capabilities.

- A. keys
- B. systems
- C. ideas
- D. theories

8. Advancement in mathematics and science usually results in advancements in:

- A. technology.
- B. digital media.
- C. social studies.
- D. performing arts.

9. An established schedule to change the air filters in a home or to change the oil in cars is for:

- A. Maintenance
- B. Repair
- C. Diagnosis
- D. Troubleshooting

10. Information to diagnose and repair a product or system is contained in the product's:

- A. brochure.
- B. magazine advertisement.
- C. user's manual.
- D. direction sheet.

11. Which is most likely to increase when an operator does not follow established operating procedures?

- A. Life time of the tool
- B. Risk of accidents
- C. Labor time
- D. Productivity

12. As new technologies are developed:

- A. new processes are created
- B. processes are replicated
- C. processes are bypassed
- D. new processes are ignored

13. Which of the following Technological devices was a catalyst for additional scientific discoveries?

- A. Microscope
- B. Gaming System

- C. Automobile**
- D. Microwave Oven**

14. An automotive technician follows a process to determine why a vehicle will not start when the key is turned in the ignition. This process is an example of :

- A. troubleshooting the system**
- B. maintaining the system**
- C. optimizing the system**
- D. repairing the system**

15. Fundamental change in the technological world of the 21st century will most likely be accomplished using:

- A. the scientific method**
- B. the money of well-informed individuals**
- C. government studies and reports**
- D. systems thinking**

16. Who primarily determines the value of a technology over time?

- A. Marketing and advertising department**
- B. User and society**
- C. Manufacturer and builder**
- D. Engineer and designer**

17. All of the following resources provide information to repair a broken engine EXCEPT:

- A. Service Manuals**
- B. Diagnostic computers**
- C. Maintenance schedules**
- D. Experienced technicians**

18. The maintenance of systems is important to insure proper :

- A. Function**
- B. Repair**
- C. Form**
- D. Abilities**

19. Detailed directions are included with products to ensure that the product:

- A. functions as designed**
- B. malfunctions when used**
- C. can be used for other functions**
- D. is not used**

20. The printing press, developed by Johann Gutenberg in 1445, made books less costly and available to more people. This is an example of how technology :

- A. hinders society**
- B. benefits society**
- C. impedes society**
- D. motivates society**

21. What area tends to have a more direct effect on society because of its ability to both solve and create new problems?

- A. Science**
- B. Technology**
- C. Mathematics**
- D. Social Studies**

22. Which of the following fields is critical to competitive economic growth in the 21st century, and is a

mainstay of our present technological age.

- A. transportation technologies**
- B. information and communication technologies**
- C. construction technologies**
- D. manufacturing technologies**

23. The representative artifacts (e.g. Barometer, clocks, etc) for the Renaissance period appear more detailed and are constructed with more precision, than in previous periods. This suggests that there may have been

improvements in:

- A. Methods of measuring**
- B. Computer-integrated manufacturing**
- C. Human creativity**
- D. Public education**

24. Within the system of an automobile engine the fuel, spark plugs, and the pistons are all examples of:

- A. subsystems**
- B. outputs**
- C. feedback**
- D. inputs**

25. If a lever has the mechanical advantage of 5, how much force is needed to move an object that weighs 100 lbs?

- A. 5 lbs F**
- B. 10 lbs F**
- C. 20 lbs F**
- D. 25 lbs F**

26. In 1996 the first cloned mammal, Dolly, was born. This advancement sparked a debate about the right and wrong use of cloning technology. This is an example of what type of concern?

- A. engineering**
- B. ethical**
- C. economic**
- D. environmental**

27. The use and production of stone tools occurred in which period of human history?

- A. Paleolithic**
- B. Renaissance**
- C. Information**
- D. Neolithic**

28. In the Information age, significant advancements in the areas of communication have come about. Which of the following inventions is NOT a product of the information age?

- A. Computer**
- B. Television**
- C. Cell Phone**
- D. mp3 player**

29. Changing a furnace filter or air conditioning filter is an example of :

- A. troubleshooting a system to ensure safe and proper function**
- B. analyzing a system to ensure safe and proper function**
- C. maintaining a system to ensure safe and proper function**
- D. repairing a system to ensure safe and proper function**

30. $\text{Input Force} \times \text{Input Distance} = \text{Output Force} \times \text{Output Distance}$ may be used to check for the proper design of a mechanical system. What type of model is this?

- A. Working model**
- B. Mathematical model**
- C. Statistical model**
- D. Visualization model**

31. What time period falls in between the bronze age and the middle ages?

- A. Iron age**
- B. Renaissance**
- C. Information age**
- D. Industrial Revolution**

32. Which provides the best information on how a device or system is designed to be operated?

- A. Manufacturer's operator manual**
- B. Your own trial and error**
- C. Guidelines offered by your job supervisor**
- D. Instructions from the previous operator**

33. The goal of maintenance is to keep products in:

- A. storage facilities**
- B. working order**
- C. inventory**
- D. repair**

34. After a company has finished making 5000 plastic parts they notice that some of them are lighter than the first ones that were made. What should be done to solve this problem?

- A. check the temperature**
- B. make a new mold**
- C. change the plastic**
- D. increase the pressure**

35. The development and widespread use of agricultural technology led to significant improvements in:

- A. Personal Hygiene**
- B. Human longevity and health**
- C. Engineering**
- D. Scientific discovery**

36. During the Renaissance period, the technological development of items such as telescopes, microscopes, and thermometers greatly influenced progress in:

- A. Science**
- B. Manufacturing**
- C. Construction**
- D. Electricity**

37. The ratio of the output force (load) produced by a working force applied to the effort.

- A. Mechanical Advantage**
- B. Efficiency**
- C. Work**
- D. Power**

38. A lawn equipment manufacturer has recently added a new product to their line of outdoor power equipment.

As a result the manufacturer is adding 75 new jobs to its local production facility. The new job openings are

an example of how technology has affected:

- A. The environment**
- B. Politics**
- C. Culture**
- D. The economy**

39. Running a virus scan regularly on your PC is an example of:

- A. Maintaining the system**
- B. Troubleshooting the system**
- C. Analyzing the system**
- D. Repairing the system**

40. What resources are shared within a technological environment or across other fields often resulting in innovation?

- A. money, knowledge, or marketing**
- B. creativity, money or skills**
- C. business, marketing, or ideas**
- D. ideas, knowledge, or skills**

41. The period of human history that dramatically influenced the advancement of science through the

development of instruments for measuring was the:

- A. Renaissance**
- B. Neometrics**
- C. Industrial Revolution**
- D. Information Age**

42. A manufacturing system would be considered "inefficient" when it:

- A. Requires unpredictable maintenance**
- B. Performs the same function continuously**
- C. Alerts the operator when there may be a malfunction**
- D. Can be adjusted automatically**

43. The process of planning, organizing, and controlling work is known as:

- A. design**
- B. analysis**
- C. measurement**
- D. management**

44. A coal fired power plant creates coal ash as a waste product. The container for coal ash unintentionally leaks into a river. What area has the leak affected most?

- A. Environment**
- B. Politics**
- C. Culture**
- D. Economy**

45. The compass, telescope, and calculator are all products of the:

- A. Renaissance.**
- B. Middle age**
- C. Information age**
- D. Iron age**

46. In order for an engineer to assess if a designed system is operating correctly:

- A. information is necessary.**
- B. thinking is necessary.**
- C. feedback is necessary.**
- D. communication is necessary.**

47. A new major highway is being planned to connect two small towns. Many of the towns people want the highway but have major concerns, as it would pass directly through a historical area. The towns people concerns are an example of how technology has affected:

- A. The economy**
- B. Culture**
- C. Politics**
- D. The environment**

48. The Renaissance, which translates to "rebirth", represents a significant period of human history that

resulted in major advancements of

- A. Industry and manufacturing**
- B. natural sciences**
- C. medical practices and procedures**
- D. agriculture and irrigation**

49. When an operator notices that a CNC machine is making rough cuts, the most likely cause is that the cutter:

- A. needs to be sharpened**
- B. needs to be returned to the supplier**
- C. is broken**
- D. is spinning too fast**

50. The invention of the transistor and microprocessor launched the:

- A. Information age**
- B. Industrial revolution**
- C. Renaissance**
- D. Global importing and exporting of goods**

51. The alphabet and coins came into general use during what time period?

- A. Iron age**
- B. Middle ages**
- C. Stone age**
- D. Information age**

52. Integrated circuits, microprocessors, fiber optics, and computer networks have exploded in use in the last few decades. What is the name of the age that in which these advancements were made?

- A. Industrial Age**
- B. Information Age**
- C. Data Age**
- D. Digital Age**

53. Coal ash from a coal fired power plant has leaked into a nearby water system. The governor and the legislature are crafting a new law that would provide cleaning of the water and proper disposal of the ash.

The new law is an example of how technology has affected:

- A. The environment**
- B. Politics**
- C. Culture**
- D. The economy**

54. Using a tennis racket to swat flies is an example of :

- A. Technology transfer**
- B. An invention**
- C. Trade-off**
- D. A discovery**

55. What is used to determine what is wrong with a piece of equipment?

A. Calibration

B. Troubleshooting

C. Installation

D. Alteration