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Technology Olympiad GRADE 9

DATE: 8 AUGUST 2025

TIME: 90 MINUTES

INSTRUCTIONS:

1. This booklet has 30 multiple choice questions and 10 open ended questions.
2. Use the answer sheet provided.

   Circle the letter corresponding to your answer.
3. All working details must be done in the space provided.
4. Calculators are permitted.
5. Diagrams are not necessarily drawn to scale.
6. The first 30 questions (Section A) carry 1 mark each and the last 10 questions (Section B)

   carry 2 marks each.
7. You have 90 minutes for the paper which works out to an average of 2.25 minutes per question.
8. Read the questions carefully before answering.
9. Visit the website: www.saolympiads.co.za.

Grade Nine Technology Olympiad 2025

SECTION A

Indicate the most correct answer by writing the correct letter on the answer sheet provided.

1. After the investigation, designing, making and evaluation of a model of a circuit, what will be the next step?
   A. Test the model
   B. Draw the model
   C. Communicate the model
   D. Make the model (1)

2. Lukanyo was given the size and materials to build a toy box. What do we call these requirements?
   A. Scenario
   B. Specifications
   C. Constraints
   D. Design brief (1)

3. What is the main purpose of using dimensions in graphic communications? It is to make sure that it provides…
   A. Neatness
   B. Completion
   C. Perfect size
   D. Accuracy (1)

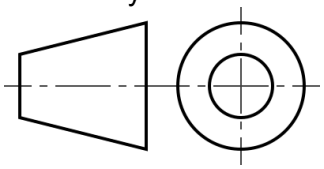
4. What is the purpose of using orthographic projection in engineering drawings?
   A. To simplify complex objects.
   B. To show only the front-view of an object.
   C. To represent 3-D objects on a 2-D plane.
   D. To create artistic rendering objects. (1)

5. A …… cylinder is an **output** cylinder in a hydraulic system.
   A. plunger
   B. master
   C. hydraulic
   D. slave (1)

6. In mechanical systems, an **effort** is sometimes called…
   A. Input force
   B. Output force
   C. Compression force
   D. Tension force (1)

7. At what angle do you draw the sloping line in isometric drawings?
   A. 15°
   B. 30°
   C. 45°
   D. 60° (1)

8. What does the symbol below represents?



   A. Fourth angle orthographic projection
   B. First angle orthographic projection
   C. Third angle orthographic projection
   D. Sencon angle orthographic projection (1)

9. Hydraulic systems are…
   A. A system that uses compressed liquid to do work.
   B. A system that uses compressed air to work.
   C. A system that uses fluid to do work.
   D. None of the above. (1)

10. A mechanical system with a closed hydraulic system that is used to lift heavy objects.
   A. Hydraulic press.
   B. Gum poles.
   C. Hydraulic jack.
   D. Master cyclinder. (1)

11. What does ICT in technology stands for?
   A. Information Technology
   B. Information Computer Technology
   C. Information communication Technology
   D. None of the above (1)

12. Which resistor is an electronic device that senses the amount of light falling on its surface? A /An …?
   A. LED
   B. LDR
   C. Transistor
   D. Capacitator (1)

13. Name an electronic component that has the following: base, collector and emitter?
    A. Transistor
    B. Capacitator
    C. Emitter
    D. Thermistor (1)

14. A beam which is supported at one end only is known as:
    A. Clapper bridge
    B. Suspension bridge
    C. Cantilever bridge
    D. Arch bridge (1)

15. According to Pascal's principle, the pressure exerted on one side of the hydraulic system transferred ….
    A. Equally to all parts of the system
    B. Without any loss
    C. In all directions to other parts of the system
    D. All of the above (1)

16. The force that draws the structure apart at its ends and tears up is called...
    A. Compression force
    B. Tension force
    C. Shear force
    D. Torsion force (1)

17. When investigating designs we need to consider…
    A. Fitness for purpose
    B. Any design
    C. Other things related to the design
    D. What the designer does not want to do (1)

18. The area that separates inner planets from outer ones is referred to as…
    A. Oort cloud belt
    B. Asteroid belt
    C. Kuiper belt
    D. Terrestrial belt (1)

19. The two main gases found in the sun are…
    A. Oxygen and Nitrogen
    B. Hydrogen and Oxygen
    C. Hydrogen and Lithium
    D. Hydrogen and Helium (1)

20. Which of the following objects is the smallest of them all
    A. Star
    B. Planet
    C. Solar system
    D. Galaxy (1)

21. The most abundant metal element in the Earth is…
    A. Aluminium
    B. Iron
    C. Nitrogen
    D. Gold (1)

22. Which planet is called the Red Planet?
    A. Mercury
    B. Mars
    C. Venus
    D. Earth (1)

23. Who invented the laws of the lever and pulley?
    A. Albert Einstein
    B. Archimedes
    C. John Wallis
    D. Joseph Huddart (1)

24. An alloy is metal that has…
    A. zinc in it.
    B. A mixture of tin or more metals.
    C. Is non magnetic.
    D. iron content. (1)

25. The two types of plastic are…
    A. polyplastic and thermoset.
    B. latex and polyplastic.
    C. polyester and polyplastic.
    D. thermoplastic and thermoset. (1)

26. Which of the following furnaces produce “pig iron”?
    A. Blast furnace
    B. Open heat furnace
    C. Electric arc furnace
    D. Bessermer furnace (1)

27. The S.I unit for current is…
    A. Volts
    B. Ampere
    C. Ohms
    D. Meters (1)

28. Calculate current when voltage is 1000 and resistance is 30,03Ω
    A. 1030,03A
    B. 30,03A
    C. 33,3A
    D. 3,33A (1)

29. An electronic device which offers opposition to the flow of current in a circuit is known as...
    A. Resistor
    B. Capacitator
    C. Insulator
    D. Conductor (1)

30. Identify the function of transistor in a circuit.
    A. It gives off light and sound energy when current passes through it.
    B. It shares and releases electrical energy.
    C. It acts a switch and amplifies current.
    D. It regulates the flow of current. (1)

SECTION B

31. Heat sensitive proteins that speed up chemical reaction on living things. (2)
32. Two types of pickles to preserve food available in South Africa include piccalilli and_____. (2)
33. _____ is a method of galvanising in which a coating of zinc is applied to a metal by electrolysis. (2)
34. A gear that is turned by an axle is called the driver gear, while the gear that is turned by the driver is called _____ (2)
35. _____ is a lubricant in a hydraulic system, it helps in reducing friction (2)
36. Gear A is driven and has 75 teeth and gear B is the driver, with 15 teeth calculate the ratio. (2)
37. The study of the solar system is called _____. (2)

38. After humans, which creature is the smartest? (2)

39. What is the name of the tallest mountain on earth? (2)

40. What is the term used to describe a group of stars that form a recognisable pattern? (2)

TOTAL MARKS = 50