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Technology Olympiad GRADE 9

DATE: 7 AUGUST 2026

TIME: 90 MINUTES

INSTRUCTIONS:

1. This booklet has 40 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 2026

SECTION A

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

1. What is the main purpose of using dimensions in graphic communication?
   A. Neatness
   B. Accuracy
   C. Size
   D. Completion (1)

2. Learners are asked to build an electrical toy car within two days. What do we call the allocated time?
   A. constraint
   B. budget
   C. requirement
   D. problem statement (1)

3. How are dimensions presented on drawings?
   A. centimetres
   B. kilometres
   C. millimetres
   D. metres (1)

4. Which are the four features used to make a 3D object look realistic?
   A. Texture, colour, shadow and shading.
   B. Texture, lines, shading and colour.
   C. Texture, dimensions, colour and shadow.
   D. Texture, colour, lines, and dots. (1)

5. What are the features of a product or system that make it user-friendly?
   A. artistic
   B. ergonomics
   C. aesthetics
   D. specifications (1)

6. If the resistance is 2Ω and the voltage is 8V, calculate the value of the current.
   A. 4A
   B. 16A
   C. 10A
   D. 0,25A (1)

7. What material is used when galvanising steel or iron to protect it from corrosion?
   A. Gold
   B. Mercury
   C. Platinum
   D. Zinc (1)

8. What is the correct method used to preserve metal using the undercoat, basecoat and topcoat?
   A. galvanising
   B. electroplating
   C. varnishing
   D. painting (1)

9. Which electrical component amplifies the flow of current?
   A. Buzzer
   B. Switch
   C. Transistor
   D. LDR (1)

10. Which type of plastic is used to manufacture water bottles?
    A. Polyethylene Terephthalate
    B. High-density Polyethylene
    C. Polypropylene
    D. Polystyrene (1)

11. According to Pascal's principle, the pressure exerted on one part of the system is 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)

12. Hydraulic jacks use ... to operate.
    A. gears
    B. fluids
    C. compressed gas
    D. fixed pulleys (1)

13. Torsion in structures can also be called ___ ?
    A. cutting
    B. squashing
    C. twisting
    D. pulling (1)

14. In 1st angle orthographic projection, which of the following represents the top view?
    A. Front-view
    B. Left view
    C. End view
    D. Plan view (1)

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

16. Which of the following is a disadvantage of Hydraulic system?
    A. High efficiency
    B. Low maintenance
    C. Possibility of leaks
    D. Quiet operation (1)

17. Which type of gear arrangement is commonly used to change direction of rotation?
    A. Spur gears
    B. Bevel gears
    C. Worm gears
    D. Rack and pinion gears (1)

18. In a mechanical system, what is the purpose of a cam?
    A. To transmit power between shafts.
    B. To convert rotational motion into reciprocating motion.
    C. To store potential energy.
    D. To control the flow of energy. (1)

19. What do we call the main food eaten by a population?
    A. Processed
    B. Rice
    C. Special
    D. Staple (1)

20. ___ farmers grow crops for their own use and for that of their family.
    A. commercial
    B. irrigation
    C. subsistence
    D. dripping (1)

21. The point during a seed's growth into a seedling when the first shoot and root break out of the seed case.
    A. Shooting
    B. Harvesting
    C. Germination
    D. Maturing (1)

22. Heating, cooling, salting and drying are examples of ___ ?
    A. Cooking food.
    B. Aeration of food.
    C. Pasteurising food.
    D. Preserving food. (1)

23. What is a potential benefit of using stem cell in regenerative medicine?
    A. They can be used to treat a wide range of diseases and injuries.
    B. They are readily available.
    C. Major ethical concerns.
    D. Biological risks like tumour formation and immune rejection. (1)

24. Using drones for delivery offers significant benefits, including the following except ___ ?
    A. Fast service.
    B. Lower operational costs.
    C. Increased environmental impact.
    D. Improved access to remote areas. (1)

25. Which principle explains why a small force applied to a small piston in a hydraulic system can lift a much larger load on a larger piston?
    A. Newton's law
    B. Louis Pasteur's law
    C. Ohms law
    D. Pascal's principle (1)

26. The design brief clearly indicates ___ .
    A. What the designer is going to ask about to solve the problem.
    B. What the designer does not want to do.
    C. What type of forces acting.
    D. What the designer is going to make to solve the problem. (1)

27. The type of force that is exerted on the bridge by the vehicles passing over the bridge …
    A. Dynamic force
    B. Even force
    C. Stable force
    D. Static force (1)

28. The property of the glass to be able to stand up to any strain before it cracks or breaks is tested.
    A. Brittleness
    B. Stability
    C. Toughness
    D. Hardness (1)

29. A beam which is supported at one end only is known as a ___ .
    A. Column
    B. Cantilever
    C. Lintel
    D. I-beam (1)

30. What is an alloy?
    A. Non-metals mixed with carbon.
    B. Metals mixed with other metals or non-metals.
    C. Semi-metals mixed with carbon.
    D. Steel mixed with carbon. (1)

SECTION B

Write your answer in the space provided; for True/False questions, circle True or False.

31. What does an ammeter measure? (2)

32. How are switches in an AND gate connected? (2)

33. What needs to be added to Iron to make it steel? (2)

34. What is Ferric Oxide commonly known as? (2)

35. In which country did pickling begin? (2)

36. New bioplastics are now also being created from? (2)

37. What do we mean by PDF? (2)

38. What term describes a place with a wireless internet connection? ___ (2)

39. Name the smallest Province in South Africa. (2)

40. (True/False) A thermosetting plastic cannot be softened once it has 'set'. (2)

TOTAL MARKS = 50