Technology Olympiad GRADE 8

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 Eight Technology Olympiad 2026

SECTION A

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

1. To collect data, the following could be used as a resource:
   A. Speak to or interview people
   B. Find information from any media
   C. Practical investigation and testing of a product
   D. A, B and C (1)

2. A sequence of events or actions presented to show the different steps for making a product is called a
   A. Portfolio
   B. Product
   C. Flow diagram
   D. Constraint (1)

3. The first response when given the context of a problem or need is to find out about
   A. The working drawing
   B. Both C and D
   C. The environmental situation
   D. The nature of the need (1)

4. Pear-shaped, eccentric and snail are examples of ___ .
   A. Cams
   B. Wheels
   C. Axles
   D. Gears (1)

5. Two gears are used in a gear train. The radius of the driver gear is 20cm. The radius of the driven gear is 10cm. What is the gear ratio of the gear system?
   A. 1:2
   B. 2:1
   C. 1:1
   D. 2:2 (1)

6. An indigenous structure would be made using
   A. Modern technologies to solve present day problems
   B. Imported material that is suitable for a need
   C. Local skills and local materials to make affordable structures that have little impact on the environment
   D. Local skills and imported material to make expensive structures (1)

7. One of the following materials is not natural.
   A. wood
   B. plastic
   C. leather
   D. clay (1)

8. The convention used to illustrate the hidden details in a drawing is ___.
   A. Centre lines
   B. Dimension lines
   C. Dash lines
   D. Feint lines (1)

9. The importance of recycling packaging material is to …
   A. Safeguard human health and environment.
   B. Increase air pollution.
   C. Make environment dirty.
   D. Increase unemployment. (1)

10. The two sloping members on the sides of horizontal beams.
    A. struts
    B. column
    C. tie
    D. rafter (1)

11. A front-view with depth __ degrees is used when making a 3D oblique projection.
    A. 45°
    B. 55°
    C. 30°
    D. 90° (1)

12. Three examples of structural failures.
    A. Fracture, dent, toppling over.
    B. Toppling over, bending, buckling.
    C. Dent, bending, cracking.
    D. Fracture, bending, toppling over. (1)

13. Name the gear that synchronises rotation.
    A. Driver gear
    B. Driven gear
    C. Idler gear
    D. Gear train (1)

14. A gear that is used to increase the applied force, change speed of rotation, and change the direction of rotation is ___ .
    A. Bevel gears
    B. Spur gears
    C. Worm gears
    D. Rack and pinion (1)

15. The following is the cheapest way of generating electricity.
    A. Nuclear/Thermal
    B. Sun/Thermal
    C. Hydro-electric
    D. Coal/Thermal (1)

16. It is used at power stations to produce very high voltage.
    A. Direct current
    B. Alternating current
    C. Step-up transformer
    D. Step-down transformer (1)

17. To increase the speed in a gear system, the driver gear should be …
    A. Bigger than the driven gear.
    B. Smaller than the driven gear.
    C. Same size as the driven gear.
    D. Near the idler gear. (1)

18. The ability of a machine to multiply force and do work with less effort …
    A. Ratio formula
    B. Mechanical advantage
    C. Velocity Ratio
    D. Effort arm (1)

19. A natural renewable fuel that can be burnt such as wood and cow dung …
    A. Diesel
    B. Paraffin
    C. Biofuel
    D. Gas (1)

20. Biodegradable materials are
    A. Environmentally friendly as they decompose
    B. Cannot decompose
    C. They pollute the environment
    D. All of the above (1)

21. The load arm is given as 150cm and the effort arm as 450cm. Use this data to calculate the mechanical advantage of this lever using the formula; MA = $\frac{Effort\ arm}{Load\ arm}$
    A. 300
    B. 600
    C. 3
    D. 30 (1)

22. A development of an open container has ___ tabs.
    A. 7
    B. 6
    C. 12
    D. 8 (1)

23. A gear with one tooth.
    A. Bevel gear
    B. Rack and pinion gear
    C. Spur gear
    D. Worm gear (1)

24. Packaging can provide the following information about the product except ___ .
    A. mass
    B. colour
    C. Ingredients
    D. Nutritional values (1)

25. The following are advantages of using photovoltaic cells except …
    A. Sunlight is free.
    B. Panels can operate for years.
    C. Cells are environmentally friendly.
    D. The cells need protection from the weather such as hail. (1)

26. South Africa generates most of its electrical energy from …
    A. Driving wind turbines
    B. Burning coal
    C. Hydro-electrical
    D. Nuclear thermal (1)

27. The following are examples of input devices except …
    A. Resistor
    B. Electrochemical cell
    C. Generator
    D. Solar panel (1)

28. Which type of cell generates electricity when they are exposed to sunlight?
    A. Motor
    B. Generator
    C. Photovoltaic cell
    D. Electrochemical cell (1)

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

30. The following are positive impacts of mining except ___ .
    A. foreign exchange
    B. Un-empowerment
    C. Poverty alleviation
    D. Social fulfilment (1)

SECTION B

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

31. Electrical current can either be direct current or ___ current. (2)

32. A power-generating machine with blades fitted to a shaft, that are turned by pressure of steam, gases or liquids is called … (2)

33. What term describes energy sources that cannot be replaced once used up? ---------- (2)

34. Which greenhouse gas is produced in large quantities when coal is burnt in power stations? (2)

35. (True/False) social media such as Twitter and Facebook have altered the way we interact with friends and family (2)

36. What is left behind when Ore is separated from other rock is called (2)

37. A liquid substance which can conduct electricity is called (2)

38. What force pushes or squashes a structure? (2)

39. What big mountain is the focus point of sunny Cape Town? (2)

40. Name the smallest province in South Africa. (2)

TOTAL MARKS = 50