

Answer Key for Part C (Technological Analysis Questions)

22. Explain how the pineapple cutter works by describing how each listed pair of components works together.

Crank and threaded tube: *The rotating crank gives the threaded tube rotational (helical) motion. OR The rotating crank brings about the helical motion of the threaded tube.*

(The crank transmits its rotational motion to the threaded tube, since the two components are interdependent.)

Threaded tube and disk: *The threaded tube gives the disk rotational (helical) motion. OR The threaded tube transmits its helical motion to the disk.*

(The threaded tube transmits its helical motion to the disk, since the two components are interdependent.)

Magnetized ring and magnetic switch: *When the magnetized ring approaches the magnetic switch, the electrical circuit closes. OR The magnetized ring activates the magnetic switch to allow the current to flow.*

(The magnetic field of the magnetized ring turns the magnetic switch on by bringing the switch plates together so they touch.)

Magnetic switch and sound device: *When the magnetic switch is on, the electric current flows and the sound device is activated. OR When the magnetic switch comes on, it activates the sound device.*

Note: The parenthetical information indicated above in grey type is not regarded as an essential part of the expected answer at this point, but is regarded as the type of answer that students will eventually be required to give.

MARKING SCALE

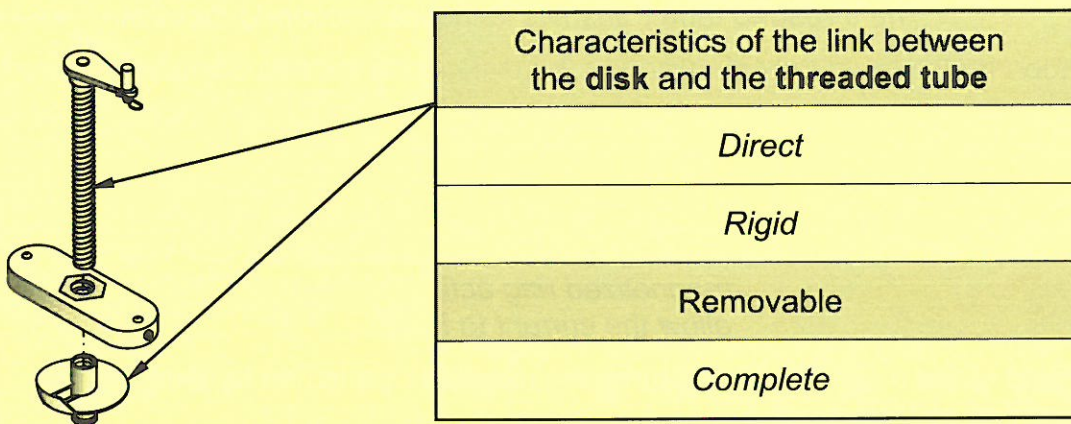
- 4 marks 4 appropriate explanations
- 3 marks 3 appropriate explanations
- 2 marks 2 appropriate explanations
- 1 mark 1 appropriate explanation
- 0 marks No appropriate explanations

23. The pineapple cutter has several links.

a) Name the two components that form a link with the following four characteristics: indirect, rigid, removable and partial.

Component		Component
<i>Handle</i> (item no. 2)	and	<i>Crank</i> (item no. 1)

b) Name the three missing characteristics of the link illustrated in the diagram below.



Note: The components and the characteristics can be indicated in any order.

Do not penalize students who identify the components by their item number only.

The two components forming the link are correctly identified Deduct 1 mark if one of the components is incorrect or omitted.										1	0		
Three characteristics correctly named Deduct 1 mark for each incorrect or omitted characteristic.										3	2	1	0

24. The pineapple cutter has several guiding controls.

Complete the following table by indicating the missing component and the types of guiding involved.

Guided Component	Component Acting as the Guiding Control	Type of Guiding Involved
Handle	Crank hole	<i>Rotational</i>
Threaded tube	Nut	<i>Helical</i>
Battery holder	<i>Base (item no. 11)</i>	<i>Translational</i>

Note: Do not penalize students who identify the component by its item number only or who use a symbol to identify the type of guiding involved.

MARKING SCALE

4 marks	4 correct answers
3 marks	3 correct answers
2 marks	2 correct answers
1 mark	1 correct answer
0 marks	No correct answers

25. Some of the components of the pineapple cutter perform specific electrical functions. Indicate the missing energy transformation, component and electrical functions in the appropriate box in the table below.

Energy Transformation	Component	Electrical Function
Electrical → Sound	Sound device	Energy transformation
<i>Chemical → Electrical</i>	Battery	<i>Power supply</i>
Magnetic → Mechanical	<i>Magnetic switch</i> (item no. 14)	<i>Control</i>

Note: Do not penalize students who identify the component by its item number only.

MARKING SCALE

- 4 marks 4 correct answers
- 3 marks 3 correct answers
- 2 marks 2 correct answers
- 1 mark 1 correct answer
- 0 marks No correct answers