



EXAMINATIONS COUNCIL OF ESWATINI
Eswatini Prevocational Certificate of Secondary Education

TECHNICAL STUDIES

Paper 1 Multiple Choice

5925/01

October/November 2024

1 hour

Additional Materials: Multiple Choice Answer Sheet
Soft clean eraser
Soft Pencil (Type B or HB is recommended)

READ THESE INSTRUCTIONS FIRST:

Write your centre number, candidate number and name on the answer sheet in the spaces provided, unless this has been done for you.

Write in soft pencil.

Do not use staples, paper clips, glue or correction fluid.

There are **40** questions in this Paper. Answer **all** questions. For each question there are four possible answers **A, B, C** and **D**. Choose the one you consider correct and record in **soft pencil** on the separate answer sheet.

Read the instructions on the answer sheet.

Each correct answer will score one mark. A mark will not be awarded for a wrong answer.

Any rough work should be done in this booklet.

Electronic calculator may be used.

This document consists of **10** printed pages and **2** blank pages.

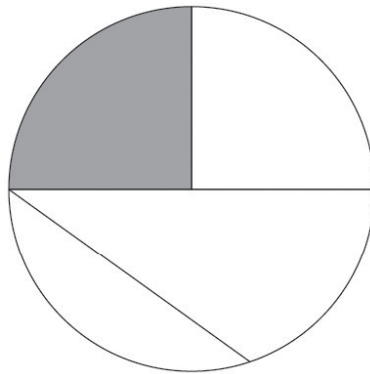
1 Which **one** of the following safety precautions should you observe when lifting heavy objects?

- A always use heavy duty gloves
- B always employ the correct posture
- C always ensure you are fit enough
- D always use a crane

2 Which **one** of the following trees would you classify under softwoods?

- A South African pine
- B beech
- C meranti
- D saligna

3 The diagram below shows parts of a circle. What name is given to the shaded part?



- A quadrant
- B segment
- C sector
- D radius

4 Which of the following metals is used for galvanising?

- A brass
- B aluminium
- C copper
- D zinc

5 Why is the mould in injection moulding warmed before injection of plastic?

- A to prevent the plastic hardening before the mould is full
- B to prevent the die from sticking to the mould
- C to enable free movement of the injector pins
- D to enable the plastic to drape on the mould

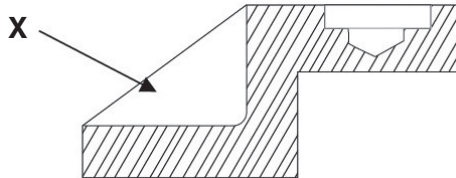
6 Which **one** of the following materials is suitable for making water pipes?

- A acrylic
- B lead
- C steel
- D PVC

7 Which **one** of the following is a non-ferrous metal?

- A mild steel
- B stainless steel
- C copper
- D cast iron

8 Name the feature indicated by the arrow **X**.



- A lug
- B boss
- C web
- D recess

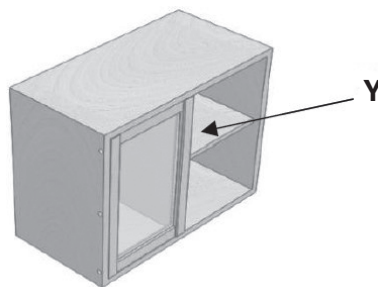
9 The tendency for certain plastics to return to their original form when reheated is known as:

- A plasticity
- B plastic memory
- C thermosetting
- D normalisation

10 Which **one** of the following statements is true about a lathe saddle?

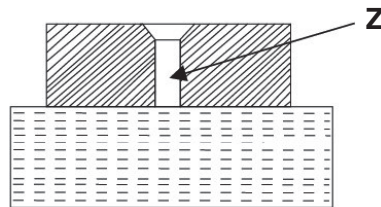
- A it holds irregular shaped work pieces
- B it supports cross slide movements
- C it supports long thin work pieces
- D it holds firmly the fixed steady

11 Name an appropriate joint that could be used to join shelf **Y** to the side of the cabinet shown below.



- A through housing joint
- B stopped butt joint
- C stopped housing joint
- D through rebate joint

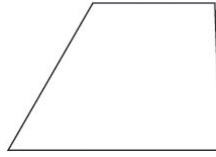
- 12 Which of the following processes could be used for finishing a wooden outdoor table?
- A polishing
 - B spraying
 - C galvanising
 - D painting
- 13 What is the advantage of a vernier caliper over a micrometer?
- A a vernier caliper takes inside and outside measurements
 - B a vernier caliper is more accurate and easy to use
 - C a vernier caliper is cheaper to maintain
 - D a vernier caliper is more durable
- 14 Which **one** of the following materials is suitable for making hammer heads?
- A mild steel
 - B medium carbon steel
 - C cast steel
 - D high carbon steel
- 15 A ductile material is described as one that:
- A can be drawn into a long length
 - B does not scratch easily
 - C resists corrosion and oxidation
 - D shatters under a sudden impact
- 16 The diagram below shows two pieces of wood ready to be joined by means of a countersunk screw.



Which **one** of the statements is true about the diameter of hole **Z**?

- A it is made smaller than the diameter of the screw shank
- B it is known as the shank
- C it is known as a clearance hole
- D it has the same diameter as the core of the screw thread

17 What is the name of the geometrical shape shown in the diagram below?



- A rectangle
- B parallelogram
- C rhombus
- D trapezoid

18 Name the marking out tool shown below.



- A outside caliper
- B odd-leg caliper
- C inside caliper
- D wing caliper

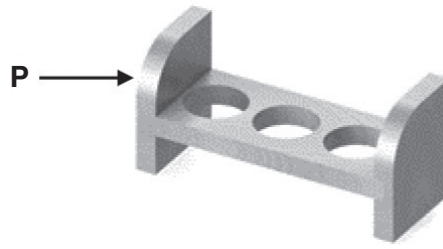
19 Which **one** of the following processes reduces hardness in steel and makes it less brittle but more tough?

- A tempering
- B annealing
- C normalising
- D hardening

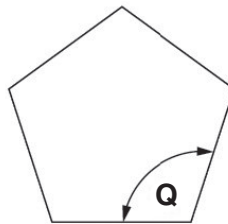
20 Name the lathe turning process in which conical shapes are produced.

- A parallel turning
- B taper turning
- C knurling
- D contour turning

- 21 The diagram below shows a spice rack that is made from wood. Select the appropriate tool that can be used to produce the curved part **P**.

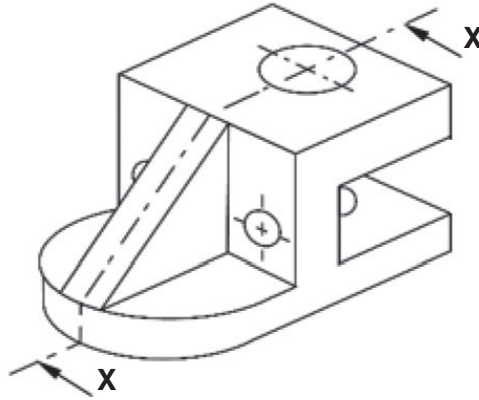


- A circular saw
 B radial arm saw
 C jigsaw
 D dovetail saw
- 22 What are the advantages of manufactured boards over solid timber?
- A water resistant and cheap
 B wide and stable
 C need no finish and more durable
 D resistant to insect attack and fireproof
- 23 Where do projection lines converge in a perspective drawing?
- A vanishing point
 B ground line
 C eye level
 D horizon level
- 24 A regular polygon is shown below. What is the size of the angle marked **Q**?

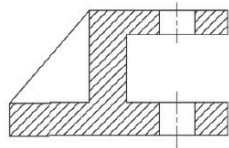


- A 95°
 B 108°
 C 120°
 D 150°
- 25 Which **one** of the following angles can be constructed using strict geometrical methods?
- A 25°
 B 35°
 C 45°
 D 55°

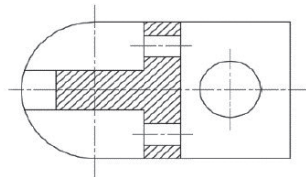
26 The diagram below shows a sectioned block.



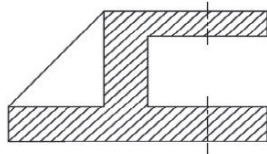
Which of the following views show section X-X of the block?



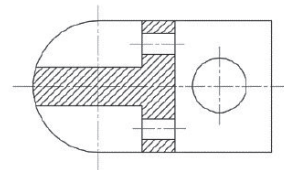
A



B



C

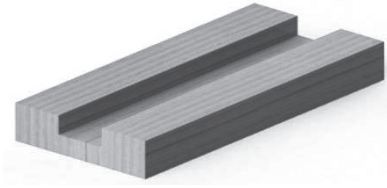


D

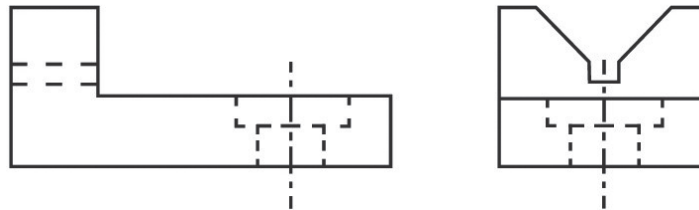
27 The portion of a pyramid which remains after its upper part has been cut off is known as the:

- A** frustum
- B** truncate
- C** development
- D** section

- 28 Which of the following machinery could be used to produce the groove on the piece of timber shown in the diagram below?



- A thicknesser
 B jointer
 C router
 D scroll saw
- 29 What does the term aesthetics refer to?
- A the process of creating products that meet users' needs
 B the efficiency of a product in a particular environment
 C the ability of a product to perform its function
 D the beauty and appreciation of a product
- 30 Two views of a component are shown below.



State the type of projection used.

- A first angle projection
 B third angle projection
 C isometric projection
 D oblique projection
- 31 Name the metals that are combined to produce brass.
- A lead and tin
 B copper and zinc
 C lead and zinc
 D copper, tin and lead

- 32 What is the tempering colour for a cold chisel?
- A dark straw
 - B brown
 - C light purple
 - D cherry red
- 33 Why is acrylic suitable for the manufacture of car rear light units?
- A it is clear and rigid
 - B it is a good electrical insulator
 - C it does not scratch easily
 - D it magnifies light
- 34 Why do most ferrous metals corrode more easily when exposed to moisture?
- A they have high carbon content
 - B they have low carbon content
 - C they are ductile and brittle
 - D they have more chromium
- 35 What is the purpose of knurling on some engineering features?
- A to improve the aesthetics of the feature
 - B to improve grip on the feature
 - C to prevent movement between parts
 - D to allow the feature to easily lock on other parts
- 36 What is the advantage of a top hung window over a side hung window?
- A looks stylish and modern
 - B it has adequate ventilation
 - C it brings in sufficient light
 - D keeps out rain even when open
- 37 State **two** plastics that are suitable for use in electrical insulation.
- A acrylic and ABS
 - B glass reinforced plastic and phenol formaldehyde
 - C urea formaldehyde and acrylic
 - D polystyrene and polyester resin
- 38 During the start-up procedure in oxy-acetylene welding, the gas does not ignite. What could be the reason for this?
- A too much gas is opened
 - B acetylene is opened first
 - C oxygen is opened first
 - D both gases are opened at the same time

- 39 What is the function of a steady in lathe work?
- A to support long bars and prevent vibration
 - B to allow cutting tools to make deep cuts
 - C to allow cutting tools to cut at an angle
 - D to support the face plate to prevent it from moving
- 40 The acronym ABS in plastic technology stands for:
- A acrylic bond standard
 - B approved British standard
 - C acrylonitrile butadiene styrene
 - D acrylic British style

