



Myfuture CBC Revision

metalwork - Grade 10

Question Paper

1. What should you do if a classmate's clothing catches fire in the workshop?

- A. Throw water from a distance without assessing the situation
- B. Tell them to run outside to put out the fire
- C. Stop, drop, and roll or use a fire blanket to smother the flames
- D. Remove the clothing quickly by pulling it off forcefully

2. When making a project drawing, which scale is appropriate for a bench-sized metal frame 1.2 m by 0.8 m if paper is limited?

- A. No scale, just scribble measurements
- B. 1:1000 (drawing will be too small to see details)
- C. 1:1 (life size drawing will be 1.2 m by 0.8 m on paper)
- D. 1:10 (drawing will be 120 mm by 80 mm on paper)

3. Which tool gives very accurate measurements of small external dimensions to 0.01 mm?

- A. Carpenter's square
- B. Micrometer
- C. Marker pen
- D. Measuring tape

4. Which process joins metal by using a tungsten electrode and inert gas, often chosen for precision and clean welds on thin or stainless sheet metal?

- A. TIG welding using a non-consumable tungsten electrode
- B. Resistance soldering in an oven
- C. Pop riveting with a hand tool
- D. MIG welding with a continuous wire electrode

5. Which feature distinguishes an isometric drawing from a perspective drawing?

- A. Parallel lines remain parallel in isometric; in perspective they converge to vanishing points
- B. Isometric shows only one face; perspective shows three faces
- C. Perspective keeps all measurements true while isometric does not
- D. Isometric uses photographs; perspective uses hand sketches

6. Which tool would you use to transfer a measurement between two distant points on a long metal bar?

- A. Trammel (beam compass)
- B. Micrometer
- C. Vernier caliper
- D. Scriber

7. What is the best immediate first aid for a small thermal burn from a hot metal piece?

- A. Cover the burn with cotton wool and leave it
- B. Break any blisters quickly to let out the fluid
- C. Rub oil or butter into the burn to soothe it
- D. Cool the burn with running clean water for 10–20 minutes and seek help

8. Soldering is commonly used for which type of work?

- A. Heavy structural steel joining on roofs
- B. Fixing concrete cracks
- C. Polishing large metal sheets
- D. Joining electrical components and small metal parts at low temperatures

9. For a school metalwork project requiring a bright long-lasting finish on steel, which final finish would be most appropriate?

- A. Applying kitchen oil once and never maintaining
- B. Leaving the steel in the rain to naturally darken
- C. Chromium plating (or bright electroplated finish) or high-quality paint after proper prep
- D. Covering with sand to protect from scratches

10. What is the correct way to store sharp tools like files and chisels in the school workshop?

- A. Loose in a drawer mixed with other items
- B. Stuck upright into a pile of rags
- C. On the floor near the bench for easy reach
- D. In a rack or toolbox with points covered, handles accessible and blades facing down or

11. Which of these is an alloy rather than a pure metal?

- A. Brass
- B. Copper
- C. Aluminium (pure)
- D. Gold (pure)

12. In a cabinet oblique drawing, how is the depth of the object usually represented?

- A. Full true depth with no reduction
- B. Depth is not shown at all
- C. Double the true depth to make it stand out
- D. Half the true depth to reduce distortion

13. Which joining technique is commonly used to join ductwork corners and seams in sheet metal fabrication without heavy equipment?

- A. Seaming and folding to lock edges together
- B. Riveting using large structural rivets
- C. Spot welding in every corner
- D. Brazing with silver solder in all seams

14. Which measuring tool should be used when very long straight measurements (several metres) are required on a metal fabrication job?

- A. Marking gauge
- B. Vernier caliper
- C. Steel tape (measuring tape)
- D. Micrometer

15. Which of the following is the safest way to secure a small metal piece for filing or sawing?

- A. Balance it on the bench edge
- B. Hold it in one hand and file with the other
- C. Ask a friend to hold it with pliers
- D. Clamp it firmly in a bench vice or use a clamp

16. Which tool combination is best for marking and checking a parallel line exactly 15 mm from an edge on a metal component?

- A. Micrometer and centre punch
- B. Vernier caliper and protractor
- C. Marking gauge set to 15 mm and a scribe
- D. Tape measure and a hammer

17. Why is marking out important before cutting or drilling metal?

- A. To make the metal change colour
- B. To ensure accurate size, position and alignment of cuts or holes
- C. To make the metal rust faster
- D. To harden the metal surface

18. Which joint type is formed when two sheets overlap and are joined along the overlapping area, commonly used for welding and riveting?

- A. Butt joint where edges meet in the same plane
- B. Lap joint where one sheet overlaps another
- C. Edge joint where edges are aligned side by side
- D. Tee joint where one sheet joins the middle of another

19. Why must you remove rings, bracelets and loose jewellery before working on machines?

- A. They will make your hands too heavy to work
- B. They always get dirty and are hard to clean
- C. They can catch on moving parts and pull you into the machine
- D. They interfere with hearing protection

20. Which method helps prevent rust on iron tools and steel components?

- A. Exposing them to acids
- B. Coating with paint, oil or galvanising
- C. Bending them repeatedly
- D. Leaving them outside in the rain

21. Which practice helps protect the lungs when grinding, cutting or welding materials that produce fine dust or fumes?

- A. Only working outdoors without protection
- B. Holding your breath while working
- C. Working faster so you inhale less
- D. Wearing a suitable respirator or dust mask and using local extraction

22. What does annealing do to a metal?

- A. Bend the metal to shape it
- B. Heat the metal and allow it to cool slowly to soften it and remove internal stresses
- C. Cool the metal quickly to make it harder
- D. Clean the metal with acid

23. What is the key difference between isometric and oblique pictorials?

- A. Oblique always uses colour while isometric is black and white
- B. Isometric foreshortens all three axes equally; oblique shows the front face in true shape while
- C. Isometric shows only top and bottom; oblique shows only left and right
- D. Oblique uses three vanishing points but isometric uses none

24. Which measuring tool gives more precise measurements than a steel rule for small dimensions?

- A. Marker pen
- B. Centre punch
- C. Try square
- D. Vernier caliper

25. What is the main purpose of tack welding when assembling a metal frame for a school project?

- A. To permanently secure parts without further work
- B. To paint over the joints quickly
- C. To cool metal faster
- D. To hold parts temporarily in correct position before final welding

26. What is the main advantage of using tack welds during assembly?

- A. They hold parts in position for final welding without distorting the work
- B. They make the finished surface shiny
- C. They replace the need for final welds entirely
- D. They cool the metal quickly to make it stronger

27. Which tool is used to join sheet metal with blind rivets quickly in a school workshop?

- A. Gas welding torch for oxy-fuel welding
- B. Blind rivet hand tool (pop rivet gun)
- C. Bucking bar and sledge for solid rivets
- D. Angle grinder for cutting metal

28. On which type of drawing are exact dimensions normally placed for fabrication?

- A. Freehand sketches for clients
- B. Orthographic (multi-view) drawings
- C. Photographs of the object
- D. Pictorial drawings

29. How should flammable liquids like petrol or solvent be stored in the school workshop?

- A. In glass jars on the windowsill
- B. In empty drink bottles for convenience
- C. In labelled, sealed containers in a well-ventilated, designated flammable storage area
- D. Mixed together in an open tray

30. Which personal protective equipment (PPE) is essential when performing arc welding in a school workshop?

- A. Regular glasses and sandals
- B. Welding helmet and gloves
- C. Baseball cap and scarf
- D. No protection needed for small welds

31. Which joining technique would be least suitable for joining two stainless steel thin sheets if cleanliness and corrosion resistance are required?

- A. TIG welding with inert gas shielding
- B. Using stainless steel rivets with proper sealant
- C. Adhesive bonding with compatible adhesive
- D. Arc welding without removing surface contaminants or shielding

32. What should you do if you smell gas (from a gas cylinder or torch) in the workshop?

- A. Ignore it because it will go away
- B. Turn off the gas source if safe, ventilate the area, evacuate and notify the instructor
- C. Light a match to find the leak
- D. Spray water around to cover the smell

33. What should you do if you smell gas or strong chemical fumes in the workshop?

- A. Inform the teacher, evacuate the area if instructed, and ventilate if safe to do so
- B. Light a match to see where it comes from
- C. Breathe deeply to get used to it
- D. Spray water into the air to mask the smell

34. How many faces of an object are normally visible in a standard isometric pictorial?

- A. Four
- B. Two
- C. One
- D. Three

35. Which statement about using a centre punch and hammer is correct when preparing to drill?

- A. Only use the punch after the drill has started cutting
- B. Strike the punch at a very oblique angle to make a slanted mark
- C. Use many light taps so the metal is gradually removed
- D. Use a sharp, firm blow to make a clear dimple at the marked centre point

36. Why should loose clothing, jewelry, and long hair be secured in the workshop?

- A. They reduce noise levels
- B. They make tools last longer
- C. They improve ventilation
- D. They can get caught in moving machinery and cause severe injury

37. What is the purpose of a centre punch when used with a hammer before drilling a hole?

- A. To mark the measurement in millimetres
- B. To smooth the metal surface
- C. To make a dimple so the drill bit starts on centre and does not wander
- D. To cut threads in the hole

38. When preparing a pictorial drawing for a KCSE-style project, what is most important to include?

- A. Correct projection method, clear lines and neat presentation
- B. Photographs but no drawn views
- C. Random measurements without views
- D. Only colours and no lines

39. Which is a correct response to loud ringing or a sharp pain in the ear after using noisy equipment?

- A. Start singing loudly to test your hearing
- B. Report to the teacher and avoid further noisy exposure until checked
- C. Grab the noisy tool and use it more
- D. Ignore it and continue, it will go away

40. Which of these joints is most suitable when you need a removable connection in a metal project?

- A. Permanent brazed joint
- B. Soldered lap joint
- C. Bolt and nut connection
- D. Welded butt joint

41. Which metal is commonly used for making cooking pots and jikos in Kenya because it is light and conducts heat well?

- A. Stainless steel only
- B. Tool steel
- C. Cast iron
- D. Aluminium

42. Which joining method creates the least visible external protrusion and is chosen when a flush outer surface is needed?

- A. External pop rivets left proud
- B. Bolting with large hex nuts
- C. Countersunk rivets or countersunk bolts
- D. Clinching with raised heads

43. Which metal joining method produces the highest local heat and requires the most heat control?

- A. Adhesive bonding
- B. Bolting
- C. Riveting
- D. Arc welding

44. Why is it important to check and secure the guard on machines such as bench grinders or circular saws before use?

- A. Guards protect you from flying debris and prevent contact with moving parts
- B. They are only for advanced operators
- C. They slow down the work and are unnecessary
- D. They make the machine look professional

45. Which process is best for joining galvanised sheet where heat could damage the protective zinc coating and release toxic fumes?

- A. Oxy-acetylene brazing without precautions
- B. Mechanical fastening (rivets or bolts) or adhesives
- C. High-heat arc welding directly
- D. Burning off the zinc then welding in open classroom

46. Which tool is used to cut external threads on a round rod by hand?

- A. Cold chisel
- B. Tap
- C. Die
- D. Centre punch

47. Which marking tool is most suitable for laying out parallel lines a fixed distance from an edge?

- A. Dividers
- B. Spirit level
- C. Marking gauge
- D. Centre punch

48. Which technique joins thin sheets by melting a low-melting alloy (solder) and requires flux to remove oxides?

- A. Adhesive bonding with epoxy
- B. Riveting with solid rivets
- C. Soldering using a low-melting alloy and flux
- D. TIG welding with inert gas

49. When estimating project cost, which item is important to include besides material prices?

- A. Only the price of fuel for going to school
- B. Labour time, tools consumables (like welding rods, grinding discs), and waste allowance
- C. The cost of unrelated items like groceries
- D. No other items — materials are all that matter

50. Which statement about pop (blind) rivets is true for sheet metal work in classrooms?

- A. Pop rivets require welding equipment to install
- B. Pop rivets can be set from one side and are quick to install
- C. Pop rivets produce a metallurgical fusion like brazing
- D. Pop rivets are only used for very thick steel plates