Myfuture CBC Revision metalwork - Grade 10

Question Paper

1. Which fastener allows easy disassembly of a metal assembly in future repairs?

A. Permanent weld

B. Soft solder

C. Blind rivet

D. Bolt and nut

2. When measuring a small bore diameter to high accuracy in the workshop, which tool is most appropriate?

A. Inside micrometer or bore gauge

B. Scriber

C. Prick punch

D. Steel rule

3. Which joining method is most appropriate when you need a permanent, tamper-proof joint for sheet metal roofing installation in a Kenyan school project?

A. Temporary adhesive tape

B. Soldering with soft solder

C. Bolting with lock nuts

D. Pop riveting or sealed rivets

4. Which tool is used to transfer a measurement from a ruler to workpiece for marking out arcs and circles?

A. Try square

B. Prick punch

C. Dividers

D. Combination square

5. What is the main purpose of using files in metalwork?

A. To measure thickness accurately

B. To cut large sections of metal quickly

C. To coat metal with protective film

D. To smooth, shape and remove small amounts of metal

6. Why is it important to keep measuring tools clean and free from oil and dirt in a school metalwork shop?

A. So they will stick to magnets

B. So they look shiny for visitors

C. Contamination causes inaccurate readings and wear

D. So they can be used as hammers

7. Which metal is most commonly used for electrical wiring because of its high conductivity?

A. Iron

B. Copper

C. Titanium

D. Lead

8. Which practice reduces distortion when spot welding sheet metal in a school project?

A. Weld a long continuous bead in one pass across the whole piece

B. Keep the heat on one spot until it glows for several minutes

C. Hammer randomly while welding to change shape

D. Weld short spots at intervals and cool between welding runs

9. What should you do if you are unsure how to operate a new workshop machine?

A. Try to figure it out while the machine is running

B. Read someone else's class notes silently and then start

C. Use it only during break time without telling anyone

D. Ask a teacher or trained instructor for instruction and supervision

10. Which finish process is commonly applied after joining sheet metal to protect against rust in Kenya's humid regions?

A. Heating the joint to red hot

B. Leaving the bare metal exposed

C. Painting or applying protective coating

D. Filing the joint rough

11. Which metal is commonly used as a sacrificial anode to protect steel (for example in marine fittings or pipelines)?

A. Aluminium

B. Brass

C. Zinc

D. Copper

12. Where is the single vanishing point located in a one-point perspective drawing?

A. At the corner of the drawing board

B. On the horizon line in front of the viewer

C. Below the object

D. At the centre of each object face

13. 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. Scriber

D. Vernier caliper

14. Where should gas cylinders (oxygen and acetylene) be stored in the metalwork workshop?

A. Laid on their side under a bench

B. In the workshop office for easy access

C. Upright, secured with chains and separated by type, away from heat

D. Tightly grouped together near the welding area

15. Why would you use masking tape when painting part of a metal project in the workshop?

A. To reduce the amount of primer needed

B. To make the metal stronger

C. To make the paint dry faster

D. To protect areas and create clean paint edges

16. How should cutting tools like hacksaws or shears be stored in the workshop?

A. In a pile mixed with electrical cords

B. Lying loose on the floor

C. In a secure rack or with blade guards to prevent accidental cuts

D. Hung by their teeth on a nail

17. For a lightweight school project where the joint must be reversible without damaging the sheet metal, which method is best?

A. Brazing

B. Pop riveting

C. Adhesive bonding

D. Bolting with nuts and washers

18. Which metal is most commonly used to make corrugated roofing sheets (known locally as 'corrugated iron')?

A. Brass sheets

B. Pure aluminium sheets

C. Copper sheets

D. Galvanised steel

19. What is the correct order of steps when preparing a metal surface for painting?

A. Clean, remove rust, sand, apply primer, then paint

B. Weld and paint immediately without cleaning

C. Paint first, then clean and sand

D. Apply primer to dirty metal, then sand

20. What is the correct action before cleaning or repairing a power machine in the workshop?

A. Switch off, unplug or isolate the machine using lockout/tagout procedures

B. Tell a friend to watch while you work on it

C. Leave the machine running and try to fix it quickly

D. Just pull the main fuse without informing anyone

21. How should a cutter or scriber be stored to keep it in good condition in a school metalwork shop?

A. Thrown into a toolbox with hammers

B. In a protective rack or with point covered

C. Loosely in a drawer with other tools

D. Left on the surface plate

22. How does a vernier caliper differ from a micrometer in typical workshop use?

A. Vernier calipers measure both internal and external dimensions and depths; micrometers

B. Vernier calipers are for marking out lines, micrometers cut metal

C. Vernier calipers are only used for depth, micrometers only for angles

D. Vernier calipers are less accurate than a scriber

23. 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. MIG welding with a continuous wire electrode

B. TIG welding using a non-consumable tungsten electrode

C. Pop riveting with a hand tool

D. Resistance soldering in an oven

24. Which process joins sheet metal by heating a filler metal above 450°C but below the melting point of the base metals, producing a strong joint with capillary action?

A. Soldering at low temperatures

B. Brazing using a higher-melting filler metal

C. Mechanical fastening like bolting

D. TIG welding where base metal melts

25. Why is a template used when making several identical parts in a project?

A. To reproduce the same shape accurately many times

B. To hide mistakes from the teacher

C. To make the metal change colour

D. To make one-of-a-kind random shapes

26. What is the main advantage of using a vernier caliper over a simple steel rule?

A. Can mark out parallel lines quickly

B. Automatically squares edges

C. Greater precision for measuring small dimensions

D. Easier to measure very long distances

27. Which inspection check is most important after assembling and finishing a metal project?

A. Throw it in water to see if it floats

B. Ignore inspection if it passes appearance test

C. Check dimensions, joint strength and overall finish for defects

D. Only check whether it looks like the teacher’s example

28. What is the main reason to use machine guards on equipment such as drills and presses?

A. To slow the machine down for no reason

B. To prevent contact with moving parts and reduce the risk of injury

C. To increase noise levels

D. To make the machine look nicer

29. When joining two sheet metal edges to make a neat seam without fasteners, which process is commonly used in light fabrications like gutters or ducts?

A. Brazing with very high temperatures

B. Clinching with rivets inserted

C. Spot welding in the middle of overlapped sheets

D. Seaming or hemming to fold and lock edges

30. What is the purpose of a bill of materials (BOM) for a metalwork project?

A. To show only the cost of electricity

B. To list all materials and quantities needed for the project

C. To provide a list of jokes for the workshop

D. To describe how to paint the finished product only

31. Which joining method uses a filler metal with a higher melting point than solder but lower than the base metal, usually applied with a torch?

A. Spot welding

B. Bolting

C. Brazing

D. Soldering

32. What is the main purpose of a try square in metalwork measuring and marking out?

A. To measure internal diameters

B. To measure depth of holes

C. To grind edges

D. To check and mark right angles

33. Which property of a metal describes its ability to be hammered into thin sheets?

A. Ductility

B. Conductivity

C. Brittleness

D. Malleability

34. What is the first step you should take when planning a metalwork project at school?

A. Apply paint to test colours

B. Start cutting metal immediately

C. Borrow tools without a plan

D. Make a detailed sketch and list of materials

35. What is the purpose of a surface plate in marking out work?

A. Measure internal threads

B. Sharpen scribers

C. Hold parts while welding

D. Provide a flat reference surface for accurate marking and inspection

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

A. Centre punch

B. Spirit level

C. Dividers

D. Marking gauge

37. Brass is an alloy made from which two metals?

A. Copper and zinc

B. Iron and carbon

C. Copper and tin

D. Aluminium and magnesium

38. Which treatment is a chemical conversion coating used to improve corrosion resistance of steel before painting?

A. Phosphating

B. Sanding only

C. Heating red-hot

D. Tying with wire

39. What is a key environmental consideration when finishing metal with solvents or paint?

A. Work in a well-ventilated area and dispose leftovers according to local rules
B. Burn surplus solvent in the workshop

C. Always pour leftover paint down the nearest drain

D. Spray inside classrooms to save outdoor space

40. What name is given to the ferrous alloy produced when carbon is added to iron?

A. Pure iron

B. Bronze

C. Steel

D. Brass

41. Which measuring tool gives the highest typical precision among these for workshop use?

A. Tape measure

B. Carpenter's folding rule

C. Marking gauge

D. Micrometer

42. What does 'ductility' refer to in metals?

A. The ability to stick to other metals

B. The ability to be drawn into wire

C. Resistance to water

D. Resistance to heat

43. Which factor most affects the choice between welding and adhesive bonding for joining sheet metal in a classroom project?

A. Colour of the metal

B. Required joint strength, heat sensitivity, and equipment available
C. Availability of protective gloves only

D. Time of day the work is done

44. Which ferrous metal is very hard and is commonly used for making cutting tools and chisels?

A. Copper

B. Brass

C. High-carbon steel

D. Pure aluminium

45. Which personal protective equipment is essential when welding?

A. Welding helmet with appropriate shade

B. Light dust mask

C. Cotton cap only

D. Ordinary sunglasses

46. Which finishing coat should you apply to a metal project before painting to improve adhesion?

A. No coat, paint directly on dirty metal

B. Clear water only

C. Ordinary floor polish

D. Metal primer (rust-inhibiting primer)

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

A. They improve ventilation

B. They make tools last longer

C. They can get caught in moving machinery and cause severe injury
D. They reduce noise levels

48. Which material property is most important to check before choosing spot welding for sheet metal joining?

A. Whether the metal has holes already

B. Electrical resistivity and thickness of the sheets

C. Type of adhesive previously applied

D. Colour of paint on the metal

49. Which method produces a permanent, strong joint by melting the parent metal and filler?

A. Nailing

B. Welding

C. Taping

D. Clipping

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

A. They make the finished surface shiny

B. They cool the metal quickly to make it stronger

C. They hold parts in position for final welding without distorting the work

D. They replace the need for final welds entirely