

HSC Industrial Technology Timber: Multiple-Choice Bank

83 official NESA questions (2015–2025, text-only ones; diagram questions are omitted) + 32 original practice questions with explanations. Answers are at the end of each part.

Part A: Official NESa questions by year

2025

2025 Q1. What is the primary purpose of a stopped housing joint?

- (A) To conceal the housing
- (B) To prevent the joint from slipping
- (C) To allow for easy disassembly of the joint
- (D) To create a decorative housing on the front edge

2025 Q2. A spade bit is used to drill a hole through a piece of timber. What is the recommended method to prevent splintering?

- (A) Use a centre punch to mark the drilling spot
- (B) Drill a pilot hole before drilling the full hole
- (C) Clamp a piece of scrap wood under the wood being drilled
- (D) Use a drill bit that is specifically designed for drilling timber

2025 Q3. What is the purpose of a tailstock in woodturning?

- (A) To hold the tool rest in place
- (B) To control the speed of the lathe
- (C) To create a decorative groove on the timber
- (D) To provide additional support to the workpiece during turning

2025 Q4. How does a pictorial drawing differ from a working drawing?

- (A) It focuses on construction details.
- (B) It is only used for displaying 3D views.
- (C) It includes measurements and instructions.
- (D) It is only used for displaying multiple 2D views.

2025 Q5. Laminated timber is considered to be stronger than solid timber because

- (A) it uses synthetic materials.
- (B) it is made from hardwood.
- (C) it is treated with special chemicals.
- (D) its defects are limited to individual layers.

2025 Q6. What is the primary purpose of rails in cabinetmaking?

- (A) To provide decorative elements on cabinet doors
- (B) To connect and stabilise vertical components of a frame
- (C) To support the weight of the cabinet and prevent sagging
- (D) To allow for the attachment of hinges and other cabinet hardware

2025 Q7. What is a major disadvantage of using plywood in cabinetmaking?

- (A) It cannot be cut or shaped easily.
- (B) It is heavy and difficult to transport.
- (C) It has poor strength compared to solid timber.
- (D) It can swell or delaminate when exposed to moisture.

2025 Q8. When should mechanical drawer runners be used in cabinetmaking?

- (A) When cost efficiency is more of a priority than durability
- (B) When making traditional cabinets that require a vintage appearance
- (C) When constructing drawers that need smooth movement under heavy loads
- (D) When constructing frequently opened drawers that only need a simple friction fit

2025 Q9. Why is it recommended that a tenon be one third of the timber's thickness?

- (A) For efficient chisel use and minimal waste
- (B) To provide maximum strength and stability
- (C) For ease of insertion and prevention of splitting
- (D) To ensure maximum gluing area for bonding surfaces

2025 Q10. What is the correct order of operations for finishing the timber of a completed woodworking project?

- (A) Sand, raise the grain, sand, apply finish, buff/polish
- (B) Buff/polish, sand, raise the grain, sand, apply finish
- (C) Sand, buff/polish, raise the grain, sand, apply finish
- (D) Apply finish, sand, raise the grain, buff/polish, sand

2024

2024 Q1. Which of the following is an everyday use for timber filler in woodworking?

- (A) Staining wood surfaces
- (B) Smoothing out imperfections in wood
- (C) Adding structural strength to wood joints
- (D) Enhancing the durability of outdoor furniture

2024 Q2. Which is the most appropriate classification of a biscuit joint?

- (A) Drawer
- (B) Carcase
- (C) Framing
- (D) Widening

2024 Q3. What does 'DAR' indicate?

- (A) Dry and ready
- (B) Dressed all round
- (C) Durable and resistant
- (D) Delaminated and restored

2024 Q4. Which saw is used to cut timber along the grain?

- (A) Rip saw
- (B) Back saw
- (C) Coping saw
- (D) Dovetail saw

2024 Q5. What is the primary purpose of incorporating additional materials, such as glass, to woodworking projects?

- (A) To improve the ease of project assembly
- (B) To prevent damage during transportation
- (C) To increase the overall weight of the product
- (D) To enhance the aesthetic appeal of the final product

2024 Q6. What is the primary environmental concern when purchasing exotic timbers?

- (A) Durability
- (B) Cost-effectiveness
- (C) Sustainable sourcing
- (D) Recycling and reusing

2024 Q7. Why should squareness and flatness be tested during dry assembly of components?

- (A) To ensure the components meet aesthetic standards

- (B) To guarantee proper alignment and uniformity in surfaces
- (C) To confirm adherence to industry-specific safety standards
- (D) To determine the components' resistance to temperature changes

2024 Q8. Why do cabinet handles often include snap-off screws?

- (A) They streamline the installation process.
- (B) They provide security of the cabinet contents.
- (C) They allow for easy adjustment of the screw length.
- (D) They eliminate visible screw heads for a sleek design.

2024 Q9. Why is it important to include a materials list when planning a woodworking project?

- (A) It provides final cutting dimensions.
- (B) It reduces the environmental impact of the project.
- (C) It ensures all necessary supplies are accounted for.
- (D) It limits the choice of materials and resource options.

2024 Q10. Which order is the most appropriate for component preparation of framed cabinet doors?

- (A) Stiles, rails, centre panel
- (B) Centre panel, stiles, rails
- (C) Centre panel, rails, stiles
- (D) Rails, stiles, centre panel

2023

2023 Q3. Which type of hammer is used to extract nails from timber?

- (A) Claw
- (B) Ball pein
- (C) Cross pein
- (D) Warrington

2023 Q4. What is the primary benefit of incorporating a mitre joint in high-end furniture construction?

- (A) It is easy to cut and join.
- (B) Clamping is not required.
- (C) It does not show end grain.
- (D) A very strong joint is produced.

2023 Q5. Which method of turning would be most suited to producing a large bowl?

- (A) Faceplate
- (B) Parallel
- (C) Spindle
- (D) Taper

2023 Q6. The pitch of a wood screw is the distance

- (A) between the head and the tip.
- (B) between the adjacent threads.
- (C) from the head to the unthreaded portion.
- (D) from the tip to the end of the threaded portion.

2023 Q8. What is the most common type of adhesive used in the production of plywood?

- (A) Hot melt glue
- (B) Contact adhesive
- (C) Polyurethane glue

- (D) Urea formaldehyde

2023 Q9. What is the name for a bump, swelling or bulge that grows on the trunk of a tree?

- (A) Burl
- (B) Flitch
- (C) Sapwood
- (D) Shake

2023 Q10. What is the main disadvantage of using a water-based finish on timber rather than an oil-based finish?

- (A) It will stain timber yellow.
- (B) It makes timber look unnatural.
- (C) It will darken timber over time.
- (D) It changes the texture of timber.

2022

2022 Q2. Where would you normally find a box pin joint?

- (A) Doorframe
- (B) Drawer
- (C) Shelf
- (D) Table

2022 Q3. Hot melt glue is commonly used for

- (A) dovetail joints.
- (B) temporary joinery.
- (C) attaching a leg to a rail.
- (D) mortice and tenon joints.

2022 Q4. In which situation would you commonly use a staple gun?

- (A) Joining thin pieces of timber
- (B) For scarf joints on thin materials
- (C) Where it is difficult to put in nails
- (D) For joining a thin sheet to a carcass

2022 Q5. What is the benefit of cutting grooves for a floating bottom in drawer construction?

- (A) It is easier to construct
- (B) It is cheaper to construct
- (C) It provides more gluing area
- (D) It allows for seasonal movement

2022 Q8. Which joint could be strengthened by the use of a groove and feather?

- (A) Mitre
- (B) Finger
- (C) Box pin
- (D) Dovetail

2022 Q9. Which of the following is a property of shellac?

- (A) Fast drying
- (B) Water based
- (C) Water proof
- (D) Hard wearing

2022 Q10. Where would a scribed joint be used?

- (A) In toolbox assembly
- (B) Joining window frames
- (C) In carcase construction
- (D) Joining moulded boards

2021

2021 Q1. What is the first step in timber preparation?

- (A) Select face side
- (B) Gauge to width
- (C) Select face edge
- (D) Gauge to thickness

2021 Q3. Which of the following lists two carcase joints?

- (A) Dovetail, housing
- (B) Corner halving, dovetail
- (C) Tongue and groove, scribed
- (D) Groove and feather, mortise and tenon

2021 Q4. Which term is used for timber that is very finely sliced?

- (A) Biscuit
- (B) Intarsia
- (C) Parquetry
- (D) Veneer

2021 Q6. The drawing shows a nail being extracted. Block of timber Why is the block of timber placed under the pincers?

- (A) Give a better finish
- (B) Give better leverage
- (C) Prevent the nail from bending
- (D) Prevent the nail from breaking

2021 Q8. The diagram shows a knockdown joint. What type of fastener is used?

- (A) Cam lock
- (B) Coach screw
- (C) Connector bolt
- (D) Threaded insert

2021 Q9. Which liquid is mixed with 'shellac' to make French polish?

- (A) Vinegar
- (B) Acetone
- (C) Turpentine
- (D) Methylated spirits

2021 Q10. What is the disadvantage of converting logs into timber by the quarter sawing method?

- (A) The timber will warp easily.
- (B) The timber will shrink easily.
- (C) A lot of wood is wasted in the process.
- (D) The figure on the face is less attractive.

2020

2020 Q3. What is the most effective method of fixing upholstery to a stool?

- (A) Nails
- (B) Screws
- (C) Staples
- (D) Stitching

2020 Q5. Flat head nails are used in best practice cabinet work for attaching

- (A) door handles.
- (B) veneer edging.
- (C) plywood backing.
- (D) decorative moulding.

2020 Q6. Which row of the table correctly identifies features of a bolt and barrel knockdown fitting? Permanent Suitable for use as a Quick to Requires special

- (A) joint
- (B) disassembled
- (C) disassembled
- (D) joint

2020 Q7. Which of the following is a characteristic of 'green' timber when compared to 'seasoned' timber?

- (A) It is heavier
- (B) It is more stable
- (C) It contains less water
- (D) It is more likely to contain seasoning defects

2020 Q8. A mark is circled on a piece of timber. What is the purpose of the mark circled?

- (A) The mark shows the end of the timber
- (B) The mark shows where to cut the timber
- (C) The mark shows the face side and face edge
- (D) The mark shows where to apply an edge treatment

2020 Q9. Which tool is best for testing the flatness of a table top?

- (A) Calipers
- (B) Trammel
- (C) Straight edge
- (D) Winding sticks

2020 Q10. Which row of the table is correct for medium-density fibreboard? Structure Adhesive Origin Application

- (A) Coarse particles
- (B) Fine particles
- (C) Coarse particles
- (D) Fine particles

2019

2019 Q1. What is the most appropriate tool to use to dress the edge of a timber board

- (A) Jack plane
- (B) Try square
- (C) Trying plane
- (D) Straight edge

2019 Q2. Radiata pine logs are to be milled for use as fence palings. Which conversion method is best suited to milling the logs?

- (A) Live sawing
- (B) Slab sawing
- (C) Back sawing
- (D) Quarter sawing

2019 Q4. Why should care be taken when using red cedar in a school workshop?

- (A) It is very heavy.
- (B) It stains fingers black.
- (C) It is known to cause allergic reactions.
- (D) Router cutters need to be very sharp or they will burn the timber.

2019 Q6. The introduction of a driver-operated forklift truck to move pallets in a furniture factory is an example of

- (A) automation.
- (B) industrialisation.
- (C) mechanisation.
- (D) multiskilling.

2019 Q7. A table top, 1800 mm × 900 mm, is to be assembled from 6 lengths of timber using widening joints, each 1800 mm × 150 mm × 25 mm. Which tool would be used to hold the table top together while the glue dries?

- (A) G-cramp
- (B) Sash cramp
- (C) Strap cramp
- (D) Framing cramp

2019 Q9. Which list contains only properties of general purpose polyvinyl acetate (PVA) glue?

- (A) Ready to use, waterproof and easy clean up
- (B) Ready to use, water soluble and easy clean up
- (C) Ready to use, water soluble and solvent to clean up
- (D) Needs to be mixed, waterproof and easy clean up

2018

2018 Q1. Which type of hammer is best suited for driving in small panel pins?

- (A) Claw hammer
- (B) Lump hammer
- (C) Ball pein hammer
- (D) Warrington hammer

2018 Q3. Which hand tool is most appropriate to reduce the width of the 600 mm board shown, from 140 mm to 137 mm?

- (A) Rip saw
- (B) Jack plane
- (C) Tenon saw
- (D) Block plane

2018 Q4. Which of the following drawer joints would allow for a dry assembly to test for fit, strength and operation?

- (A) Butt
- (B) Dovetail
- (C) Mitre
- (D) Rebate

2018 Q5. Which of the following is the correct sequence for drilling and driving a countersunk screw into hardwood?

- (A) Countersink, clearance, pilot, insert screw
- (B) Countersink, pilot, clearance, insert screw
- (C) Pilot, clearance, countersink, insert screw
- (D) Pilot, clearance, insert screw, countersink

2018 Q8. What is measured to determine the length of a roundhead screw?

- (A) The length of the thread
- (B) The total length of the shank
- (C) The overall length of the screw
- (D) The length embedded in the material

2017

2017 Q1. What does the abbreviation DAR indicate about timber?

- (A) It has one smooth edge.
- (B) It has two machined surfaces.
- (C) It is less expensive than rough sawn.
- (D) It has four square machined surfaces.

2017 Q2. Why does each layer of veneer have its grain direction at 90° to the next layer in the manufacture of plywood?

- (A) Strength
- (B) Aesthetics
- (C) Thickness
- (D) Machinability

2017 Q3. What is the function of a mortise gauge?

- (A) To measure depth and width
- (B) To create small holes in timber
- (C) To produce arcs and circles on timber
- (D) To produce lines parallel to an edge in timber

2017 Q4. Which conversion process produces the most stable board?

- (A) Back sawing
- (B) Live sawing
- (C) Quarter sawing
- (D) Through sawing

2017 Q5. Which machine would be most suitable to reduce the dimension of the 2.4 m board shown from 30 mm to 28 mm?

- (A) Thicknesser
- (B) Belt sander
- (C) Jack plane
- (D) Linisher

2017 Q6. Which of the following is the most suitable joint to hide end grain on a corner joint?

- (A) Butt
- (B) Housing
- (C) Mitre
- (D) Mortise and tenon

2017 Q7. Which of the following is the most appropriate joint for the cross rail of the door shown?

- (A) Rebate
- (B) Mortise and tenon
- (C) Groove and feather
- (D) Tongue and groove

2017 Q8. Which of the following shows a set of items commonly found on a working drawing?

- (A) Scale, WHS, dimensions, location
- (B) Dimensions, scale, cutting list, sections
- (C) Cutting list, costings, dimensions, scale
- (D) Cutting list, dimensions, scale, SDS

2017 Q10. Which of the following is the most suitable to create the blind hole shown?

- (A) Countersink bit
- (B) Forstner bit
- (C) Hole saw
- (D) Twist drill

2016

2016 Q3. How are burls formed?

- (A) Abnormal growth
- (B) Damage during felling
- (C) Poor conversion process
- (D) Deformation of the pith

2016 Q5. Which tool would be the most appropriate to produce a smooth surface on an internal curve?

- (A) Rasp
- (B) Chisel
- (C) Scraper
- (D) Smoothing plane

2016 Q6. Why should furniture be dry assembled before final assembly?

- (A) To remove excess glue
- (B) To remove excess moisture
- (C) To check if the joints fit properly
- (D) To remove stresses from all directions

2016 Q7. Which of the following applies to formaldehyde adhesive?

- (A) Adheres on contact
- (B) Dries to a clear finish
- (C) Can be softened by heat once set
- (D) Setting action is caused by chemical change

2016 Q9. What term is used to describe the application of pieces of veneer to a surface to form decorative patterns, designs or pictures?

- (A) Decoupage
- (B) Marquetry
- (C) Parquetry
- (D) Pyrography

2016 Q10. A project requires ten boards, each 250 mm wide, 100 mm thick and 5.3 metres long. How much would the project cost if timber is \$100 per cubic metre?

- (A) \$13.25
- (B) \$132.50
- (C) \$660.25
- (D) \$6600.25 Industrial Technology Timber Products and Furniture

2015

2015 Q1. What is the purpose of the kerf on a saw blade?

- (A) To remove waste material
- (B) To reduce noise when cutting
- (C) To prevent the blade jamming
- (D) To reduce vibration when cutting

2015 Q3. Which of the following adhesives would be the LEAST suitable for application in outdoor furniture?

- (A) PVA
- (B) Epoxy resin
- (C) Urea formaldehyde
- (D) Resorcinol formaldehyde

2015 Q4. In the conversion and preparation of timber, what does ripping refer to?

- (A) Cutting to length
- (B) Cutting along the grain
- (C) Cutting across the grain
- (D) Cutting at any compound angle

2015 Q5. Which of the following processes is honing?

- (A) Setting the teeth on a handsaw to create the kerf
- (B) Sharpening of a scraper with a hardened steel rod
- (C) Using a whetstone to finish sharpening of a tool blade
- (D) Removing fine timber shavings with a hardened plate

2015 Q6. What is the main advantage of air seasoning over kiln seasoning of timber?

- (A) Faster removal of moisture content
- (B) Reduced expense due to lower energy input
- (C) Increased control over final moisture content
- (D) Increased stability due to slower moisture removal

2015 Q7. What is the purpose of the ridges on the underside of a countersunk head chipboard screw?

- (A) To remove the need to pre-countersink the hole
- (B) To bind into the timber surface to prevent splitting
- (C) To slow the screw entry to avoid stripping the thread
- (D) To strengthen the screw head to allow removal and reuse

2015 Q8. For which of the following would it be best to use a bandsaw blade with a high tooth per inch count and a thin width?

- (A) Fast cutting of stock
- (B) Ripping thick sections
- (C) Cutting round stock safely
- (D) Cutting curves and thin stock

2015 Q9. Which of the following lists three methods that can be used in the cutting of veneers?

- (A) Quarter slicing, rift slicing and back sawing

- (B) Rift slicing, quarter slicing and rotary peeling
- (C) Live sawing, quarter slicing and rotary peeling
- (D) Rotary peeling, tangential sawing and rift slicing

2015 Q10. Why should grain direction be considered before thicknessing?

- (A) To improve cutting speed
- (B) To reduce wear on the blades
- (C) To minimise tearing of the grain
- (D) To reduce the noise of cutting operations

Part A answers

Year	Answers
2025	Q1 A · Q2 C · Q3 D · Q4 B · Q5 D · Q6 B · Q7 D · Q8 C · Q9 B · Q10 A
2024	Q1 B · Q2 D · Q3 B · Q4 A · Q5 D · Q6 C · Q7 B · Q8 C · Q9 C · Q10 A
2023	Q3 A · Q4 C · Q5 A · Q6 B · Q8 D · Q9 A · Q10 D
2022	Q2 B · Q3 B · Q4 D · Q5 D · Q8 A · Q9 A · Q10 D
2021	Q1 A · Q3 A · Q4 D · Q6 B · Q8 A · Q9 D · Q10 C
2020	Q3 C · Q5 C · Q6 B · Q7 A · Q8 C · Q9 C or D · Q10 B
2019	Q1 C · Q2 A · Q4 C · Q6 C · Q7 B · Q9 B
2018	Q1 D · Q3 B · Q4 B · Q5 C · Q8 D
2017	Q1 D · Q2 A · Q3 D · Q4 C · Q5 A · Q6 C · Q7 B · Q8 B · Q10 B
2016	Q3 A · Q5 C · Q6 C · Q7 D · Q9 B · Q10 B
2015	Q1 C · Q3 A · Q4 B · Q5 C · Q6 B · Q7 A · Q8 D · Q9 B · Q10 C

Part B: Original practice questions

B1. Which part of a tree is living, conducts sap and is generally less durable than the timber nearer the centre?

- (A) Pith
- (B) Heartwood
- (C) Sapwood
- (D) Bark

B2. Which statement about hardwoods and softwoods is correct?

- (A) All hardwoods are harder than all softwoods.
- (B) Softwoods come from conifers (gymnosperms).
- (C) Radiata pine is a hardwood.
- (D) Eucalypts are softwoods.

B3. Timber has stopped gaining or losing moisture to the surrounding air. Its moisture content is at

- (A) fibre saturation point.
- (B) green condition.
- (C) equilibrium moisture content.
- (D) kiln-dry condition.

B4. Why are stickers placed between layers of boards during air seasoning?

- (A) To add weight to the stack
- (B) To allow air to circulate and keep boards flat
- (C) To seal the ends of the boards
- (D) To protect the boards from rain

B5. What is the main purpose of sealing the ends of boards during seasoning?

- (A) To slow end drying and prevent end splits
- (B) To identify the species
- (C) To speed up drying
- (D) To prevent insect attack

B6. Which conversion method gives the least waste and fastest production but a mixture of grain orientations?

- (A) Quarter sawing
- (B) Back sawing
- (C) Live sawing
- (D) Rift sawing

B7. Plywood is made with an odd number of plies mainly so that

- (A) it is cheaper.
- (B) the two face veneers run in the same direction and the sheet stays balanced.
- (C) it can be bent easily.
- (D) it uses less glue.

B8. Which manufactured board is made from refined wood fibres and resin and is valued for its smooth, easily painted and routed surface?

- (A) Particleboard
- (B) Plywood
- (C) MDF
- (D) Blockboard

B9. Which board would be most appropriate for a vanity cabinet carcass in a bathroom?

- (A) Standard particleboard
- (B) HMR particleboard
- (C) Hardboard
- (D) Untreated MDF

B10. Which adhesive is the best choice for a laminated curved chair rocker because it is rigid when cured and resists creep?

- (A) Hot melt
- (B) Contact adhesive
- (C) Urea-formaldehyde
- (D) General purpose PVA

B11. Which adhesive requires both surfaces to be coated and allowed to become touch dry before they bond on contact?

- (A) Contact adhesive
- (B) Epoxy resin
- (C) PVA
- (D) Resorcinol

B12. In a mortise and tenon joint, the tenon is usually made about

- (A) one-half of the rail thickness.
- (B) one-third of the rail thickness.
- (C) one-quarter of the rail thickness.
- (D) the full rail thickness.

B13. Which joint is classified as a carcass joint?

- (A) Bridle
- (B) Housing
- (C) Halving
- (D) Biscuit widening joint

B14. Why are the growth rings of boards alternated when making a widening joint?

- (A) To improve appearance only
- (B) To balance cupping so the top stays flat
- (C) To make gluing faster
- (D) To reduce the number of boards

B15. What is the main advantage of knock-down fittings for a furniture manufacturer?

- (A) They are stronger than any glued joint.
- (B) They allow flat-pack transport and easy assembly.
- (C) They require hand-cut joints.
- (D) They prevent disassembly.

B16. Which machine is used to bring a board to a consistent thickness after one face has been flattened?

- (A) Jointer
- (B) Thicknesser
- (C) Band saw
- (D) Linisher

B17. Which saw can cut a mitre and a bevel at the same time?

- (A) Table saw with a cross-cut sled
- (B) Mitre saw

- (C) Compound mitre saw
- (D) Jigsaw

B18. Which router type is best suited to cutting a stopped groove in the middle of a panel?

- (A) Trim router
- (B) Plunge router
- (C) Fixed-base router with a bearing-guided bit
- (D) Laminate trimmer

B19. What is the correct order for preparing a timber surface for a clear finish?

- (A) Finish, sand, scrape
- (B) Plane/scrape, sand through the grits, raise grain, light sand, remove dust
- (C) Sand with coarse grit only, then finish
- (D) Stain, then plane

B20. French polish is made by dissolving shellac in

- (A) mineral turpentine.
- (B) water.
- (C) methylated spirits.
- (D) acetone.

B21. Which is an environmental advantage of water-based finishes over solvent-based finishes?

- (A) They are more resistant to heat.
- (B) They release fewer volatile organic compounds (VOCs).
- (C) They need fewer coats.
- (D) They give an amber colour.

B22. Before any blade change on a table saw, the operator must first

- (A) wear hearing protection.
- (B) isolate the power and lock out and tag out the machine.
- (C) lower the blade fully.
- (D) clean the table.

B23. In the hierarchy of control, which is the MOST effective way to reduce exposure to wood dust?

- (A) Wearing a P2 mask
- (B) Displaying warning signs
- (C) Eliminating or isolating the source with dust extraction at the machine
- (D) Rotating workers

B24. The main WHS risk specific to machining recycled timber is

- (A) slippery floors.
- (B) hidden nails and screws damaging blades and causing kickback.
- (C) poor lighting.
- (D) electrical faults in the machine.

B25. A driver-operated forklift moving packs of timber in a mill is an example of

- (A) automation.
- (B) mechanisation.
- (C) specialisation.
- (D) multi-skilling.

B26. Which federal law requires importers of timber products to carry out due diligence to reduce the risk of importing illegally logged timber?

- (A) Fair Work Act 2009
- (B) Illegal Logging Prohibition Act 2012
- (C) Work Health and Safety Act 2011
- (D) Protection of the Environment Operations Act 1997

B27. A flat management structure is MOST likely to result in

- (A) slow decisions passing through many levels.
- (B) quick decisions and flexible responses to customers.
- (C) large specialised departments.
- (D) formal multi-level quality control.

B28. A table top $2.0\text{ m} \times 1.0\text{ m}$ needs three coats of finish. One litre covers 12 m^2 . How many litres are needed?

- (A) 0.5 L
- (B) 1.0 L
- (C) 1.5 L
- (D) 2.0 L

B29. Five boards are each 2.4 m long, 200 mm wide and 50 mm thick. What is the total volume?

- (A) 0.024 m^3
- (B) 0.12 m^3
- (C) 0.24 m^3
- (D) 1.2 m^3

B30. A dining table top 900 mm wide is made from boards 140 mm wide. What is the minimum number of boards needed (ignore jointing losses)?

- (A) 6
- (B) 7
- (C) 8
- (D) 9

B31. Which historical development most directly enabled flat-pack furniture?

- (A) Hand-cut dovetails
- (B) Manufactured boards combined with knock-down fittings
- (C) French polishing
- (D) Air seasoning

B32. Which technology allows parts to be designed on a computer and cut automatically from a full sheet with minimal waste?

- (A) Steam bending
- (B) CAD/CAM with a CNC nesting router
- (C) Hand router with a template
- (D) Panel saw

Part B answers and explanations

- **B1: C.** Sapwood is the living outer wood that conducts sap; heartwood is dead, darker and more durable.
- **B2: B.** The split is botanical: softwoods are conifers, hardwoods are broad-leaved trees, regardless of hardness.
- **B3: C.** EMC is the moisture content in balance with the surrounding air.
- **B4: B.** Stickers create air gaps around every board and, lined up vertically, stop bowing.
- **B5: A.** Moisture leaves end grain fastest; sealing slows it and reduces end splits and checks.
- **B6: C.** Live (through) sawing makes parallel cuts straight through the log.
- **B7: B.** A balanced construction with matching face grain resists warping.

- **B8: C.** Medium density fibreboard is made from fibres, giving a smooth, uniform surface and edges.
- **B9: B.** High moisture resistant board uses water-resistant resins that resist swelling.
- **B10: C.** UF glue cures by chemical reaction to a rigid line with a long working time; PVA can creep under constant stress.
- **B11: A.** Contact adhesive bonds instantly when the two coated surfaces meet; used for laminates.
- **B12: B.** One-third leaves enough timber either side of the mortise for strength (2025 MC9).
- **B13: B.** Housing, rebate, dovetail and scribed joints are carcass joints.
- **B14: B.** Each board cups the opposite way to its neighbour, balancing movement.
- **B15: B.** KD fittings allow flat packing, lower freight cost and customer assembly.
- **B16: B.** The jointer flattens the face; the thicknesser makes the opposite face parallel at a set thickness.
- **B17: C.** A compound mitre saw pivots (mitre) and tilts (bevel) together.
- **B18: B.** A plunge router can lower the spinning bit into the work at any point and lift it out at the end.
- **B19: B.** Surface preparation progresses from cutting tools to finer abrasives, with grain raising before the final sand.
- **B20: C.** Shellac flakes dissolved in methylated spirits form French polish (2021 MC9).
- **B21: B.** Water-based finishes contain far less solvent, reducing VOC emissions and fire risk.
- **B22: B.** Isolation and lockout/tagout prevent accidental start-up during maintenance.
- **B23: C.** Elimination and engineering controls rank above administrative controls and PPE.
- **B24: B.** Embedded metal is the hazard specific to recycled timber (2024 Q15 feedback).
- **B25: B.** Mechanisation uses machines operated by people; automation is computer-controlled (2019 MC6).
- **B26: B.** The Illegal Logging Prohibition Act 2012 (Cth) sets due diligence requirements.
- **B27: B.** Few management layers mean decisions are made quickly by the owner/manager.
- **B28: A.** $2.0 \times 1.0 = 2 \text{ m}^2 \times 3 \text{ coats} = 6 \text{ m}^2 \div 12 \text{ m}^2/\text{L} = 0.5 \text{ L}$.
- **B29: B.** $2.4 \times 0.2 \times 0.05 = 0.024 \text{ m}^3 \text{ per board} \times 5 = 0.12 \text{ m}^3$.
- **B30: B.** $900 \div 140 = 6.43$, so round up to 7 boards.
- **B31: B.** Stable large boards plus KD fittings allowed parts to be shipped flat and assembled by customers.
- **B32: B.** CAM nesting arranges parts efficiently and the CNC router cuts them automatically.