



RRB ALP 2025 CBT 2

Assistant Loco Pilot · CEN 01/2025 · CBT 2 · Fitter Trade · Part B (Fitter) · Question Paper

English

All 2 Shifts (Sets) · Part B (Fitter) Section · Official Answer Key

About this Compilation

This booklet contains all 2 shift papers of the RRB ALP 2025 CBT 2 (Fitter) examination in English (Part B (Fitter) section only), with the correct option marked as per the official answer key.

✓ Correct option (highlighted green)

How to use

- Use the **Index** page to jump directly to any set (clickable).
- Questions appear section by section in the order of the paper, numbered 1 onward.
- Diagram and wide-table questions appear at full width at the end of their section.
- The correct answer is highlighted in green with a tick.

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Set 1

28 Jul 2026

9:30 AM - 12:00 PM

Set 2

28 Jul 2026

2:30 PM - 5:00 PM

Part B (Fitter)

75 Questions • Answer Key

Q1 Part B (Fitter)

What is the primary purpose of carrying out routine maintenance on workshop equipment?

- A. To modify equipment design for new tasks
- B. To replace old machines with new equipment
- C. To increase production speed beyond design limits
- D. To ensure consistent performance and minimize downtime ✓

Q2 Part B (Fitter)

Which of the following is an example of a lever?

- A. A screw holding two boards together
- B. A hydraulic jack used for lifting heavy vehicles
- C. A pulley with a rope
- D. A crowbar used to lift a heavy object ✓

Q3 Part B (Fitter)

In a bolt drawing, which line type is typically used to show the hidden portion of the thread inside a drilled hole?

- A. Solid thick lines for visible outlines
- B. Chain lines indicating center paths
- C. Dashed lines representing hidden details ✓
- D. Wavy lines showing internal details

Q4 Part B (Fitter)

Which advantage of a D.C. welding generator allows control of heat distribution between the electrode and the base metal?

- A. Polarity selection capability ✓
- B. Cooling fan operation
- C. Welding cable insulation
- D. Electrode coating selection

Q5 Part B (Fitter)

While setting up a cross belt drive in a workshop, what practical disadvantage might be observed compared to an open belt drive system?

- A. The cross belt drive experiences increased wear due to belt rubbing and twisting ✓
- B. The cross belt drive requires less frequent maintenance than open belt drive systems
- C. The cross belt drive improves pulley alignment and reduces power loss significantly
- D. The cross belt drive reduces vibration and operates more quietly than open belt drive

Q6 Part B (Fitter)

Which of the following best describes the main function of a solid pulley in power transmission systems?

- A. It increases the force applied to the driven shaft
- B. It transmits rotary motion between shafts using a belt ✓
- C. It is used to connect electrical circuits in machines
- D. It changes the direction of motion in gear systems

Q7 Part B (Fitter)

Which part of a depth gauge rests on the reference surface while taking a measurement?

- A. Lock screw
- B. Base ✓
- C. Spindle
- D. Vernier scale

Q8 Part B (Fitter)

Which property of ceramic tool materials is most beneficial during dry machining operations?

- A. High toughness
- B. High resistance to heat ✓
- C. Low cost
- D. Ease of sharpening



Q9 Part B (Fitter)

Which tool is most suitable for tightening and loosening pipes in pipe fitting work?

- A. Adjustable spanner
- B. Hacksaw
- C. Pipe wrench
- D. Screwdriver

Q10 Part B (Fitter)

An AC welding transformer typically reduces the mains voltage to an open-circuit voltage ranging between:

- A. 120 to 180 volts
- B. 10 to 20 volts
- C. 40 to 100 volts
- D. 200 to 250 volts

Q11 Part B (Fitter)

Which of the following best describes the primary use of a pillar file in fitting work?

- A. Enlarging round holes in metal
- B. Shaping flat surfaces and slots with parallel sides
- C. Removing material from curved surfaces
- D. Sharpening saw blades for cutting

Q12 Part B (Fitter)

What is the main reason for using a shuttle valve instead of a two-way valve in a system with two independent control points for a single actuator?

- A. A shuttle valve enables actuator operation from either control point without signal interference or loss.
- B. A shuttle valve discharges air from both control points when either is activated.
- C. A shuttle valve allows only one control point to function at a time by blocking the other.
- D. A shuttle valve interlocks the signals from two control points to prevent simultaneous operation.

Q13 Part B (Fitter)

Which kind of drill is mainly used to enlarge an existing hole rather than create a new one?

- A. Core drill
- B. Twist drill
- C. Spade drill
- D. Center drill

Q14 Part B (Fitter)

If a pneumatic system must alternate the air supply between two actuators based on manual control, which valve classification best suits this function?

- A. Non-return valve
- B. Flow control valve
- C. Pressure relief valve
- D. Directional control valve

Q15 Part B (Fitter)

While assembling a pneumatic press, which valve type should be chosen to precisely manage the speed of the cylinder during operation?

- A. Pressure reducing valve
- B. Directional control valve
- C. Shuttle valve
- D. Flow control valve

Q16 Part B (Fitter)

An engineer selects an M8 screw for assembling two steel plates. Which value indicates the nominal diameter in the specification $M8 \times 1.25 \times 40$?

- A. 1.25 mm
- B. 40 mm
- C. 8 mm
- D. 16 mm

Q17 Part B (Fitter)

A machine in the workshop suddenly stops working and emits smoke during a critical operation. As the shift supervisor, which immediate action best demonstrates proper emergency management for system failure response?

- A. Shut down the machine immediately and activate emergency ventilation.
- B. Evacuate the work area immediately and leave the smoke unchecked.
- C. Begin repairing the machine immediately to restore normal operation.
- D. Notify the maintenance team immediately and await further assistance.



Q18 Part B (Fitter)

During the overhaul of a workshop drilling machine, what is the most appropriate initial step to ensure safety before any maintenance activity?

- A. Check accuracy of spindle alignment using dial indicator
- B. Lubricate all gears and sliding surfaces thoroughly
- C. Remove dust and debris from the work area
- D. Isolate power supply and secure moving parts ✓

Q19 Part B (Fitter)

A manufacturer needs to choose a metal for producing thin, complex-shaped sheets that must withstand bending and hammering without cracking. Which property should the manufacturer prioritize when selecting the material?

- A. Ductility
- B. Hardness
- C. Brittleness
- D. Malleability ✓

Q20 Part B (Fitter)

Which cutting tool material would lose effectiveness the fastest when used for continuous high-speed machining of steel?

- A. Carbon tool steel ✓
- B. Ceramic tool material
- C. High-speed steel (HSS)
- D. Cast alloy steel

Q21 Part B (Fitter)

Which feature in tolerance diagrams visually indicates transition fit?

- A. Overlapping tolerance zones of hole and shaft relative to zero line ✓
- B. Completely separated tolerance zones of hole and shaft
- C. Hole tolerance zone entirely above shaft tolerance zone
- D. Shaft tolerance zone entirely above hole tolerance zone

Q22 Part B (Fitter)

Ductility of a material refers to the ability of the material to:

- A. Undergo plastic deformation before fracture ✓
- B. Conduct heat efficiently
- C. Resist surface indentation
- D. Return to its original shape after unloading

Q23 Part B (Fitter)

A material that can withstand pressure, bending, and pulling forces without breaking is said to possess:

- A. Hardness
- B. Elasticity
- C. Tenacity ✓
- D. Brittleness

Q24 Part B (Fitter)

In a transition fit sketch, what does the overlapping region of tolerance zones represent?

- A. The maximum possible clearance between hole and shaft
- B. The minimum possible clearance between hole and shaft
- C. The range in which either clearance or interference may occur ✓
- D. The exact basic size of the mating components

Q25 Part B (Fitter)

Which type of bearing material is commonly referred to as Babbitt metal?

- A. Lead-coated steel alloy
- B. Antimony-hardened cast iron
- C. Tin-based white metal ✓
- D. Copper-based bearing alloy

Q26 Part B (Fitter)

During the assembly of a pneumatic circuit for a machine, the FRL unit is mounted upstream of all control valves. What is the purpose of placing the FRL unit at this location in a workshop's air supply line?

- A. To isolate specific actuators from the main line during maintenance operations
- B. To ensure that all downstream components receive cleaned, regulated, and lubricated air ✓
- C. To supply compressed air at a constant temperature to all actuators in the system
- D. To provide lubrication only to the last pneumatic tool in the workshop line



Q27 Part B (Fitter)

How is the grip size of a footprint wrench adjusted to suit different pipe diameters?

- A. By tightening a thumb-screw located on the side of the handle
- B. By replacing the jaw insert with a different standardised size piece
- C. By sliding an adjustable collar along the full length of the strap
- D. By placing the pivot pin into different holes of the solid handle ✓

Q28 Part B (Fitter)

Which aspect must be checked first when interpreting the representation of a countersunk rivet in a workshop assembly drawing?

- A. The type of head illustrated in the sectional view ✓
- B. The method of insertion shown in the drawing
- C. The rivet material specified in the notes
- D. The rivet shank length dimensioned

Q29 Part B (Fitter)

What distinguishes a shell reamer from a solid reamer?

- A. Shell reamer is always adjustable
- B. Shell reamer has spiral flutes only
- C. Shell reamer lacks an integral shank ✓
- D. Shell reamer is used for soft materials only

Q30 Part B (Fitter)

Which feature of a pipe vice improves its ability to hold pipes during threading operations?

- A. Replaceable wooden jaws
- B. Flat smooth jaw plates
- C. Rubber padding
- D. Serrated gripping surfaces ✓

Q31 Part B (Fitter)

Which method is often used to bend a flat bar accurately in a workshop without damaging its surface finish?

- A. Heating the bar and then quenching in water
- B. Clamping in a vice and twisting the bar
- C. Using a bending block and applying uniform pressure ✓
- D. Striking the bar with a hammer repeatedly

Q32 Part B (Fitter)

Aluminium oxide abrasive is produced from:

- A. Zinc ore
- B. Copper ore
- C. Bauxite ore ✓
- D. Iron ore

Q33 Part B (Fitter)

During the installation of a flat belt pulley system, which feature on the pulley face helps maintain the belt in the center during operation?

- A. An entirely rough surface with no shape change
- B. A slightly concave shape across the pulley face
- C. A flat face with no curvature at all
- D. A slightly convex shape across the pulley face ✓

Q34 Part B (Fitter)

When creating an orthographic projection of a rectangular block on a drawing sheet, which reference plane is used to project the top view accurately?

- A. Auxiliary plane is used for projecting the top view
- B. Horizontal plane is used for projecting the top view ✓
- C. Vertical plane is used for projecting the top view
- D. Profile plane is used for projecting the top view

Q35 Part B (Fitter)

In improved white metal bearings, the thin white metal layer is usually supported by:

- A. A cast iron backing
- B. A wooden backing
- C. A steel backing ✓
- D. A brass backing

Q36 Part B (Fitter)

In an electro-pneumatic control system for a workshop machine, which component directly converts electrical energy into linear mechanical motion to operate a pneumatic valve?

- A. The solenoid coil inside the valve assembly ✓
- B. The pressure switch attached to the manifold
- C. The control relay in the circuit panel
- D. The pilot air signal from the compressor



Q37 Part B (Fitter)

Tightening of the cap screw produces:

- A. Rotational motion
- B. Cutting action
- C. Clamping action ✓
- D. Sliding motion

Q38 Part B (Fitter)

Which feature should be included in a free hand sketch of a flat file used in the workshop?

- A. The curved blade should be shown clearly in the sketch
- B. The tapered edge should be shown clearly in the sketch ✓
- C. The round handle should be shown clearly in the sketch
- D. The serrated body should be shown clearly in the sketch

Q39 Part B (Fitter)

In a thrust bearing, the load acts along which direction in relation to the shaft axis?

- A. Perpendicular to the shaft axis
- B. Parallel to the shaft axis ✓
- C. Along a circular path
- D. In a random direction

Q40 Part B (Fitter)

A machine part is manufactured with a surface area of 169 square millimeters. If the unit is changed to square centimeters, what is the square root of the surface area in the new unit?

- A. 1.3 ✓
- B. 169
- C. 0.13
- D. 13

Q41 Part B (Fitter)

A screw thread is specified as M12 × 1.75. What does 'M12' represent in this specification?

- A. Minor diameter of twelve millimeters
- B. Thread angle of twelve degrees
- C. Major diameter of twelve millimeters ✓
- D. Pitch of twelve millimeters

Q42 Part B (Fitter)

Which solder is most suitable for joining electrical wires in a control panel without damaging sensitive electronic components?

- A. Solid wire plumbing solder
- B. Resin core solder ✓
- C. Acid core solder
- D. Silver solder

Q43 Part B (Fitter)

Which statement best explains how elasticity affects the behavior of a metal rod when a force is applied to it?

- A. Elasticity allows the rod to return to its original shape after the force is removed. ✓
- B. Elasticity prevents the rod from deforming under any force.
- C. Elasticity causes permanent deformation in the rod after the force is applied.
- D. Elasticity increases the hardness of the rod when a force is applied.

Q44 Part B (Fitter)

What is the primary purpose of a straight peen hammer in workshop operations?

- A. To measure the thickness of metal components precisely
- B. To hold workpieces firmly during machining operations
- C. To shape metal along a direction parallel to the hammer handle axis ✓
- D. To cut metal sheets into required shapes

Q45 Part B (Fitter)

Which of the following is an example of a personal safety sign commonly used in a workshop environment?

- A. Fire extinguisher location sign
- B. Wear safety goggles symbol ✓
- C. First aid box sign
- D. Emergency exit sign

Q46 Part B (Fitter)

Which main structural component supports the spindle in a pillar-type drilling machine?

- A. Foot pedal
- B. Column ✓
- C. Belt cover
- D. Table



Q47 Part B (Fitter)

A lifting system has equal number of pulleys in upper and lower blocks, with the upper block fixed and the lower block movable. A single rope passes around all the pulleys and a load is attached to the lower block. If the number of pulleys is 4, what will be the velocity ratio (VR)?

- A. 16
- B. 8
- C. 2
- D. 4

**Q48 Part B (Fitter)**

Why is crowning provided on the face of a flat belt pulley in workshop machinery?

- A. It reduces the overall diameter of the pulley
- B. It helps keep the flat belt centered during rotation
- C. It decreases the thickness of the belt used
- D. It significantly increases friction between belt and pulley

**Q49 Part B (Fitter)**

What is the purpose of the threading dial indicator during thread cutting?

- A. To indicate spindle speed during thread cutting
- B. To confirm depth of cut during threading operation
- C. To indicate carriage position relative to leadscrew rotation
- D. To synchronize spindle speed with feed rate during threading

**Q50 Part B (Fitter)**

Which feature most distinguishes a GI pipe from other common types of pipes used in pipe fitting?

- A. It is coated with a layer of zinc to prevent rusting
- B. It is lined with rubber for flexibility
- C. It is made from copper for high conductivity
- D. It is made from plastic and is lightweight

**Q51 Part B (Fitter)**

Which is the primary constructional feature responsible for the greater impact energy of a sledge hammer compared with ordinary hammers?

- A. Greater head mass combined with longer handle producing higher striking momentum
- B. Extended handle leverage increasing swing radius during forceful striking operations
- C. Solid forged head construction improving energy transfer during repeated heavy blows
- D. Balanced head geometry improving directional stability during heavy impact striking

**Q52 Part B (Fitter)**

In a standard hand tap set used for internal threading, how can a plug (bottoming) tap be identified quickly?

- A. By one ring marked on the shank
- B. By two rings marked on the shank
- C. By four rings marked on the shank
- D. By three rings marked on the shank

**Q53 Part B (Fitter)**

Which property is most closely related to fusibility?

- A. Thermal expansion
- B. Electrical resistance
- C. Density
- D. Melting point

**Q54 Part B (Fitter)**

How can the operator minimize the risk of tool collision with clamps during faceplate operations?

- A. By increasing spindle speed
- B. By tightening clamps more firmly
- C. By using longer cutting tools
- D. By planning the tool path before machining



Q55 Part B (Fitter)

In a fabrication unit, noisy operation is observed in a gear train using parallel shaft connections. If the goal is to minimize noise and axial force in future installations, which gear should be recommended?

- A. Spur gear for basic power transmission with higher noise levels
- B. Helical gear for reduced noise but presence of axial force
- C. Herringbone gear for smooth and quiet operation with no axial force ✓
- D. Bevel gear for changing shaft direction in noisy applications

Q56 Part B (Fitter)

Which of the following elements is NOT normally present in high-speed steel?

- A. Vanadium
- B. Tungsten
- C. Nickel ✓
- D. Chromium

Q57 Part B (Fitter)

On which part of the lathe are the chucks and faceplates mounted?

- A. Carriage
- B. Tailstock
- C. Spindle ✓
- D. Bed

Q58 Part B (Fitter)

A steel spring in a machine is compressed when a load is applied. When the load is removed, the spring returns to its original shape and length without any permanent deformation. Which mechanical property of the material is responsible for this behavior?

- A. Hardness
- B. Brittleness
- C. Plasticity
- D. Elasticity ✓

Q59 Part B (Fitter)

Which is the first step in the Five S concept used for workplace organization?

- A. Set in order
- B. Standardize
- C. Shine
- D. Sort ✓

Q60 Part B (Fitter)

What is the main use of a warding file?

- A. Diameter checking
- B. Narrow filing ✓
- C. Surface polishing
- D. Thread cutting

Q61 Part B (Fitter)

Which type of gear has two sets of teeth inclined in opposite directions to form a 'V' shape on the same gear wheel?

- A. A spur gear with straight teeth cut parallel to the center axis.
- B. A bevel gear with conical teeth cut to transmit angular motion.
- C. A herringbone gear with V-shaped teeth formed by opposing angles. ✓
- D. A worm gear with screw-like teeth designed to mesh with a wheel.

Q62 Part B (Fitter)

Which situation requires the use of a castle nut as a locking device on a machine part?

- A. When a split pin is needed to prevent nut loosening ✓
- B. When a spring washer is enough to hold the nut
- C. When the nut is used only for adjustment
- D. When frequent removal of the nut is required

Q63 Part B (Fitter)

Which of the following best describes a common use of a protractor in the ITI Fitter trade?

- A. Marking the center of a hole on a plate
- B. Drawing parallel lines on metal surfaces
- C. Measuring and marking angles on workpieces ✓
- D. Checking the thickness of material



Q64 Part B (Fitter)

In a pneumatic system, why is an air receiver tank placed after the compressor and before the distribution lines?

- A. To filter out dust particles from compressed air
- B. To lubricate pneumatic tools in operation cycles
- C. To reduce energy consumption of air compressor
- D. To store compressed air and maintain pressure stability ✓

Q65 Part B (Fitter)

Which of the following welding methods joins metals by melting the base materials at the joint?

- A. Resistance welding
- B. Fusion welding ✓
- C. Pressure welding
- D. Solid-state welding

Q66 Part B (Fitter)

In comparison with ball bearings of the same size, roller bearings can carry:

- A. Lower radial load
- B. Equal radial load
- C. No radial load
- D. Higher radial load ✓

Q67 Part B (Fitter)

A technician is troubleshooting a circuit that is not working properly. The measured voltage across a resistor is much lower than expected, even though the power supply is functioning and all connections appear intact. Which of the following is the most likely cause?

- A. The resistor is shorted out by a parallel path
- B. The power supply is providing insufficient current to the circuit load
- C. There is a high resistance connection or partial break in wiring path ✓
- D. The resistor value is too small for proper circuit operation conditions

Q68 Part B (Fitter)

Which part of an outside micrometer remains fixed and supports the workpiece during measurement?

- A. Spindle
- B. Ratchet stop
- C. Thimble
- D. Anvil ✓

Q69 Part B (Fitter)

A fitter is tasked with marking accurate parallel lines on a metal plate before cutting. He must select a divider with tips made of a suitable material for this job. Which divider tip material would be most appropriate to use to avoid rapid wear and ensure precise marking on the metal surface?

- A. Brass tips
- B. High carbon steel tips
- C. Hardened steel tips ✓
- D. Aluminum tips

Q70 Part B (Fitter)

Which of the following describes the main function of a double-acting cylinder in pneumatic systems used in workshop equipment?

- A. It uses spring force to return the piston after extension
- B. It only delivers force in one direction with air pressure
- C. It creates a vacuum inside the cylinder for retraction
- D. It provides controlled force in both directions for movement ✓

Q71 Part B (Fitter)

What do you call the sloping surface connecting the crest and root of a thread?

- A. Flank ✓
- B. Major diameter
- C. Crest
- D. Root

Q72 Part B (Fitter)

To check the accuracy of a spirit level, after taking the first reading, the level is rotated by:

- A. 180 degrees end-to-end ✓
- B. 45 degrees slight tilt
- C. 90 degrees sideways turn
- D. Full circular rotation

Q73 Part B (Fitter)

Which combination of root gap and bevel angle is most suitable for preparing a butt joint to ensure proper weld penetration in metal joining?

- A. A root gap of 0.5 mm and a bevel angle of 45 degrees
- B. A root gap of 1 mm and a bevel angle of 30 degrees
- C. A root gap of 3 mm and a bevel angle of 20 degrees
- D. A root gap of 2 mm and a bevel angle of 60 degrees ✓



Q74 Part B (Fitter)

Why are calipers generally used along with a steel rule in workshop measurement?

- A. Because caliper replaces steel rule in machining
- B. Because calipers cannot hold the dimension
- C. Because calipers do not have a graduated scale ☒
- D. Because calipers cannot touch the workpiece directly

Q75 Part B (Fitter)

While assembling two mild steel plates using dowel pins, which method ensures the most accurate alignment without relying on visual inspection?

- A. Using a jig with reference holes for positioning ☒
- B. Holding plates together with spring clamps only
- C. Measuring edge distances with a steel scale
- D. Applying chalk to mark direct contact points



Part B (Fitter)

75 Questions • Answer Key

Q1 Part B (Fitter)

Which component in a pneumatic system stores compressed air before it is distributed to the workshop machines?

- A. An air compressor generates compressed air for distribution
- B. A filter removes moisture and dust from the air
- C. A regulator controls the pressure supplied to equipment
- D. The air receiver tank stores compressed air for later use ✓

Q2 Part B (Fitter)

Vibration during hacksawing can be minimized by:

- A. Increasing cutting speed within recommended limits
- B. Maintaining proper blade tension ✓
- C. Steady strokes and proper grip
- D. Using correct blade pitch (TPI)

Q3 Part B (Fitter)

Cast iron is mainly used in bearings for:

- A. Heavy loads
- B. Light loads ✓
- C. Shock loads
- D. Impact loads

Q4 Part B (Fitter)

In a quick cut die stock, the two die halves are held securely by:

- A. A threaded guide plate ✓
- B. A locking pin and washer
- C. A spring-loaded clamp
- D. A tapered retaining ring

Q5 Part B (Fitter)

A workshop assembly requires joining two metal plates to withstand vibrations without loosening over time. Which mechanical jointing method is most suitable for this requirement?

- A. Using permanent spot welding process
- B. Using solid rivets for fixed assembly
- C. Using standard threaded fasteners only
- D. Using lock nuts and spring washers ✓

Q6 Part B (Fitter)

Which material will deform plastically first when temperature rises during a lathe operation?

- A. High-speed steel (HSS)
- B. Carbon tool steel ✓
- C. Cast alloy steel
- D. Ceramic tool material

Q7 Part B (Fitter)

Which problem is most likely to occur if a lathe tool's cutting angles are not ground properly?

- A. Issues with tool magnetism
- B. Problems with storing the tool
- C. Excessive tool length
- D. Poor surface finish ✓

Q8 Part B (Fitter)

In a cast iron pulley, the rim is connected to the central boss through structural members whose cross-section is generally elliptical. What are these members called?

- A. Arms/Spokes ✓
- B. Keys
- C. Bushes
- D. Flanges



Q9 Part B (Fitter)

In which situation would wrought iron be a better choice than cast iron?

- A. Where vibration damping is a priority
- B. Where ductility and shock resistance are required ✓
- C. Where maximum compressive strength is needed
- D. Where high wear resistance is essential

Q10 Part B (Fitter)

Using anti-stick compounds on gaskets may cause:

- A. Increased strength
- B. Improved sealing
- C. Longer service life
- D. Premature failure ✓

Q11 Part B (Fitter)

What happens when the feed rate is too high during turning?

- A. Surface finish improves significantly
- B. Tool wear decreases completely
- C. Spindle speed reduces automatically
- D. Cutting force and roughness increase ✓

Q12 Part B (Fitter)

What is a butt joint in welding as per BIS SP 46-1988?

- A. A joint where two metal pieces are joined at an edge not in the same plane
- B. A joint where two metal pieces are overlapped and welded
- C. A joint where two metal pieces are placed end to end and welded together ✓
- D. A joint where two metal pieces are placed at right angles and welded

Q13 Part B (Fitter)

The grade of a grinding wheel indicates:

- A. Grain size
- B. Bond strength ✓
- C. Cutting depth
- D. Wheel speed

Q14 Part B (Fitter)

Bolted joints are preferred because they are:

- A. Permanent only
- B. Easy to assemble ✓
- C. Difficult to remove
- D. Heavy in weight

Q15 Part B (Fitter)

During maintenance, an employee notices that a hydraulic press is unable to lift the usual load even though the input force remains the same. Based on Pascal's Law, which scenario could be responsible for this failure?

- A. Increasing the input force beyond the usual value causes lifting failure
- B. Using more hydraulic fluid while keeping pressure the same improves lifting
- C. Replacing the fluid with a heavier type increases lifting capacity
- D. A leak in the hydraulic line reduces pressure transmission to the lifting piston ✓

Q16 Part B (Fitter)

What does the term 'centre of gravity' refer to in workshop calculations and science?

- A. It is the lowest point of the object
- B. It is the point where the mass is maximum
- C. It is the point where the entire weight of an object acts ✓
- D. It is the point where the object is fixed

Q17 Part B (Fitter)

In a workshop, you need to fill a cylindrical tank with a liquid. The tank has a diameter of 1 meter and a height of 2 meters. Which method will give you the most accurate measurement of the tank's volume before filling it?

- A. Calculate using the formula for the volume of a cylinder based on precise measurements ✓
- B. Measure the circumference and assume the tank is a sphere to calculate volume
- C. Use the formula for the volume of a cube with the tank's height as a side
- D. Estimate by visual inspection and compare with other tanks



Q18 Part B (Fitter)

What is the main function of a pipe bending machine in pipe fitting work?

- A. To cut a pipe accurately to the required length
- B. To create threads on the ends of a pipe for connections
- C. To join two pipes together permanently using welding methods
- D. To change the direction of a pipe without cutting it ✓

Q19 Part B (Fitter)

What is the primary advantage of using a hydraulic bending machine for G.I. and M.S. pipes?

- A. It cleans pipe surfaces without using chemical solutions.
- B. It bends pipes without requiring sand filling inside the pipe. ✓
- C. It joins pipes permanently without requiring threaded fittings.
- D. It cuts pipes accurately without producing metal shavings.

Q20 Part B (Fitter)

How does a hole gauge achieve higher accuracy in measurement?

- A. Using fluid-based expansion mechanism
- B. Using magnetic alignment measurement method
- C. Using two-point contact with split ball ends ✓
- D. Using multi-point laser scanning system

Q21 Part B (Fitter)

A heavy-duty belt drive requires reliable torque transmission without relative motion between the pulley and shaft. Which additional element is recommended for a split pulley?

- A. Sunk key ✓
- B. Set screw
- C. Crowning
- D. Bush bearing

Q22 Part B (Fitter)

Which process is essential to ensure moisture is removed from compressed air before it enters pneumatic tools in a workshop environment?

- A. Allowing air to rest in a storage tank for moisture to settle
- B. Passing air through a filter to trap solid contaminants
- C. Using an air dryer to eliminate water vapor from compressed air ✓
- D. Cooling air in a closed chamber to reduce temperature

Q23 Part B (Fitter)

Which change will decrease the electrical resistance of a metal wire in a workshop circuit?

- A. Using a less conductive material for the wire
- B. Lowering the voltage applied to the wire
- C. Increasing the thickness of the wire ✓
- D. Raising the temperature of the wire

Q24 Part B (Fitter)

Due to low thermal conductivity, laminated phenolic bearings require:

- A. Surface hardening
- B. Metal lining
- C. Cooling system ✓
- D. Hard coating

Q25 Part B (Fitter)

In a gear set, which circle is used as the reference to determine the point where two gears effectively make contact and transfer motion?

- A. Addendum circle is the contact reference for motion transfer
- B. Root circle is the contact reference for motion transfer
- C. Dedendum circle is the contact reference for motion transfer
- D. Pitch circle is the contact reference for motion transfer ✓



Q26 Part B (Fitter)

In an assembly process, which sealing method is most appropriate to prevent oil leakage between two precisely machined flanges when disassembly may be required for maintenance?

- ☒ A. Using a preformed gasket between the flanges
- ☐ B. Applying a thread sealant to the surfaces
- ☐ C. Sealing with adhesive compounds
- ☐ D. Filling the joint with welding material

Q27 Part B (Fitter)

What is the standard material used for hacksaw blades in adjustable frames?

- ☒ A. High carbon steel
- ☐ B. Tungsten carbide
- ☐ C. Mild steel
- ☐ D. Alloy tool steel

Q28 Part B (Fitter)

Which item is essential to wear for personal safety in a mechanical workshop?

- ☒ A. Safety goggles
- ☐ B. Earplugs
- ☐ C. Wrist watch
- ☐ D. Regular shoes

Q29 Part B (Fitter)

A drawing shows two steel plates joined with a continuous fillet weld along one edge, and the drawing specifies a welding symbol with the fillet shape filled in and a reference line beneath. Based on this drawing, which interpretation is correct about the weld placement and its representation?

- ☒ A. The weld is to be placed on the arrow side with a continuous fillet along the joint
- ☐ B. The weld is to be placed on the other side with an intermittent fillet
- ☐ C. The weld should be a groove type applied on both sides of the plates
- ☐ D. The weld should be placed on the arrow side but as an intermittent fillet

Q30 Part B (Fitter)

Which arrow head type is not recommended for dimension lines when preparing engineering drawings for fabrication tasks?

- ☒ A. Dotted arrow head
- ☐ B. Closed and filled arrow head
- ☐ C. Open arrow head
- ☐ D. Slashed arrow head

Q31 Part B (Fitter)

In a gang drilling machine, how are the spindles typically arranged?

- ☐ A. Vertically stacked above each other
- ☐ B. Randomly positioned on the base
- ☐ C. In a circular pattern around the table
- ☒ D. In a straight line on a common table

Q32 Part B (Fitter)

If the tolerance zone is completely above the basic size line, how is it indicated as per BIS?

- ☐ A. By using only negative deviation values
- ☐ B. By using zero deviation values
- ☐ C. By combining positive and negative deviations
- ☒ D. By using only positive deviation values

Q33 Part B (Fitter)

Which tool is best suited for shifting heavy machinery during erection by applying leverage, given constraints on space and need for controlled movement?

- ☒ A. Crowbar is used to move heavy objects with leverage in restricted areas
- ☐ B. Spanner is used to move heavy objects with leverage in restricted areas
- ☐ C. Hammer is used to move heavy objects with leverage in restricted areas
- ☐ D. Pipe wrench is used to move heavy objects with leverage in restricted areas

Q34 Part B (Fitter)

A material that fractures with very little or no plastic deformation is said to exhibit:

- ☐ A. Toughness
- ☒ B. Brittleness
- ☐ C. Ductility
- ☐ D. Elasticity



Q35 Part B (Fitter)

In wet lapping, the abrasive compound is mixed with a liquid medium before application. Which substance is specifically mentioned for mixing with the abrasive powder?

- A. Water as cooling medium
- B. Kerosene as liquid medium** ✓
- C. Glycerine as bonding medium
- D. Alcohol as cleaning medium

Q36 Part B (Fitter)

Which of the following best describes the method of operating HP (High Pressure) welding equipment in metal joining processes?

- A. The regulator can be ignored during normal operation
- B. Only turning on the gas supply is necessary for operation
- C. The equipment should be operated at maximum pressure for better results
- D. The torch and regulator must be adjusted to control the gas flow accurately** ✓

Q37 Part B (Fitter)

Why is the beam of a vernier caliper made long and rigid during construction?

- A. To provide a straight guide for smooth sliding jaw movement
- B. To support long measurement range without bending** ✓
- C. To reduce the least count of the instrument
- D. To provide a stable reference surface for accurate measurement

Q38 Part B (Fitter)

Which measurement tool is most appropriate for checking the major diameter of a screw thread?

- A. Feeler gauge
- B. External micrometer** ✓
- C. Thread pitch gauge
- D. Depth gauge

Q39 Part B (Fitter)

Which statement best explains the primary use of red lead in marking media for ITI Fitter Trade work?

- A. Red lead is applied to surfaces to make scribed lines more visible during layout work.** ✓
- B. Red lead is used for cleaning measuring instruments before use.
- C. Red lead is used for protecting measuring tools from rust during storage.
- D. Red lead is applied as a lubricant for smooth movement of measuring instruments.

Q40 Part B (Fitter)

Which of the following is the most important reason for providing continuous ventilation while working in a confined space?

- A. To reduce noise levels for workers
- B. To prevent the build-up of hazardous gases** ✓
- C. To control dust generated during work
- D. To keep the confined space cool

Q41 Part B (Fitter)

Which solder composition is most suitable for joining delicate electronic components requiring a low melting point and reliable electrical connections?

- A. Copper-based solder with 95% copper, 5% tin
- B. Silver solder with 2% silver, 97% tin, 1% copper
- C. Lead solder with 70% lead and 30% tin
- D. Tin-lead solder with 60% tin and 40% lead** ✓

Q42 Part B (Fitter)

Which tap in a standard set is best suited for starting a thread in a new hole?

- A. Taper tap** ✓
- B. Flat bottomed tap
- C. Thread chaser
- D. Bottoming tap



Q43 Part B (Fitter)

Which of the following is the main reason a pipe cut using a wheel pipe cutter must be deburred or reamed after cutting?

- A. The cutter wheel increases the internal diameter of the pipe after cutting
- B. The cutting process leaves a ridge inside the pipe that may obstruct flow ✓
- C. The pipe cutter produces rough external threads on the pipe surface
- D. The cutter removes excess metal chips inside the pipe during cutting

Q44 Part B (Fitter)

Which factor affects the velocity ratio in a simple gear train during workshop assembly tasks?

- A. The material used for making the gear wheels
- B. The shaft length between the two connected gears
- C. The number of teeth on the driver and driven gears ✓
- D. The module size selected for the gear teeth

Q45 Part B (Fitter)

Which of the following best describes the proper use and maintenance of a chipping hammer during welding operations?

- A. Use the chipping hammer to remove slag after welding and keep the hammer clean to ensure effective slag removal. ✓
- B. Use the chipping hammer to shape the welded joint before welding and occasionally sharpen its pointed tip properly with a flat file.
- C. Use the chipping hammer during welding to cool the joint and wipe its handle carefully with oil after every use.
- D. Use the chipping hammer before welding to clean oil from the surface and safely store it with welding rods.

Q46 Part B (Fitter)

Which application is suited for a 5 by 2 valve in pneumatic systems?

- A. It is suited for pressure release and exhaust control
- B. It is used for double acting cylinder direction control ✓
- C. It is used for single acting cylinder simple movement
- D. It is best for adding lubrication to compressed air

Q47 Part B (Fitter)

Which characteristic best describes a Barrette file used in fitting work?

- A. It has round surfaces with teeth on all sides for enlarging holes
- B. It has square faces with rough teeth for cutting keyways
- C. It has curved edges with double cut teeth for rapid metal removal
- D. It has a flat triangular face with teeth only on the wide surface ✓

Q48 Part B (Fitter)

A machine drawing specifies an M12 screw for assembly. What does 'M12' indicate about the screw?

- A. The major diameter of the screw is 12 mm ✓
- B. The screw head diameter is 12 mm
- C. The pitch length of the screw is 12 mm
- D. The screw length is 12 mm

Q49 Part B (Fitter)

What is the orientation of the peen relative to the handle in a straight peen hammer?

- A. At sixty degrees to the hammer handle
- B. Parallel to the axis of the hammer handle ✓
- C. Perpendicular to the axis of the hammer handle
- D. At forty five degrees to the hammer handle

Q50 Part B (Fitter)

During a welding operation in a workshop, a 10-meter extension cable rated for 5 amperes is used to power a portable grinder that draws 8 amperes. To prevent electrical accidents, which corrective action should be taken before starting work?

- A. Leave the existing extension cable unchanged and work quickly
- B. Use a longer cable rated for 3 amperes to increase distance from the source
- C. Replace the extension cable with one rated for at least 8 amperes ✓
- D. Reduce the grinder running time to minimize overload risk



Q51 Part B (Fitter)

Why does the vernier scale contain slightly different spacing than the main scale?

- A. To allow comparison between main scale and vernier scale divisions
- B. To create a measurable difference between scales ✓
- C. To obtain fractional readings smaller than one main scale division
- D. To help align the vernier zero with the main scale zero

Q52 Part B (Fitter)

Which of the following is a key purpose of implementing preventive maintenance in workshop equipment?

- A. To reduce unexpected breakdowns and improve equipment reliability. ✓
- B. To schedule downtime for the longest possible periods of production.
- C. To focus only on repair activities after equipment failure occurs.
- D. To use maintenance only for minor workshop tools and accessories.

Q53 Part B (Fitter)

A workshop supervisor needs a tool for scribing and layout work in a confined space. Which feature of the Hermaphrodite Caliper makes it different from other calipers?

- A. Both legs are straight and parallel to each other
- B. One leg is straight while the other leg carries a flat measuring edge
- C. One leg ends in a pointed tip while the other has a caliper jaw ✓
- D. Both legs have sharp pointed tips for accurate marking work

Q54 Part B (Fitter)

Which actuator type converts compressed air energy into linear motion for clamping during a machining operation?

- A. Double-acting cylinder actuator is used for tasks requiring motion in both directions
- B. Rotary actuator is used to convert air into rotary motion for cutting
- C. Single-acting cylinder actuator is used to generate linear motion for clamping tasks ✓
- D. Diaphragm actuator is used for precise control in regulating pressure

Q55 Part B (Fitter)

A workshop needs to transfer power across two parallel shafts using an open belt drive. If the center distance between the pulleys is increased while keeping pulley sizes unchanged, what is the most likely result regarding the required belt length?

- A. The required belt length decreases to maintain proper tension
- B. The required belt length increases to maintain proper tension ✓
- C. The required belt length remains unchanged for correct operation
- D. The required belt thickness increases to maintain proper grip

Q56 Part B (Fitter)

How is a small-diameter straight shank drill usually held in the tailstock?

- A. With a dog carrier
- B. With a drill chuck ✓
- C. With a Morse taper
- D. With a sleeve adapter

Q57 Part B (Fitter)

A workshop supervisor needs to mix two types of oils in a ratio so that the resulting mixture maintains the same performance as the original oils used separately. If the first oil costs 60 rupees per liter and the second oil costs 80 rupees per liter, in what ratio should these be mixed to get a mixture worth 70 rupees per liter?

- A. 3:2
- B. 2:1
- C. 1:2
- D. 1:1 ✓

Q58 Part B (Fitter)

Which cutting tool is primarily used to produce a smooth, flat face perpendicular to the workpiece axis?

- A. Turning tool
- B. Boring tool
- C. Facing tool ✓
- D. Knurling tool



Q59 Part B (Fitter)

Which part of the Vernier height gauge is used to mark lines on the workpiece surface?

A. Scriber



B. Clamp screw

C. Fine adjustment screw

D. Vernier scale

Q60 Part B (Fitter)

In a basic hydraulic circuit, what is the function of the reservoir in relation to the other system components?

A. Pressure relief valve is used to control the maximum system pressure

B. Hydraulic filter removes contaminants from the hydraulic fluid during operation

C. Hydraulic pump is used to generate pressure for fluid movement

D. Hydraulic reservoir stores and supplies fluid to the system continuously



Q61 Part B (Fitter)

What does 'interchangeability' refer to in mechanical engineering?

A. Ability to change machine dimensions freely

B. Ability to assemble parts in any sequence

C. Ability to use any material for parts

D. Ability to replace parts without modification



Q62 Part B (Fitter)

When integrating a solenoid valve into a sequence control circuit for a machining process, what is a potential effect if the return spring inside the valve is damaged or missing?

A. The valve may fail to return to its original position after de-energization



B. The valve cycles faster, improving process speed in the workshop

C. Continuous air supply to the actuator is ensured for all cycles

D. The electrical consumption of the valve decreases significantly

Q63 Part B (Fitter)

When preparing an orthographic projection of a rectangular block resting with its largest face on the horizontal plane, which view will accurately represent the true shape and size of that face?

A. The auxiliary view drawn from an inclined axis

B. The side view drawn at 45 degrees to the projection plane

C. The top view drawn parallel to the horizontal reference line



D. The front view drawn perpendicular to the reference line

Q64 Part B (Fitter)

What determines the final diameter of a hole after reaming?

A. The hardness of the workpiece

B. The size of the reamer used



C. The type of the lubricant applied

D. The rotational speed of the lathe

Q65 Part B (Fitter)

Which property makes tin suitable for coating steel sheets used in food containers?

A. High magnetic permeability

B. High hardness

C. High tensile strength

D. High corrosion resistance



Q66 Part B (Fitter)

Which type of bearing is specifically designed to support axial loads in machinery?

A. Roller bearing

B. Thrust bearing



C. Plain bearing

D. Ball bearing



Q67 Part B (Fitter)

During the fabrication of a machine base, an engineering drawing is provided with detailed dimensioning. What is the main purpose of these dimensioned drawings in the workshop setting?

- A. To mark guidelines for the workshop before cutting begins
- B. To indicate the type of material to be used for the part
- C. To provide exact sizes and locations for manufacturing parts accurately ✓
- D. To show the required surface finish for each feature

Q68 Part B (Fitter)

A belt drive operating at a speed of 8 m/s is used to transmit a small amount of power in an agricultural machine. How is this drive classified?

- A. Light drive ✓
- B. Heavy drive
- C. Medium drive
- D. Compound drive

Q69 Part B (Fitter)

Which of the following situations best demonstrates when a needle bearing is preferred over other types of bearings in an industrial setting?

- A. When high-speed axial loads are present and minimal heat generation is needed
- B. When large axial loads and self-alignment are required
- C. When vibration isolation is critical and misalignment may occur
- D. When limited radial space is available and high load capacity is needed ✓

Q70 Part B (Fitter)

Which parameter must be lowered to decrease tool wear while machining a tough alloy material?

- A. Depth of cut
- B. Rake angle
- C. Feed rate
- D. Cutting speed ✓

Q71 Part B (Fitter)

When selecting an electrode for ARC welding mild steel structures exposed to variable weather conditions, which factor is most critical to ensure weld durability and integrity?

- A. Selecting an electrode with high current carrying capacity to increase speed
- B. Picking an electrode with fast deposition rate for quicker completion
- C. Using an electrode with higher tensile strength to match the base metal
- D. Choosing an electrode with low hydrogen content to minimize cracking risk ✓

Q72 Part B (Fitter)

What is the main reason silver is used in high-quality electrical contacts?

- A. Mechanical strength
- B. High thermal conductivity
- C. Superior corrosion resistance
- D. Excellent electrical conductivity ✓

Q73 Part B (Fitter)

Which situation requires the use of a reamer?

- A. When a highly accurate hole diameter is needed ✓
- B. When making holes in wood
- C. When rough shaping a workpiece
- D. When removing large amounts of material quickly

Q74 Part B (Fitter)

Which of the following statements correctly describes the use of Allen keys in fitting accessories?

- A. Allen keys are used to tighten nuts with square holes.
- B. Allen keys are used to turn screws with round heads only.
- C. Allen keys are used for tightening or loosening hex socket screws. ✓
- D. Allen keys are used to adjust screws with slotted heads.

Q75 Part B (Fitter)

Pig iron is produced in a blast furnace using iron ore, coke, and limestone. In this process, coke acts as:

- A. Fuel ✓
- B. Flux
- C. Impurity
- D. Coolant

