



RRB ALP 2024 CBT 2

Assistant Loco Pilot · CEN 01/2024 · CBT 2 · Mechanic Motor Vehicle Trade · Part B (Mechanic Motor Vehicle) · Question Paper

English

All 4 Shifts (Sets) · Part B (Mechanic Motor Vehicle) Section · Official Answer Key

About this Compilation

This booklet contains all 4 shift papers of the RRB ALP 2024 CBT 2 (Mechanic Motor Vehicle) examination in English (Part B (Mechanic Motor Vehicle) section only), with the correct option marked as per the official answer key.

✓ Correct option (highlighted green)

1 of these 300 questions are shown in Hindi. Our saved English papers do not carry them in English, so the official Hindi version of the same question is printed instead and marked with a **HINDI** chip. Nothing here is machine translated.

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

02 May 2025
9:30 AM - 12:00 PM

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Set 2

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Set 4

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Part B (Mechanic Motor Vehicle)

75 Questions • Answer Key

Q1 Part B (Mechanic Motor Vehicle)

Which of the following is NOT the correct characteristic of an I-head combustion chamber used in a petrol engine?

- A. I-head has higher surface to volume ratio and therefore there is a high amount of heat loss. ✓
- B. I-head is superior to an L-head engine at high compression ratios.
- C. I-head has a higher volumetric efficiency from larger valves or valve lifts.
- D. I-head has less flame travel length and hence there is a greater freedom from knock.

Q2 Part B (Mechanic Motor Vehicle)

What is the name of the tool used for force amplification?

- A. Wheel
- B. Allen key
- C. Screw driver
- D. Lever ✓

Q3 Part B (Mechanic Motor Vehicle)

A drawing instrument box is used to carry all _____ instruments.

- A. drawing ✓
- B. screening
- C. drilling
- D. casting

Q4 Part B (Mechanic Motor Vehicle)

A circular hole of radius 3 cm is cut from a rectangular sheet of dimensions 12 cm × 10 cm. Find the remaining area.

(Take $\pi = 3.14$)

- A. 100 cm²
- B. 91.74 cm² ✓
- C. 95.86 cm²
- D. 75.74 cm²

Q5 Part B (Mechanic Motor Vehicle)

In which part of the IC engine are the cylinder liners fitted?

- A. Piston
- B. Cylinder head
- C. Cylinder block ✓
- D. Crankcase

Q6 Part B (Mechanic Motor Vehicle)

Why is it important for every person to follow safety procedures in the workplace?

- A. To increase overall production efficiency
- B. To minimise risks and avoid accidents ✓
- C. To reduce operational costs significantly
- D. To limit the need for frequent supervision

Q7 Part B (Mechanic Motor Vehicle)

Which of the following metals is NOT used for manufacturing of piston bearing?

- A. Copper
- B. Lead
- C. Cast iron ✓
- D. Silicon

Q8 Part B (Mechanic Motor Vehicle)

When measuring the resistance of a resistor using an ohmmeter, what does a reading of zero resistance indicate?

- A. The resistor is functioning normally.
- B. The resistor is open-circuited.
- C. The resistor is short-circuited. ✓
- D. The ohmmeter is malfunctioning.



Q9 Part B (Mechanic Motor Vehicle)

Arrange the following steps in the correct order to draw an equilateral triangle with each side of 35 mm.

1. Join CA and CB.
2. Draw a line and mark AB 35 mm as the side of the triangle.
3. With radius AB and center A and B, draw arcs cutting at C.
4. ABC is the required triangle.

A. 2, 3, 1, 4



B. 1, 2, 4, 3

C. 2, 1, 3, 4

D. 3, 2, 1, 4

Q10 Part B (Mechanic Motor Vehicle)

When selecting a sheet size for an original drawing, what should be the primary consideration?

A. The standard size of the drawing office.

B. The clarity and resolution required.



C. The orientation of the drawing (horizontal or vertical).

D. The size of the reproduction.

Q11 Part B (Mechanic Motor Vehicle)

If the current flowing through a conductor is 5 A and the resistance of the conductor is 10 ohms, what will be the voltage across the conductor, according to Ohm's Law?

A. 15 V

B. 50 V



C. 5 V

D. 10 V

Q12 Part B (Mechanic Motor Vehicle)

What should you do to ensure your personal safety at work?

A. Wear personal protective equipment.



B. Work in a hurry without checking equipment.

C. Ignore warning signs and instructions.

D. Take risks to finish tasks quickly.

Q13 Part B (Mechanic Motor Vehicle)

Which component connects the fuel tank to the feed pump?

A. Vent pipe

B. High-pressure pipe

C. Suction pipe



D. Overflow pipe

Q14 Part B (Mechanic Motor Vehicle)

The intercooler is an additional component that looks like a:

A. air filter

B. turbocharger

C. fuel pump

D. radiator



Q15 Part B (Mechanic Motor Vehicle)

Which of the following type of lubricants are used as solid particles?

A. Solid wax

B. Grease

C. Graphite



D. Silica

Q16 Part B (Mechanic Motor Vehicle)

Which of the following parts of a file is the part fitted to the tang for holding the file?

A. Tip or Point

B. Handle



C. Edge

D. Tang

Q17 Part B (Mechanic Motor Vehicle)

Which of the following is an important safety measure during a power failure?

A. Using candles for lighting

B. Continuing to use equipment without verifying power status

C. Ensuring all machines and electrical equipment are turned off



D. Ignoring alarm systems



Q18 Part B (Mechanic Motor Vehicle)

What is a key advantage of using MOSFETs in electronic circuits compared to other types of transistors?

- A. High frequency response
- B. High input impedance and low power consumption ✓
- C. Ability to handle higher voltages and currents than BJTs
- D. Ability to amplify both AC and DC signals

Q19 Part B (Mechanic Motor Vehicle)

What is the main function of a master cylinder in a braking system?

- A. To build up hydraulic pressure to operate the brakes ✓
- B. To measure the brake fluid level
- C. To control the engine speed
- D. To absorb vibrations from the road

Q20 Part B (Mechanic Motor Vehicle)

Which of the following organisations is responsible for enforcing workplace safety regulations in India?

- A. World Health Organization (WHO)
- B. Food and Drug Administration (FDA)
- C. Directorate General of Factory Advice Service and Labour Institutes (DGFASLI) ✓
- D. Environmental Protection Agency (EPA)

Q21 Part B (Mechanic Motor Vehicle)

Which component stores electrical energy in a vehicle?

- A. DC Generator/Dynamo
- B. Battery ✓
- C. Alternator
- D. Starter motor

Q22 Part B (Mechanic Motor Vehicle)

Read the statements carefully and select the correct option.

The basic requirements of a good combustion chamber is to provide:

- I) low power output
- II) high thermal efficiency and low specific fuel consumption
- III) smooth engine operation
- IV) reduced exhaust pollutants

A. II, III and IV ✓

B. I and II

C. I and IV

D. Only I

Q23 Part B (Mechanic Motor Vehicle)

A circuit consists of three resistors; 15 ohms, 10 ohms, and 20 ohms. The 15-ohm resistor is in series with the parallel combination of the 10-ohm and 20-ohm resistors. If a 24 V battery is applied across the circuit, what is the total current flowing through the circuit?

A. 3.1 A

B. 0.1 A

C. 1.1 A ✓

D. 2.1 A

Q24 Part B (Mechanic Motor Vehicle)

Which of the following statements is INCORRECT about the four-stroke diesel engine?

A. Cycles in both petrol and diesel engines consist of suction, compression, ignition, expansion and exhaust.

B. In C.I. engines, air-fuel mixture is sucked during the stroke and the fuel is injected in the cylinder near the end of the compression stroke. ✓

C. In C.I. engines, only air is sucked during the stroke and the fuel is injected in the cylinder near the end of the compression stroke.

D. The operation of C.I. engines (or diesel engines) is practically the same as those of S.I. engines.

Q25 Part B (Mechanic Motor Vehicle)

Which of the following instruments is used for the measurement of piston ring end gap in the cylinder?

A. Micrometer

B. Vernier caliper

C. Dial gauge

D. Feeler gauge ✓



Q26 Part B (Mechanic Motor Vehicle)

In a lead-acid battery, what is the chemical composition of the material used for the positive plate during discharge?

- A. Sulphuric acid (H_2SO_4)
- B. Lead (Pb)
- C. Lead dioxide (PbO_2) ✓
- D. Lead sulfate (PbSO_4)

Q27 Part B (Mechanic Motor Vehicle)

For what purpose are pins and clips used in engineering drawings?

- A. To transfer dimensions and dividing lines into a number of equal parts
- B. To draw horizontal lines, parallel lines and to guide/hold the set squares
- C. To fasten the drawing sheet on to the drawing board firmly so that it does not shake ✓
- D. To support the drawing paper/tracing paper for making drawings

Q28 Part B (Mechanic Motor Vehicle)

Which of the following systems is used to transmit engine torque to the driving wheels to drive a vehicle on the road?

- A. Transmission system ✓
- B. Steering system
- C. Differential gear mechanism
- D. Four bar chain mechanism

Q29 Part B (Mechanic Motor Vehicle)

What is the limiting value of compression ratio on which usually a petrol engine works?

- A. Compression ratio = 6
- B. Compression ratio = 8 ✓
- C. Compression ratio = 22
- D. Compression ratio = 14

Q30 Part B (Mechanic Motor Vehicle)

Which of the following is NOT a component of an alternator?

- A. Carburetor ✓
- B. Voltage regulator
- C. Rotor
- D. Stator

Q31 Part B (Mechanic Motor Vehicle)

In a velocity-time graph, the negative slope represents ____.

- A. retardation ✓
- B. displacement
- C. acceleration
- D. distance

Q32 Part B (Mechanic Motor Vehicle)

The percentage of energy loss per unit deformation from friction happening inside the rubber, which creates heat build-up in the rubber, and is measured as in terms of the temperature, is known as ____.

- A. creep
- B. resilience
- C. stress-strain test
- D. hysteresis ✓

Q33 Part B (Mechanic Motor Vehicle)

A fuel water separator is used to:

- A. remove water from diesel fuel ✓
- B. remove lubricant from diesel fuel
- C. reduce engine noise
- D. control fuel flow rate

Q34 Part B (Mechanic Motor Vehicle)

In intercooler, cooler air from outside is blown across the intercooler's fins by:

- A. the vehicle's motion
- B. the turbocharger
- C. a separate, dedicated fan
- D. the engine cooling fan ✓

Q35 Part B (Mechanic Motor Vehicle)

Which of the following elements is used in lubrication oil as an anti-wear additive?

- A. Copper (Cu) ✓
- B. Barium (Ba)
- C. Boron (B)
- D. Calcium (Ca)



Q36 Part B (Mechanic Motor Vehicle)

Read the given statements carefully and select the most appropriate option.

In three-way catalytic converters (TWC), where the term 'three-way' is in relation to the three regulated emissions, the converter is designed to reduce:

1. unburnt hydrocarbons are oxidised into water/steam
2. oxides are converted into nitrogen and oxygen
3. carbon monoxide is oxidised into carbon dioxide

A. Only I and III

B. I, II and III

C. Only I and II

D. Only II and III

Q37 Part B (Mechanic Motor Vehicle)

The primary function of the float in the float chamber is to:

A. regulate air intake

B. mix air and fuel

C. increase the fuel pressure

D. maintain a constant fuel level

Q38 Part B (Mechanic Motor Vehicle)

The unit for specific gravity is ____.

A. m/s^2

B. g/cm^3

C. kg/m^3

D. no unit (dimensionless)

Q39 Part B (Mechanic Motor Vehicle)

In an F-shaped combustion chamber, which of the following parts is generally NOT located on the extended side of the combustion chamber in a petrol engine?

A. Inlet valve

B. Spark plug

C. Outlet valve

D. Camshaft

Q40 Part B (Mechanic Motor Vehicle)

What is the advantage of giving heat treatment to a material?

A. To decrease the melting point of the material

B. To increase the weight of the material

C. To change it from one element to another element

D. To make surgical knives of sharp edges

Q41 Part B (Mechanic Motor Vehicle)

A vital component of a car's clutch system positioned on the clutch housing, which slides along a hollow shaft and moves through the clutch fork aided by hydraulic or cable pressure, is known as:

A. cushion spring

B. clutch release bearing

C. lever

D. fork arm

Q42 Part B (Mechanic Motor Vehicle)

Which of the following types of lube oils are used in airline industries?

A. Grease and bee wax lubricants

B. Natural petroleum lubricants

C. Synthetic lubricants

D. Biodiesel lubricants

Q43 Part B (Mechanic Motor Vehicle)

A tube-like structure lies between a piston and cylinder wall that regulates the flow of air and fuel inside the cylinder. This valve has a small hole in the side that promptly lines up with the hole of a cylinder. This valve is known as:

A. butterfly valve

B. sleeve valve

C. valve in form of port

D. poppet valve

Q44 Part B (Mechanic Motor Vehicle)

Nitrogen oxides are formed during combustion primarily due to:

A. the absence of oxygen

B. the presence of water vapour

C. low temperatures and pressure

D. high temperatures and pressure

Q45 Part B (Mechanic Motor Vehicle)

A mechanism that can split the power of a propeller shaft to the rear axle and produce variation in the speed of rear wheels when the vehicle takes a turn is called a/an:

A. integral unit

B. automatic clutch unit

C. torque convertor

D. differential unit



Q46 Part B (Mechanic Motor Vehicle)

Which of the following methods helps the easier assembly and disassembly by providing a more efficient way to fit the connecting rod around the crankshaft journal, particularly in tight engine compartment, in an internal combustion engine?

- A. Small end trimming linearly on a connecting rod
- B. Big end split orthogonally on a connecting rod
- C. Big end split obliquely on a connecting rod ✓
- D. Small end union linearly on a connecting rod

Q47 Part B (Mechanic Motor Vehicle)

According to BIS SP 46-2003, which of the following applications is correctly represented by a chain-thin line in engineering drawings?

- A. Center lines ✓
- B. Hidden edges
- C. Dimension lines
- D. Visible edges

Q48 Part B (Mechanic Motor Vehicle)

In a diesel engine, heat is supplied at which of the following thermodynamic processes?

- A. At constant pressure process ✓
- B. At constant volume process
- C. At constant temperature process
- D. At adiabatic compression process

Q49 Part B (Mechanic Motor Vehicle)

What is the purpose of an emergency evacuation plan?

- A. To ensure safe and orderly evacuation during emergencies ✓
- B. To avoid safety drills
- C. To increase productivity
- D. To allow workers to leave early

Q50 Part B (Mechanic Motor Vehicle)

What is the primary reason for electrical injuries when a person comes in contact with electrical equipment?

- A. Electrical equipment is not properly grounded.
- B. Current flows through the body causing harm. ✓
- C. Devices are used for too long.
- D. Electrical devices are too powerful.

Q51 Part B (Mechanic Motor Vehicle)

A type of internal spring force expands a piston ring based on the design and properties of the material used. It is determined by _____.

- A. forced piston ring gap
- B. compressed spring ring gap
- C. compressed ring gap
- D. free piston ring gap ✓

Q52 Part B (Mechanic Motor Vehicle)

What is the goal of quiet diesel technology?

- A. To reduce the noise, vibration and harshness (NVH) to the level of petrol engines ✓
- B. To eliminate the need for fuel injection systems
- C. To make diesel engines larger in size
- D. To increase the combustion pressure in diesel engines

Q53 Part B (Mechanic Motor Vehicle)

Which of the following options is correct when the pressure plate position is such that the cushion spring of clutch is NOT compressed?

- A. It is in the engagement phase.
- B. It is in the partial engagement phase.
- C. The clutch is closed.
- D. The clutch is open. ✓

Q54 Part B (Mechanic Motor Vehicle)

Which of the following designs have the advantage of effectively preventing contact slippage and axial misplacement of the connecting rod cover and connecting rod body?

- A. Straight cut design
- B. Oval cut design
- C. Obliquely cut design ✓
- D. Curvilinear cut design

Q55 Part B (Mechanic Motor Vehicle)

When does a vacuum booster create a vacuum?

- A. When the engine is off, and brake is applied
- B. When the engine is running, and the brake is not applied ✓
- C. When the fuel level is low
- D. When the brake is applied



Q56 Part B (Mechanic Motor Vehicle)

When using a multimeter to measure current, which of the following is correct?

- A. The multimeter is connected directly to the power source.
- B. The multimeter is connected in series with the load. ✓
- C. The multimeter is connected only across resistive components.
- D. The multimeter is connected in parallel with the load.

Q57 Part B (Mechanic Motor Vehicle)

The temperature of the air after compression stroke in a CI engine is:

- A. less than ambient temperature
- B. ambient temperature only
- C. high but not enough to ignite the fuel as spark plug is used to ignite the fuel
- D. high enough to auto-ignite the fuel without any external ignition source ✓

Q58 Part B (Mechanic Motor Vehicle)

Which type of gear applies in a car when the engine is running and the clutch is engaged, and the clutch shaft gear drives the drive gear of the lay shaft and thus lay shaft also rotates and the main shaft remains stationary as no gears in main shaft are engaged with lay shaft gears?

- A. Top gear
- B. First gear
- C. Neutral gear ✓
- D. Reverse gear

Q59 Part B (Mechanic Motor Vehicle)

Which of the following steps is INCORRECT for micrometer adjustment?

- A. Insert the large end of wrench in the hole on the external cylinder.
- B. Use the wrench to rotate the cylinder until zero is aligned.
- C. Find set screw and loosen it.
- D. Open the micrometer using friction stop. ✓

Q60 Part B (Mechanic Motor Vehicle)

Which of the following methods are commonly used for detecting cracks in a cylinder block?

- A. Ultrasonic testing and magnetic particle inspection ✓
- B. Compression gauge
- C. Feeler gauge
- D. Valve seat grinding machine

Q61 Part B (Mechanic Motor Vehicle)

Which of the following statements is correct about engine valves?

- A. The camshaft and its associated parts control the flame of sparks during ignition of the engine.
- B. The valve's head is perfectly positioned at a 30-45 degree angle that ideally fits with the valve seat, creating a firm seal. ✓
- C. Valves with their conical shapes control the flow of the entry of gasses into an engine.
- D. Poppet or mushroom valves are commonly found in two stroke engines for their remarkable features.

Q62 Part B (Mechanic Motor Vehicle)

Gaskets, seals and spacers are made using:

- A. centre punch
- B. hollow punch ✓
- C. pin punch
- D. prick punch

Q63 Part B (Mechanic Motor Vehicle)

Which of the following files is used for filing narrow grooves and angles above 10°?

- A. Knife-edge file ✓
- B. Half round file
- C. Square file
- D. Triangular file

Q64 Part B (Mechanic Motor Vehicle)

Which of the following hand-operated drilling machines is used for drilling small diameter holes up to 6 mm?

- A. Electric hand drill
- B. Ratchet drilling machine
- C. Breast drilling machine
- D. Bevel gear type drilling machine ✓



Q65 Part B (Mechanic Motor Vehicle)

Non-functional dimensions are _____.

- A. not essential for the function of the space or component** ✓
- B. essential for the function of the space or component
- C. derived from the values of the related features of a drawing
- D. directly derived from the values given on a drawing

Q66 Part B (Mechanic Motor Vehicle)

A hydraulic press is a designated special tool for:

- A. crankshaft checking
- B. piston clearance
- C. bearing oil-clearance check
- D. refitting of liner** ✓

Q67 Part B (Mechanic Motor Vehicle)

Which of the following types of pliers is used to shape loops in wires and to form curves in light metal strips?

- A. Flat nose pliers
- B. Round nose pliers** ✓
- C. Slip-joint pliers
- D. End cutting pliers

Q68 Part B (Mechanic Motor Vehicle)

When the thermostat is closed, it prevents water from entering the:

- A. engine block
- B. water pump
- C. radiator** ✓
- D. cylinder head

Q69 Part B (Mechanic Motor Vehicle)

What is the correct name of the top portion of the valve that interacts with the camshaft during operation of the engine?

- A. Tip** ✓
- B. Puppet
- C. Mushroom
- D. Butterfly

Q70 Part B (Mechanic Motor Vehicle)

In Fuel Cell Electric Vehicles (FCEV), energy is stored as:

- A. gasoline in a fuel tank
- B. hydrogen in a gas tank** ✓
- C. electricity in a battery
- D. kinetic energy in a flywheel

Q71 Part B (Mechanic Motor Vehicle)

Which of the following instruments works on the principle of the magnification of the small movement of the plunger or stylus that is converted into a rotary motion of the pointer on a circular scale?

- A. Pressure gauge
- B. Micrometer
- C. Vernier caliper
- D. Dial test indicator** ✓

Q72 Part B (Mechanic Motor Vehicle)

Which of the following vices consists of a handle and a small collet chuck at one end?

- A. Hand vice
- B. Pin vice** ✓
- C. Pipe vice
- D. Toolmaker's vice



Q73 Part B (Mechanic Motor Vehicle)

$$\left(\frac{3}{8}\right) + \left(\frac{5}{12}\right)$$

A. $\frac{17}{24}$

B. $\frac{19}{24}$ ✓

C. $\frac{8}{20}$

D. $\frac{7}{12}$

Q74 Part B (Mechanic Motor Vehicle)

Which of the following is the correct expression for power developed at the crankshaft in terms of mechanical efficiency?

Consider BP - brake power, IP - Indicated power

A. $BP = IP \times \text{Mechanical efficiency}$ ✓

B. $IP = \text{Mechanical efficiency} \times PB$

C. $BP = \frac{(\text{Mechanical efficiency} + IP)}{100}$

D. $BP = \frac{\text{Mechanical Efficiency}}{IP}$

Q75 Part B (Mechanic Motor Vehicle)

$\cos\theta$

A. $\frac{3}{5}$

B. $\frac{4}{5}$ ✓

C. $\frac{5}{4}$

D. $\frac{3}{4}$



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Part B (Mechanic Motor Vehicle)

75 Questions • Answer Key

Q1 Part B (Mechanic Motor Vehicle)

In a plunger-type oil pump, the plunger moves in the cylinder:

- A. rotationally
- B. in a circular motion
- C. up and down
- D. side to side



Q2 Part B (Mechanic Motor Vehicle)

Which of the following types of shafts allows easy implementation of a 4 valve per cylinder configuration?

- A. Single overhead cam setup
- B. Dual overhead cam setup
- C. Crankshaft of multicylinder engine setup
- D. Cam and follower rocker arm setup



Q3 Part B (Mechanic Motor Vehicle)

In air-cooled engines, the cylinders are typically:

- A. fully Independent
- B. liquid-cooled
- C. grouped together in a single block
- D. semi-independent



Q4 Part B (Mechanic Motor Vehicle)

Which of the following is a key advantage of using Thyristors in power control applications?

- A. High frequency switching
- B. High efficiency and low power loss
- C. Small size and low cost
- D. Low voltage handling capabilities



Q5 Part B (Mechanic Motor Vehicle)

The cooling system's main purpose is to:

- A. increase engine temperature
- B. control vehicle suspension
- C. supply fuel to the engine
- D. maintain engine temperature within operating limits



Q6 Part B (Mechanic Motor Vehicle)

Which of the following methods is implemented for locking a semi floating type piston pin?

- A. Riveting
- B. Gluing
- C. Screw
- D. Welding



Q7 Part B (Mechanic Motor Vehicle)

A constant mesh gearbox usually comes with how many manual transmission configurations?

- A. It comes with a 5-speed 1-reverse manual transmission configuration.
- B. It comes with a 4-speed 1-reverse manual transmission configuration.
- C. It comes with a 3-speed 1-reverse manual transmission configuration.
- D. It comes with a 6-speed 1-reverse manual transmission configuration.



Q8 Part B (Mechanic Motor Vehicle)

Match the correct length and breadth of the Trimmed sizes of sheets.

Designation	Trimmed size
A. A0	P. 297 × 420
B. A1	Q. 420 × 594
C. A2	R. 594 × 841
D. A3	S. 841 × 1189

- A. A - R, B - S, C - Q, D - P
- B. A - P, B - R, C - Q, D - S
- C. A - S, B - R, C - P, D - Q
- D. A - S, B - R, C - Q, D - P



Q9 Part B (Mechanic Motor Vehicle)

Which of the following parts of a hammer-head is used for shaping and forming work like riveting and bending?

- A. Face
- B. Eyehole
- C. Pein
- D. Cheek



Q10 Part B (Mechanic Motor Vehicle)

Which of the following is the key difference between a fuse and a circuit breaker?

- A. A fuse can be reset after tripping, while a circuit breaker must be replaced.
- B. A fuse is used for high-voltage circuits, while a circuit breaker is used for low-voltage circuits.
- C. A fuse is a mechanical device, while a circuit breaker is an electronic device.
- D. A fuse is a one-time-use device, while a circuit breaker can be reset and reused. ✓

Q11 Part B (Mechanic Motor Vehicle)

What do the SAE viscosity rating numbers denote, such as 0W or 5W?

- A. Denotes thicker oil that better resists viscosity breakdown when hot
- B. High viscosity oil and difficult flow for cold starting
- C. Easier oil flow for cold starting ✓
- D. Denotes thicker oil that better resists viscosity breakdown when cold

Q12 Part B (Mechanic Motor Vehicle)

What is the chemical effect that occurs in a battery during the charging process of a Lead Acid battery?

- A. Lead reacts with sulphur to form lead sulphate
- B. Water dissociation into hydrogen and oxygen
- C. Lead sulphate decomposes into lead and sulphuric acid ✓
- D. Sulphuric acid dissociates into hydrogen and sulphate ions

Q13 Part B (Mechanic Motor Vehicle)

In which part of the IC engine does a piston move during operation?

- A. Cylinder head
- B. Cylinder liner ✓
- C. Sump
- D. Crankcase

Q14 Part B (Mechanic Motor Vehicle)

The primary purpose of European emission standards is to set limits on:

- A. the physical dimensions of vehicles
- B. vehicle noise levels
- C. vehicle fuel efficiency
- D. exhaust emissions from vehicles ✓

Q15 Part B (Mechanic Motor Vehicle)

Pencils are rated in engineering drawings based on the _____.

- A. hardness or softness of the lead ✓
- B. colour of the lead
- C. durability of the lead
- D. shape of the lead

Q16 Part B (Mechanic Motor Vehicle)

A fuel with lower viscosity will flow:

- A. if the temperature is higher
- B. at the same rate regardless of viscosity
- C. less easily
- D. more easily ✓

Q17 Part B (Mechanic Motor Vehicle)

Which of the following parts of a dial bore gauge is used to hold all the components together and contains a mechanism for transmitting the plunger motion to the dial?

- A. Sliding plunger
- B. Anvil
- C. Stem ✓
- D. Extension rings

Q18 Part B (Mechanic Motor Vehicle)

What type of bearing is fitted into the connecting rod, allowing the gudgeon pin to provide bearing for the oscillating small end of the connecting rod?

- A. Needle bearing ✓
- B. Taper roller bearing
- C. Journal bearing
- D. Ball bearing

Q19 Part B (Mechanic Motor Vehicle)

The power source(s) used by Hybrid Electric Vehicles (HEVs) is/are:

- A. only an internal combustion engine
- B. only an electric motor
- C. a fuel cell and an electric motor
- D. both an internal combustion engine and an electric motor ✓



Q20 Part B (Mechanic Motor Vehicle)

What is the blade length of the T1 'T' square, as per IS:1360-1989?

- A. 500 mm
- B. 1500 mm
- C. 700 mm
- D. 1000 mm



Q21 Part B (Mechanic Motor Vehicle)

The distance a cam lobe rises away from the base circle of the camshaft is known as:

- A. mushroom valve lift
- B. rocker arm lift
- C. gross lift
- D. lobe lift



Q22 Part B (Mechanic Motor Vehicle)

Which of the following types of valves is NOT used in the four stroke engine?

- A. Butterfly valves
- B. Rotary valves
- C. Reed valves
- D. Poppet valves



Q23 Part B (Mechanic Motor Vehicle)

What happens when the brake pedal is pressed in a pedal-assisted type brake?

- A. The power cylinder is activated.
- B. The engine shuts down.
- C. The clutch is released.
- D. The accelerator is engaged.



Q24 Part B (Mechanic Motor Vehicle)

Which of the following is an example of a p-type semiconductor?

- A. Silicon doped with phosphorus
- B. Silicon doped with arsenic
- C. Silicon doped with boron
- D. Germanium doped with phosphorus



Q25 Part B (Mechanic Motor Vehicle)

Which of the following punch marks is used for the correct location and seating of the divider point?

- A. Centre punch marks of 30°
- B. Centre punch marks of 60°
- C. Prick punch marks of 120°
- D. Prick punch marks of 30°



Q26 Part B (Mechanic Motor Vehicle)

When did India implement the Hazardous Wastes (Management and Handling) Rules to regulate the disposal and handling of hazardous waste?

- A. 1987
- B. 2000
- C. 1989
- D. 1982



Q27 Part B (Mechanic Motor Vehicle)

Which of the following is a benefit of Variable Geometry Turbochargers (VGT)?

- A. Minimal turbo lag
- B. Increased turbo lag
- C. Lower efficiency at high engine speeds
- D. Higher boost threshold



Q28 Part B (Mechanic Motor Vehicle)

The exhaust gases in a two stroke engine are driven out by:

- A. fresh charge of fuel entering the cylinder nearly at the end of the compression stroke
- B. fresh air entering the casing nearly at the end of the suction stroke
- C. fresh charge of fuel entering the cylinder nearly at the end of the working stroke
- D. left out charge of fuel from exhaust entering the cylinder nearly at the end of the working stroke



Q29 Part B (Mechanic Motor Vehicle)

Which of the following parts of an engine adjusts the opening times of the valves to suit all operating conditions and ensures ideal charge cycles within a wide range of engine speeds and loads?

- A. Rocker arm
- B. Crankshaft
- C. Camshaft
- D. Crank



Q30 Part B (Mechanic Motor Vehicle)

What does an optical pyrometer measure?

- A. The relative density of liquids
- B. The temperature of the surface**
- C. The volume of liquids
- D. The pressure of gases

Q31 Part B (Mechanic Motor Vehicle)

What is the accuracy level of a vernier caliper that can be read?

- A. 0.02 mm**
- B. 0.01 mm
- C. 0.2 mm
- D. 0.1 mm

Q32 Part B (Mechanic Motor Vehicle)

Which of the following is true for a given fixed compression ratio?

- A. Both Otto and Diesel cycles are equally efficient.
- B. Otto cycle is the most efficient.**
- C. Dual cycle is the most efficient.
- D. Diesel cycle is the most efficient.

Q33 Part B (Mechanic Motor Vehicle)

Which of the following statements is/are correct?
Statement I - The annealing process uses heat to reduce the hardness and increase the ductility and toughness of various steels, cast iron, and alloys.
Statement II - Quenching is a rapid cooling process that alters specific properties of materials by manipulating the cooling rate.

- A. Statement (I) is correct but Statement (II) is incorrect.
- B. Statement (I) and (II) both are correct.**
- C. Statement (I) is incorrect but Statement (II) is correct.
- D. Statement (I) and (II) both are incorrect.

Q34 Part B (Mechanic Motor Vehicle)

Which of the following types of wooden mallets are used for general purpose work such as flattening and bending?

- A. Bossing mallets
- B. Side-faked mallets
- C. Standard wooden mallets**
- D. End-faked mallets

Q35 Part B (Mechanic Motor Vehicle)

A cylinder head gasket is incorporated between which of the following two parts of the engine?

- A. Puppet valve and cylinder block
- B. Piston ring and cylinder head
- C. Cylinder head and water jacket
- D. Cylinder block and cylinder head**

Q36 Part B (Mechanic Motor Vehicle)

Which of the following is a fundamental unit?

- A. newton
- B. metre**
- C. pascal
- D. watt

Q37 Part B (Mechanic Motor Vehicle)

The primary purpose of the absorption mufflers is to reduce:

- A. fuel consumption
- B. engine temperature
- C. engine power
- D. noise and pollution**

Q38 Part B (Mechanic Motor Vehicle)

In engineering drawing (lettering and numbering), a single stroke means that the _____.

- A. thickness of the line of the letter or number is obtained in one stroke of the pencil**
- B. thickness of the line of the letter or number is obtained in three strokes of the pencil
- C. thickness of the line of the letter or number is obtained in no strokes of the pencil
- D. thickness of the line of the letter or number is obtained in two strokes of the pencil

Q39 Part B (Mechanic Motor Vehicle)

What force (effort) will be required to push a load, initially at rest, of mass 500 g, so that at a distance of 20 m, its final velocity is 20 m/sec [Assume that there is no friction and 'g' = 10 m/s²].

- A. 5 J
- B. 10 N
- C. 5 N**
- D. 10 J



Q40 Part B (Mechanic Motor Vehicle)

Which of the following types of engines has irregular operation that occurs because the amount of fresh mixture entering the cylinder is not enough to clear all the exhaust gases and a part of it remains in the cylinder to contaminate the charge?

- A. Four-stroke petrol engine
- B. Two-stroke diesel engine
- C. Four-stroke diesel cycle
- D. Two-stroke petrol engine

**Q41 Part B (Mechanic Motor Vehicle)**

Which of the following statements correctly describes the placement and purpose of orientation marks on a drawing sheet?

1. Orientation marks are placed at two opposite corners of the drawing sheet to indicate the correct orientation on the drawing board.
2. Orientation marks consist of arrow heads placed across the frame, with one at the shorter side and one at the longer side, coinciding with the centering marks.
3. One of the orientation marks always points towards the draughtsman, indicating the direction in which the drawing sheet should be placed.
4. Orientation marks are used to mark the midpoint of each side of the drawing sheet for accurate centering.

- A. 1, 2, and 3 only
- B. 1 and 4 only
- C. 2 and 3 only
- D. 1, 2, and 4 only

**Q42 Part B (Mechanic Motor Vehicle)**

What is the primary principle behind the generation of electrical energy in a piezoelectric device?

- A. Conversion of thermal energy into electrical energy
- B. Conversion of chemical energy into electrical energy
- C. Conversion of light energy into electrical energy
- D. Conversion of mechanical stress into electrical energy

**Q43 Part B (Mechanic Motor Vehicle)**

Which of the following punches is used to make deeper witness marks on scribed lines and make it easier for the drill to start correctly?

- A. Solid punch
- B. Centre punch
- C. Pin punch
- D. Prick punch

**Q44 Part B (Mechanic Motor Vehicle)**

The basic function of the connecting rod is to convert:

- A. the reciprocating motion of piston to the rotary motion of the crankshaft
- B. the curvilinear motion of piston to the linear motion of the camshaft
- C. the reciprocating motion of piston head to the rotary motion of the camshaft
- D. the linear motion of the crankshaft into rotary motion of piston

**Q45 Part B (Mechanic Motor Vehicle)**

_____ brakes are a type of brake in which the fluid from the master cylinder is forced into a caliper where it presses against a piston. The piston in turn squeezes two brake pads against the disc (rotor), which is attached to wheel, forcing it to slow down or stop.

- A. Vacuum
- B. Electrical
- C. Disk
- D. Drum

**Q46 Part B (Mechanic Motor Vehicle)**

As per the SAE viscosity rating, which of the following numbers reflects thicker oil that better resists viscosity breakdown in the summer season?

- A. 0W to 5W
- B. -6W to -70W
- C. 100W to 160W
- D. 40W to 50W

**Q47 Part B (Mechanic Motor Vehicle)**

Which of the following statements is NOT correct about the steering system in vehicles?

- A. It should multiply the turning effort applied on the steering wheel by the driver.
- B. It should minimise the turning effort applied on the steering wheel by the driver by use of overdamped damper.



- C. The function of the steering system is to convert the rotary movement of the steering wheel into the angular turn of the front wheels.
- D. It should not transmit the shocks of the road surface encountered by wheels to the driver hands.



Q48 Part B (Mechanic Motor Vehicle)

Why are metal dispersants or detergents used as additives in lubrication oil?

- A. These are used to control the formation of sedimentation of particles throughout the system
- B. These are used to control bubbles formation and mist throughout the system
- C. These are used to control viscosity index and wax formation throughout the system at high temperature
- D. These are used to control deposit formation throughout the system ✓

Q49 Part B (Mechanic Motor Vehicle)

_____ is a type of spring that is often used as part of the vehicle clutch assembly, and its main function is to engage and disengage the pressure plate and the driven plate (clutch disk).

- A. Spiral spring
- B. Leaf spring
- C. Diaphragm spring ✓
- D. Laminated spring

Q50 Part B (Mechanic Motor Vehicle)

Which of the following statements is correct about a protractor?

Statements:

1. A protractor can be used to measure angles from both sides.
2. A protractor is typically made of a rigid metal material.

- A. Neither statement is true
- B. Only statement 2 is true
- C. Only statement 1 is true ✓
- D. Both statements are true

Q51 Part B (Mechanic Motor Vehicle)

In engineering drawing, what is defined as the path of a moving point with no thickness?

- A. Angle
- B. Curve
- C. Point
- D. Line ✓

Q52 Part B (Mechanic Motor Vehicle)

In an induction system, after passing through the air cleaner, the air goes to the:

- A. intake port
- B. combustion chamber
- C. turbocharger ✓
- D. induction manifold

Q53 Part B (Mechanic Motor Vehicle)

When drawing a curved line of a specific length in an engineering drawing, which tool is most appropriate for ensuring accuracy?

- A. Protractor
- B. Straightedge
- C. French Curve ✓
- D. Compass

Q54 Part B (Mechanic Motor Vehicle)

Which of the given statements is/are correct?

Carbon monoxide is described as:
I. flammable.
II. toxic, odourless and tasteless
III. as a product of incomplete combustion

- A. I, II and III ✓
- B. Only III
- C. Only II
- D. Only I

Q55 Part B (Mechanic Motor Vehicle)

What is waste?

- A. Natural resources for living organisms
- B. Valuable substances for agriculture
- C. Useful materials for industries
- D. Unwanted or unusable materials ✓

Q56 Part B (Mechanic Motor Vehicle)

What is the primary purpose of applying brakes in a vehicle?

- A. To increase the speed of the vehicle
- B. To improve fuel efficiency
- C. To stop or slow down the vehicle ✓
- D. To open the fuel tank



Q57 Part B (Mechanic Motor Vehicle)

An 'excessively rich' air-fuel mixture means there is:

- A. too much air compared to fuel
- B. the perfect balance of air and fuel
- C. too much fuel compared to air ✓
- D. no fuel present

Q58 Part B (Mechanic Motor Vehicle)

As the piston moves up to create a compression force, which of the following parts movements leads to inlet valve closure in engine?

- A. Connecting rod movement
- B. Helical spring movement
- C. Crankshaft movement
- D. Camshaft movement ✓

Q59 Part B (Mechanic Motor Vehicle)

In spark-ignition engines, particulates are primarily caused by:

- A. incomplete combustion of rich air-fuel mixtures ✓
- B. perfect combustion of stoichiometric air-fuel mixtures
- C. complete combustion of lean air-fuel mixtures
- D. the use of high-octane fuel

Q60 Part B (Mechanic Motor Vehicle)

How is the heat produced in the diodes dissipated?

- A. By the battery
- B. By the heat sink ✓
- C. By the voltage regulator
- D. By the alternator

Q61 Part B (Mechanic Motor Vehicle)

Which of the following uses of wire gauge is INCORRECT?

- A. It measures the diameter of a wire.
- B. It does not help determine how much current a wire can carry. ✓
- C. Using the wrong wire gauge can damage appliances and electronic devices.
- D. It is used in electrical installations, welding and other applications.

Q62 Part B (Mechanic Motor Vehicle)

Final drive is the last stage of power transmission from the propeller shaft to rear axles and then to the wheels. To which of the following angles does it turn the propeller shaft motion?

- A. Right angle to drive the rear axle ✓
- B. 45 degree angle to drive the rear axle
- C. -45 degree to drive the front axle
- D. Equal and opposite angle to drive the rear axle

Q63 Part B (Mechanic Motor Vehicle)

If the coefficient of linear expansion of a material is $2 \times 10^{-5} \text{ } ^\circ\text{C}^{-1}$, what does it mean?

- A. The material expands by 2×10^{-5} times its original area per degree Celsius
- B. The material expands by 2×10^{-5} times its original volume per degree Celsius
- C. The material expands by 2×10^{-5} times its original length per degree Celsius ✓
- D. The material always increases by 2×10^{-5} kg when temperature is increased by 1°C

Q64 Part B (Mechanic Motor Vehicle)

In a cloth-type filter insert, the cloth is wound over:

- A. a plastic mesh
- B. a solid metal rod
- C. a paper element
- D. a perforated tube ✓

Q65 Part B (Mechanic Motor Vehicle)

Why is it important to follow proper disposal procedures for industrial waste?

- A. To allow waste to decompose anywhere
- B. To reduce the number of trash bins needed
- C. To save time and effort in sorting waste
- D. To comply with environmental regulations and reduce pollution ✓



Q66 Part B (Mechanic Motor Vehicle)

What is the typical operating voltage range for a standard passenger car with an internal combustion engine when the engine is running?

- A. 12–12.8 volts DC
- B. 24–28 volts DC
- C. 13.5–14.7 volts DC
- D. 9–11 volts DC



Q67 Part B (Mechanic Motor Vehicle)

Which of the following is NOT a correct statement about the torsion spring?

- A. This spring needs less space.
- B. It is lighter than leaf spring system.

It takes the driving or braking torque, and additional link mechanisms are not required for this purpose.



- D. This spring provides very neat and compact design.

Q68 Part B (Mechanic Motor Vehicle)

A type of chamber in which the combustion space is essentially a single cavity with little restriction on one part of the chamber to the other, and hence with no large difference in pressure between parts of the chamber during the combustion process is known as:

- A. air-cell combustion chamber
- B. open combustion chamber
- C. pre-combustion chamber
- D. shallow depth combustion chamber



Q69 Part B (Mechanic Motor Vehicle)

Which of the following types of wooden mallets are used for hollowing panel beatings?

- A. Standard wooden mallets
- B. End-faked mallets
- C. Side-faked mallets
- D. Bossing mallets



Q70 Part B (Mechanic Motor Vehicle)

A device operates at 240 V and consumes 480 W of power. What is the current flowing through the device?

- A. 2 A
- B. 1 A
- C. 1.5 A
- D. 2.5 A



Q71 Part B (Mechanic Motor Vehicle)

If a machine has an efficiency of 80%, it means:

- A. the machine produces more output than input
- B. the machine has a velocity ratio and mechanical advantage both equal to 80
- C. the machine does not have any loss in input energy
- D. the machine loses 20% of the input



Q72 Part B (Mechanic Motor Vehicle)

A torsion bar is a steel bar operated by:

- A. both compressive stress and twisting stress
- B. both tensile and compressive stresses
- C. both shear strain and longitudinal strain
- D. both twisting and shear stresses



Q73 Part B (Mechanic Motor Vehicle)

Which of the following statements is correct about a diesel cycle and its air standard efficiency with respect to the compression ratio?

- A. The air standard efficiency of a diesel cycle increases with the increase in the compression ratio.
- B. The maximum compression ratio for the diesel engine is limited by detonation.
- C. The air standard efficiency decreases with the increase in the compression ratio.
- D. For a given compression ratio, Otto cycle is the least efficient while the diesel cycle is the most efficient.



Q74 Part B (Mechanic Motor Vehicle)

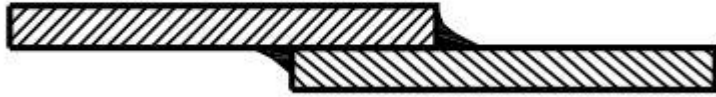
Which of the following is a correct function of the indirect injection combustion chamber?

- A. It accommodates the port (Inlet and Outlet) for In & Out of air.
- B. There is a confined space in it, in which the air and fuel mixtures are burned.
- C. It does not have properties to withstand temperature variations.
- D. It houses and guides the crankshaft.



Q75 Part B (Mechanic Motor Vehicle)

Identify the type of brazed joint shown below.



A. Joggle Lap

B. Simple Lap



C. Strapped Lap

D. Butted Flange



Part B (Mechanic Motor Vehicle)

75 Questions • Answer Key

Q1 Part B (Mechanic Motor Vehicle)

The catalytic converter helps to convert unburnt hydrocarbons into:

- A. carbon monoxide and water
- B. nitrogen oxides
- C. carbon dioxide and water
- D. pure oxygen

Q2 Part B (Mechanic Motor Vehicle)

A 100-mm centre-punch could have a 10-mm diameter body and a 6-mm diameter point ground to an angle of _____.

- A. 120°
- B. 90°
- C. 60°
- D. 30°

Q3 Part B (Mechanic Motor Vehicle)

Which of the following types of materials is NOT used in an oil filter as a strainer?

- A. Thin aluminum foil
- B. Felt
- C. Cloth
- D. Wire screen

Q4 Part B (Mechanic Motor Vehicle)

The primary function of the preliminary strainer is to remove:

- A. coarser impurities from the fuel
- B. only the finest particles from the fuel
- C. air from the fuel
- D. water from the fuel

Q5 Part B (Mechanic Motor Vehicle)

What happens to the fuel in a vehicle left in the sun?

- A. It evaporates from the tank
- B. It decomposes into water and carbon dioxide
- C. It solidifies
- D. It becomes more efficient

Q6 Part B (Mechanic Motor Vehicle)

Which of the following statements is/are true about Non-Functional Dimensions (NF) in engineering drawing?

Statement 1: Non-functional Dimensions are shown without limits, as they do not affect the functionality of the component or space.
Statement 2: Non-Functional Dimensions are typically used for reference purposes only, and do not impact the assembly or performance of the component or space.

- A. Only statement 2 is true
- B. Only statement 1 is true
- C. Both statements are true
- D. Neither statement is true

Q7 Part B (Mechanic Motor Vehicle)

Which of the following components is a part of a diesel engine only?

- A. Spray nozzle
- B. Fuel tank
- C. Carburetor
- D. Spark plug

Q8 Part B (Mechanic Motor Vehicle)

When the crank is at the dead centre, what will be the magnitude of bending moment and twisting moment at the crankshaft?

- A. Bending moment on the shaft is maximum and the twisting moment is zero.
- B. Both bending moment and the twisting moment are zero in the shaft
- C. Bending moment on the shaft is minimum and the twisting moment is maximum.
- D. Both bending moment and twisting moment on the shaft are maximum

Q9 Part B (Mechanic Motor Vehicle)

The clutch slave cylinder disengages the clutch from the engine by moving the:

- A. spline shaft
- B. pressure plate
- C. cushion spring
- D. leaf spring



Q10 Part B (Mechanic Motor Vehicle)

In a logic circuit, three SPST (Single Pole Single Throw) switches are used to implement a logic gate. The switches are connected in series. What is the output of the circuit if all switches are closed?

A. Undefined

B. 1

C. The output will depend on the type of gate used

D. 0

Q11 Part B (Mechanic Motor Vehicle)

In contexts such as automotive clutches, the spring is used to absorb shock during engagement. It is often referred to as a:

A. leaf spring of circular shape

B. tensile spring in helical shape

C. cushion spring in flat shape

D. spiral spring of rectangular shape

Q12 Part B (Mechanic Motor Vehicle)

During regenerative braking, the electric motor acts as a:

A. generator

B. heater

C. compressor

D. pump

Q13 Part B (Mechanic Motor Vehicle)

Which of the following statements is NOT correct about the functions of a lube oil pump?

A. Maintains consistent oil circulation throughout the engine.

B. Provides direction for the oil's passage through the galleries and to various areas.

C. The movement of engine lubricant around the engine is made difficult

D. Oil is transferred to the engine's key components under high pressure,.

Q14 Part B (Mechanic Motor Vehicle)

An angle greater than 180 degrees is referred to as _____.

A. a right angle

B. an acute angle

C. an obtuse angle

D. a reflex angle

Q15 Part B (Mechanic Motor Vehicle)

The boiling point of water in a cooling system can be raised by:

A. decreasing the system pressure

B. increasing the system pressure

C. removing water from the system

D. adding more water to the system

Q16 Part B (Mechanic Motor Vehicle)

Which of the following components in the axle is the most likely to fail if there is an unusual loud clanking or clunking as you put your vehicle into gear, or if a vehicle seems to struggle to get power as it starts to move?

A. Bearing at the wheel is damaged

B. Bending in the shaft induced

C. There is a crack initiated in the axle at cross sectional area perpendicular to axis

D. Axle-joint damage

Q17 Part B (Mechanic Motor Vehicle)

Which of the statements is correct about a compression ignition engine?

A. Diesel engine produces less noise compared to petrol engine.

B. Operating speed range is less compared to petrol engine.

C. Starting is easy for diesel engine since less cranking effort is required compared to petrol engine.

D. Initial and maintenance costs of diesel engine is less compared to petrol engine.

Q18 Part B (Mechanic Motor Vehicle)

_____ is a type of single thin sheet of metal that yields when pressure is applied and is widely used in most modern cars. When pressure is removed, the metal springs back to its original shape.

A. Spiral spring

B. Diaphragm spring

C. Leaf spring

D. Cushion spring



Q19 Part B (Mechanic Motor Vehicle)

Which of the following materials is used as a binding agent in organic brake linings?

- A. Metal powder
- B. Rubber
- C. Cotton
- D. Resin



Q20 Part B (Mechanic Motor Vehicle)

In a star-type paper filter insert, the fuel flows:

- A. in a circular motion
- B. from inside to outside
- C. radially from outside to inside
- D. axially from top to bottom



Q21 Part B (Mechanic Motor Vehicle)

The accuracy of the dial bore gauge instrument depends on which of the following parts?

- A. A dot indicator on a linear scale
- B. An arrow on a semi-circular scale
- C. A pointer on a graduated dial
- D. A marking on a logarithmic dial



Q22 Part B (Mechanic Motor Vehicle)

Why do cars have treaded tyres?

- A. To increase friction and grip on the road
- B. To reduce weight
- C. To decrease friction
- D. To increase speed



Q23 Part B (Mechanic Motor Vehicle)

The function of a steering system is to convert the rotary movement of the steering wheel into:

- A. angular velocity of the front wheels
- B. angular turn of the front wheels
- C. linear motion of the front wheels
- D. angular turns of the rear wheels



Q24 Part B (Mechanic Motor Vehicle)

Evaporative emissions are primarily caused by:

- A. exhaust gases escaping from the tailpipe
- B. fuel burning in the engine
- C. fuel leaking onto the ground
- D. fuel evaporating from the fuel tank and carburetor



Q25 Part B (Mechanic Motor Vehicle)

The SI unit of 'ultimate stress' is _____.

- A. pascal (Pa)
- B. newton (N)
- C. newton per meter (N/m)
- D. joule per square meter (J/m²)



Q26 Part B (Mechanic Motor Vehicle)

In a two stroke petrol engine, during the upward stroke of the piston, the gases are compressed in the piston, and at the same time, which of the following is also performed during the operation?

- A. Fresh fuel enters in the cylinder from the crank chamber through the valve.
- B. Fresh air for petrol engine enters the cylinder from the chamber through the valve exhaust port.
- C. Fresh air and fuel (petrol) mixture enters the crank chamber through the valve.
- D. Exhaust gases enter the crank chamber through the valve.



Q27 Part B (Mechanic Motor Vehicle)

Diesel fuel is generally used in which of the following types of vehicles?

- A. Aerospace vehicles
- B. Scooters
- C. Cars
- D. Heavy trucks and buses



Q28 Part B (Mechanic Motor Vehicle) HINDI

रूट्स एयर-ब्लोअर (roots air-blower) प्रकार के सुपरचार्जर में रोटर किस ज्यामितीय आकृति में डिज़ाइन किए जाते हैं?

- A. सर्पिल आकृति (Spiral shape)
- B. बेलनाकार आकृति (Cylindrical shape)
- C. कुंडलिनी आकृति (Helical shape)
- D. अधिचक्रज आकृति (Epicycloid shape)



Q29 Part B (Mechanic Motor Vehicle)

Which of the following statements is NOT correct about the procedure of calculating balancing of crankshaft of an engine?

- ☒ A. To balance a crankshaft, metal can be added by welding material deposition on the 'heavy' side until balance is achieved.
- ☐ B. To balance a crankshaft, metal can be removed by drilling holes on the 'heavy' side until balance is achieved.
- ☐ C. Crankshaft balancing involves calculating the rotating and reciprocating masses of a crankshaft.
- ☐ D. It involves determining the balancing couple and counterweight mass required to balance the crankshaft.

Q30 Part B (Mechanic Motor Vehicle)

The hand priming device is used to:

- ☐ A. inject fuel into the engine cylinder
- ☒ B. pump fuel from the tank to the Fuel Injection Pump (FIP)
- ☐ C. control the fuel injection timing
- ☐ D. increase fuel pressure for combustion

Q31 Part B (Mechanic Motor Vehicle)

Which of the following is a primary difference between a primary and a secondary electrochemical cell?

- ☐ A. A secondary cell produces more energy than a primary cell.
- ☐ B. A primary cell can be recharged, while a secondary cell cannot be recharged.
- ☒ C. A primary cell cannot be recharged, while a secondary cell can be recharged.
- ☐ D. There is no difference between primary and secondary cells.

Q32 Part B (Mechanic Motor Vehicle)

Which of the following is a key electrical safety tip in a workshop?

- ☐ A. Operate machines with wet hands
- ☐ B. Ignore frayed wires if the device is still working
- ☐ C. Use water to clean electrical panels
- ☒ D. Ensure electrical equipment is properly grounded

Q33 Part B (Mechanic Motor Vehicle)

The accuracy of measurement by a try square is about:

- ☐ A. 0.02 mm per 10 mm length
- ☐ B. 0.001 mm per 10 mm length
- ☐ C. 0.004 mm per 10 mm length
- ☒ D. 0.002 mm per 10 mm length

Q34 Part B (Mechanic Motor Vehicle)

For which of the following calipers, a screw and nut are provided for opening and closing the caliper legs?

- ☒ A. Spring joint calipers
- ☐ B. Firm joint calipers
- ☐ C. Simple calipers
- ☐ D. Leg and point calipers

Q35 Part B (Mechanic Motor Vehicle)

What is the primary reason for conducting a vehicle road test?

- ☐ A. To test how fast the vehicle can go
- ☐ B. To avoid the need for inspections
- ☐ C. To increase fuel efficiency
- ☒ D. To ensure the vehicle is functioning safely and correctly

Q36 Part B (Mechanic Motor Vehicle)

In what form is the speed of information processing in the ECM (Engine Control Module) typically measured?

- ☒ A. Bits (8-bit, 16-bit, 32-bit, etc.)
- ☐ B. RPM (Revolutions Per Minute)
- ☐ C. Bar
- ☐ D. Volts

Q37 Part B (Mechanic Motor Vehicle)

What is the function of the drive end frame in an alternator?

- ☐ A. Acting as the main power storage unit.
- ☐ B. Controlling the current flow to the battery.
- ☐ C. Regulating voltage output of the alternator.
- ☒ D. Supporting a pre-lubricated sealed bearing for rotor shaft rotation.



Q38 Part B (Mechanic Motor Vehicle)

What is the primary purpose of preventive maintenance?

- A. To increase the workload of employees
- B. To reduce unexpected equipment failures ✓
- C. To delay repairs until breakdowns occur
- D. To eliminate the need for regular inspections

Q39 Part B (Mechanic Motor Vehicle)

Which of the following stages of an automatic transmission system locks the transmission, restricting a vehicle from moving?

- A. Park (P) stage ✓
- B. Drive (D) stage
- C. Low (L) stage
- D. Neutral (N) stage

Q40 Part B (Mechanic Motor Vehicle)

What is the primary goal of the 5S concept?

- A. To replace traditional safety measures
- B. To increase the number of safety regulations
- C. To improve workplace organisation and efficiency ✓
- D. To eliminate the need for maintenance

Q41 Part B (Mechanic Motor Vehicle)

Which option shows the correct answer when 27°C is converted to the kelvin scale?

- A. - 300 K
- B. 246 K
- C. 300 K ✓
- D. - 246 K

Q42 Part B (Mechanic Motor Vehicle)

What is the primary reason for the heating effect in a conductor when an electric current passes through it?

- A. The electric field in the conductor causes heat generation.
- B. The movement of electrons causes heat generation. ✓
- C. The conductor absorbs heat from the surrounding environment.
- D. The movement of protons causes heat generation.

Q43 Part B (Mechanic Motor Vehicle)

Which of the following types of brakes can be used with drum, disc or a combination, with air pressure providing the power instead of hydraulic fluid?

- A. Air brakes ✓
- B. Electric brakes
- C. Pneumatic brakes
- D. Magnetic brakes

Q44 Part B (Mechanic Motor Vehicle)

Which of the following types of piston ring is placed at the top of the piston in an IC engine?

- A. Oil ring
- B. Compression ring ✓
- C. Wiper ring
- D. Pressure ring

Q45 Part B (Mechanic Motor Vehicle)

Which of the following is INCORRECT about line standard?

- A. More accurate due to line thickness ✓
- B. Subject to parallax error
- C. Quick measurements over a wide range
- D. Used to measure the distance between two engraved lines

Q46 Part B (Mechanic Motor Vehicle)

A statement and conclusion for pictorial drawing are given below. Determine the logical relationship between them.

Statement: Pictorial drawings are three-dimensional and provide a visual representation of an object.

Conclusion: Therefore, pictorial drawings are useful for describing the shape of a piece part or component.

- A. The conclusion does not logically follow from the statement.
- B. The conclusion is partially supported by the statement.
- C. The conclusion is unrelated to the statement.
- D. The conclusion logically follows from the statement. ✓



Q47 Part B (Mechanic Motor Vehicle)

How many divisions are there on a vernier scale as used in a modern vernier caliper for metric measurement?

A. 50



B. 25

C. 75

D. 100

Q48 Part B (Mechanic Motor Vehicle)

Which of the following processes is carried out on connecting rods to locate the two halves relative to one another?

A. Dimples are created on the surface

B. Tapper threads are used

C. Mirror finishing is done by diamond turning machine

D. Serrations are used



Q49 Part B (Mechanic Motor Vehicle)

_____ recommend(s) 20 mm wide margins for sheet sizes AO and A1 in engineering drawings.

A. Borders and frames: SP: 46 (2003)



B. Geographic coordinate systems

C. Custom grids

D. Grid reference system

Q50 Part B (Mechanic Motor Vehicle)

In a circuit with a NTC type thermistor and a fixed resistor connected in series connected to a DC power supply, what will happen to the output voltage if there is a rise in temperature?

A. The output voltage will increase.



B. The output voltage will remain constant.

C. The output voltage will fluctuate depending on the resistor value.

D. The output voltage will decrease.

Q51 Part B (Mechanic Motor Vehicle)

Which of the following locations is correct for installing the oil filter in the engine?

A. After lines going to supply the oil to the bearing after coolers

B. In between coolers and the oil lines coming from sump

C. Downstream of coolers in order to filter if any solid part from coolers enters the oil lines



D. Up stream of coolers in order to filter if any solid part from coolers lives the oil lines

Q52 Part B (Mechanic Motor Vehicle)

The main function of an Electronic Control Unit (ECU) is to:

A. store fuel in the engine

B. store air in the engine

C. receive data from sensors and control actuators



D. work as a battery backup

Q53 Part B (Mechanic Motor Vehicle)

Which of the following types of seats is made of hardened alloys and pressed or shrunk into the cylinder head, often used in aluminium engines for better durability?

A. Integral valve seats

B. Ring valve seats

C. Butterfly valve seats

D. Insert valve seats



Q54 Part B (Mechanic Motor Vehicle)

What is the primary purpose of shielding in electrical cables?

A. To increase the voltage capacity of the cable

B. To increase the current-carrying capacity of the cable

C. To protect the cable from external electromagnetic interference



D. To prevent heat loss from the cable

Q55 Part B (Mechanic Motor Vehicle)

A type of brake has a diaphragm operating in a cylinder. For application of brakes on one side, a diaphragm is subjected to atmospheric pressure while the other is applied negative pressure by exhausting air known as ____ brake.

A. air

B. electric

C. vacuum



D. hydraulic

Q56 Part B (Mechanic Motor Vehicle)

Which of the following processes is used to fit a bearing into the connecting rod, allowing the gudgeon pin to provide the oscillating movement at the small end of the connecting rod?

A. Interference fit

B. Press fit



C. Autofrettage fit

D. Loose fit



Q57 Part B (Mechanic Motor Vehicle)

The space enclosed in the upper part of a cylinder, by the cylinder head and the piston top, during the combustion process is called:

- A. combustion chamber** ✓
- B. fuel digestion chamber
- C. air suction zone
- D. compression ratio

Q58 Part B (Mechanic Motor Vehicle)

Which of the following is a major risk associated with fuel spillage?

- A. Fire hazards and environmental contamination** ✓
- B. Better lubrication for workshop floors
- C. Increased productivity
- D. Reduced need for ventilation

Q59 Part B (Mechanic Motor Vehicle)

Which of the following actions is a part of the emergency response team's responsibilities during an active emergency?

- A. Preparing reports on emergency incidents
- B. Rescuing persons in immediate danger** ✓
- C. Conducting routine safety checks
- D. Scheduling regular evacuation drills

Q60 Part B (Mechanic Motor Vehicle)

Match the following designations of sheets with their respective trimmed sizes in length and breadth.

Designation Trimmed Size

- A) A0 P) 297 × 420
- B) A1 Q) 420 × 594
- C) A2 R) 594 × 841
- D) A3 S) 841 × 1189

- A. A-S ; B-R ; C-Q ; D-P** ✓
- B. A-Q ; B-R ; C-S ; D-P
- C. A-S ; B-P ; C-Q ; D-R
- D. A-P ; B-R ; C-Q ; D-S

Q61 Part B (Mechanic Motor Vehicle)

What is the term used to describe programs that distinguish between uppercase and lowercase letters, treating "yes" and "YES" as different inputs?

- A. Case-insensitive
- B. Numerical
- C. Case-sensitive** ✓
- D. Alphabetical

Q62 Part B (Mechanic Motor Vehicle)

The piston rings are placed in the ring groove and provide sealing between which of the following two parts to prevents leakage of high-pressure gases?

- A. Piston and the cylinder liner** ✓
- B. Piston and the cylinder block
- C. Piston and the cylinder head
- D. Piston and the cylinder fins

Q63 Part B (Mechanic Motor Vehicle)

Which of the following conversions are correct?

- A. 1 L = 1000 dm³ and 1 mL = 1000 cm³
- B. 1000 L = 1 dm³ and 1000 mL = 1 cm³
- C. 1 L = 1 dm³ and 1 mL = 1 cm³** ✓
- D. 1000 L = 1 dm³ and 1 mL = 1000 cm³

Q64 Part B (Mechanic Motor Vehicle)

What is the primary function of an alternator in a modern vehicle?

- A. Storing electrical energy for later use
- B. Supplying power directly to the spark plugs
- C. Controlling the fuel injection system
- D. Generating Alternating Current (AC) and converting it into Direct Current (DC)** ✓

Q65 Part B (Mechanic Motor Vehicle)

Which of the following terms is associated with the cams that control the valves and directly influence the breathing process of the engine?

- A. Shape and timing of the cams** ✓
- B. Speed of the cams
- C. Material of construction of the cams
- D. Location and length of the cams



Q66 Part B (Mechanic Motor Vehicle)

Which of the following care and maintenance of a marking table is INCORRECT?

- A. The marking table should be protected from damage.
- B. The marking table should be protected from rust.
- C. After use, the marking table should be cleaned with a soft cloth.
- D. The surface of the marking table should not be given a thin layer of oil. ✓

Q67 Part B (Mechanic Motor Vehicle)

Natural rubber is soft at high temperatures and brittle at low temperatures; hence raw rubber is heated with sulphur and other additives at a temperature range between 373 – 415 K to make it strong. This process is called ____ of rubber.

- A. vulcanisation ✓
- B. molding
- C. latex
- D. extrusion

Q68 Part B (Mechanic Motor Vehicle)

Which of the following statements is NOT correct about the parts associated with the cylinder head?

- A. Space enclosed between the cylinder head and piston top during combustion is the combustion chamber.
- B. Through the metal screw the spark plug is fitted in the cylinder head plug.
- C. The fuel injector is used to spray fuel into the engine cylinder. It is fixed to the cylinder head.
- D. The combustion of fuel and the consequent release of thermal energy results in the building up of pressure in the casing. ✓

Q69 Part B (Mechanic Motor Vehicle)

In Variable Geometry Turbochargers (VGT), if the aspect ratio is too small, the turbo will likely:

- A. reduce exhaust manifold pressure
- B. work perfectly at all speeds
- C. fail to create boost at low speeds
- D. choke the engine at high speeds ✓

Q70 Part B (Mechanic Motor Vehicle)

The process of aligning a principal inertia axis with the geometric axis of rotation of the shaft through the addition or removal of material in a shaft is known as:

- A. balancing ✓
- B. parallel alignment
- C. equilibrium
- D. angular alignment

Q71 Part B (Mechanic Motor Vehicle)

Which of the following is NOT the correct statement when fitting rings in an internal combustion (IC) engine?

- A. Cleaning the piston head sealing surface area thoroughly is required. ✓
- B. This is vital for maintaining proper combustion pressure and preventing oil consumption issues.
- C. Use of specialised tools to install the rings without twisting or damaging them is essential.
- D. The most crucial precaution is to ensure proper ring gap and alignment by carefully checking the end gap of each ring.

Q72 Part B (Mechanic Motor Vehicle)

A rectangular floor measuring 10 m × 8 m is to be tiled. If each tile covers 0.25 m², how many tiles are needed?

- A. 200
- B. 300
- C. 320 ✓
- D. 250

Q73 Part B (Mechanic Motor Vehicle)

Sine bars are used when a high degree of accuracy less than _____ is needed for measuring angles.

- A. 1 degree
- B. 30 degrees
- C. 1 minute ✓
- D. 30 minutes

Q74 Part B (Mechanic Motor Vehicle)

In the combustion process, electronically managed fuel injection systems control combustion by:

- A. increasing unburnt fuel emissions
- B. controlling the air-fuel ratio using sensors and catalytic converters ✓
- C. decreasing fuel atomisation
- D. eliminating the need for oxygen



Q75 Part B (Mechanic Motor Vehicle)

Which of the following screwdrivers has cross-shaped tips that are unlikely to slip from the cruciform slots in Philips recessed head screws?

A. Stumpy screwdriver

B. Offset screwdriver

C. Cross-recess screwdriver



D. Ratchet screwdriver



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Part B (Mechanic Motor Vehicle)

75 Questions • Answer Key

Q1 Part B (Mechanic Motor Vehicle)

In a logic circuit, two inputs A and B are applied to an AND gate, and the output of the AND gate is connected to the input of a NOT gate. If the inputs A and B are both at logic 0, what will be the output of the entire circuit?

- A. Undefined
- B. 0
- C. 1
- D. 2

Q2 Part B (Mechanic Motor Vehicle)

What is the accuracy level of metric micrometer reading?

- A. 0.5 mm
- B. 1.0 mm
- C. 0.1 mm
- D. 0.01 mm

Q3 Part B (Mechanic Motor Vehicle)

Ethylene glycol is added to antifreeze primarily because it has a:

- A. lower freezing point than water
- B. lower viscosity than water
- C. special additive that uses microorganisms to prevent freezing
- D. higher boiling point than water

Q4 Part B (Mechanic Motor Vehicle)

If the length of a resistor is doubled, what happens to its resistance, assuming all other factors remain constant?

- A. The resistance is doubled.
- B. The resistance remains the same.
- C. The resistance is halved.
- D. The resistance quadruples.

Q5 Part B (Mechanic Motor Vehicle)

Which of the following is NOT a part of the gear changing mechanism in an automatic transmission system?

- A. Universal coupling
- B. Epicyclic gear arrangement
- C. Fluid coupling
- D. Torque converter

Q6 Part B (Mechanic Motor Vehicle)

In a hydraulic brake booster system, where is the hydraulic pressure stored before it is used to assist braking?

- A. Power steering pump
- B. Master cylinder
- C. Accumulator
- D. Brake caliper

Q7 Part B (Mechanic Motor Vehicle)

The field winding in an alternator is formed by winding a large number of turns of insulated wire around the ____.

- A. alternator housing
- B. cylindrical iron core
- C. slip rings
- D. rotor shaft

Q8 Part B (Mechanic Motor Vehicle)

The main purpose of a turbocharger is to:

- A. increase the amount of air entering the engine cylinder
- B. reduce engine noise
- C. cool the exhaust gases
- D. decrease the amount of air entering the engine

Q9 Part B (Mechanic Motor Vehicle)

Which of the following parts of the engine is used to compress the charge during compression stroke and to transmit the gas force to the connecting rod and then to the crankshaft during power stroke?

- A. Crankcase
- B. Cylinder head
- C. Cylinder block
- D. Piston



Q10 Part B (Mechanic Motor Vehicle)

Who is authorised to conduct road tests on workshop vehicles?

A. Only trained and certified personnel ✓

B. Visitors to the workshop

C. Any employee

D. The company accountant

Q11 Part B (Mechanic Motor Vehicle)

What is the reason that cam lobe causes the engine to make a ticking or tapping noise, especially when idling, and is often rhythmic and varies in loudness?

A. When the cam lobe is subjected to higher load.

B. When the cam lobe wears out. ✓

C. When the cam lobe is hot.

D. When cam lobe is has insufficient lubrication.

Q12 Part B (Mechanic Motor Vehicle)

What is the best method of manufacturing of connecting rod used in an engine?

A. Drop forging ✓

B. Investment casting

C. Sand casting

D. Machining operation

Q13 Part B (Mechanic Motor Vehicle)

A single plate friction clutch consists of a clutch disk between the:

A. differential gear and transmission gear box

B. pressure plate and driving shaft

C. driving shaft and differential gear

D. flywheel and a pressure plate ✓

Q14 Part B (Mechanic Motor Vehicle)

The wave set of hacksaw teeth set has a pitch of _____.

A. 2.0 mm

B. 0.5 mm

C. 0.8 mm ✓

D. 1.0 mm

Q15 Part B (Mechanic Motor Vehicle)

Why are baffles installed inside the fuel tank?

A. To increase the fuel storage capacity

B. To filter foreign particles from the fuel

C. To minimise fuel slushing caused by movement ✓

D. To cool the fuel during engine operation

Q16 Part B (Mechanic Motor Vehicle)

For the given tire size, as per specification as 205/55R16, what is the width of the tire?

A. 205/55 mm

B. 550 mm

C. 205 mm ✓

D. 880 mm

Q17 Part B (Mechanic Motor Vehicle)

Which type of line is used to represent hidden edges or surfaces in a technical drawing, as per BIS SP 46-2003?

A. Continuous thin line

B. Continuous thick line

C. Dashed thin line ✓

D. Chain thin line

Q18 Part B (Mechanic Motor Vehicle)

Consider the following statements about turbocharger.

- I. A turbocharger is mounted on the exhaust manifold.
- II. It has a turbine wheel and a compressor wheel on the same shaft.
- III. Exhaust gases enter in turbine housing and rotate the turbine wheel.

Which of the given statements is/are correct?

A. II and III only

B. I and II only

C. I, II and III ✓

D. I only

Q19 Part B (Mechanic Motor Vehicle)

Which of the following parts is NOT associated with camshaft responsible for the opening and closing of engine valves?

A. Tappets

B. Connecting rod ✓

C. Rocker arms

D. Push rods



Q20 Part B (Mechanic Motor Vehicle)

Which of the following is NOT the purpose of lubrication oil in an engine?

- A. Separation of lighter boiling materials such as gasoline, jet fuel, diesel, etc.
- B. Finishing to improve oxidation and heat stability
- C. Mixing of impurities uniformly that include aromatics and polar compounds ✓
- D. Dewaxing to improve low-temperature fluidity

Q21 Part B (Mechanic Motor Vehicle)

When creating 10 mm single-stroke capital letters in vertical style, what does the 10 mm distance between horizontal parallel lines represent?

- A. Letter width
- B. Letter height ✓
- C. Stroke thickness
- D. Interline spacing

Q22 Part B (Mechanic Motor Vehicle)

The process in which an oil pump housing is first filled with oil, especially for oil pumps that are driven by the crankshaft, is known as:

- A. alignment of a pump
- B. ferrography of a pump
- C. priming of a new oil pump ✓
- D. cavitation of a pump

Q23 Part B (Mechanic Motor Vehicle)

What is the minimum age for employment in factories or mines or other hazardous employment, according to Article 24 of the Indian Constitution?

- A. 14 years ✓
- B. 12 years
- C. 16 years
- D. 18 years

Q24 Part B (Mechanic Motor Vehicle)

When passing stationary vehicles, keep a watch on _____ who may come out suddenly from the front of the stationary vehicle. While overtaking, it should be done on the _____ side. Always keep a good _____ between your vehicle and others.

- A. cyclists; left; interval
- B. vehicles; right; gap
- C. drivers; left; space
- D. pedestrians; right; distance ✓

Q25 Part B (Mechanic Motor Vehicle)

Which of the following calipers are used for marking lines, parallel to inside and outside edges and for locating the centre of round bars?

- A. Spring joint calipers
- B. Leg and point calipers ✓
- C. Simple calipers
- D. Firm joint calipers

Q26 Part B (Mechanic Motor Vehicle)

A carburetor used in a petrol engine is designed so as to fit in which of the following parts of the engine?

- A. Piston
- B. Casing
- C. Cylinder head ✓
- D. Connecting rod

Q27 Part B (Mechanic Motor Vehicle)

Which of the following types of additives are blended with the lubricant to reduce the surface tension of the oil?

- A. Tackiness agents
- B. Demulsifiers
- C. Mist suppressors
- D. Emulsifiers ✓



Q28 Part B (Mechanic Motor Vehicle)

Which of the following statements about title block is/are true?

Statement 1: The title block is situated in the bottom right-hand corner of the drawing sheet.

Statement 2: The contents of the title block are standardised and cannot be modified to suit individual company needs.

- A. Both statements are false
- B. Statement 1 is false, but statement 2 is true
- C. Statement 1 is true, but statement 2 is false ✓
- D. Both statements are true

Q29 Part B (Mechanic Motor Vehicle)

Which of the following 'V' blocks will have one 'V' groove and two grooves (slots) on either side for clamping in two positions?

- A. Double level single groove 'V' block
- B. Matched pair 'V' block
- C. Single level double groove 'V' block ✓
- D. Single level single groove 'V' block

Q30 Part B (Mechanic Motor Vehicle)

Which of the following symptom or indicator does NOT show the failure of an oil pump?

- A. When the engine oil flow slows or stops, the components continue to be lubricated by hot oil that is not permitted to flow
- B. When the engine runs at a normal temperature and oil flow is steady. ✓
- C. If a hydraulic lifter in a vehicle creates noise
- D. Able to push oil through the system adequately and with low pressure in oil lines

Q31 Part B (Mechanic Motor Vehicle)

Which of the following types of chisels is used for separating metals after chain drilling?

- A. Cross-cut chisel
- B. Flat chisel
- C. Web chisel ✓
- D. Diamond point chisel

Q32 Part B (Mechanic Motor Vehicle)

Over the last 15 years, by what percentage have the emissions of nitrogen oxides (NOx) and particulate matter (PM) from diesel car engines reduced due to technical innovation?

- A. 60% for NOx and 80% for PM
- B. 84% for NOx and 90% for PM ✓
- C. 100% for NOx and 90% for PM
- D. 70% for NOx and 85% for PM

Q33 Part B (Mechanic Motor Vehicle)

Which of the following types of engine classifications is based on cylinder arrangement?

- A. Diesel cycle engine
- B. Dual cycle engine
- C. V-engine ✓
- D. Otto cycle engine

Q34 Part B (Mechanic Motor Vehicle)

Which of the following is NOT a component of the CRDI (Common Rail Direct Injection) system?

- A. High-pressure pump
- B. Common rail and pipes
- C. Electronic engine Control Unit (ECU)
- D. Carburetor ✓

Q35 Part B (Mechanic Motor Vehicle)

The primary function of a supercharger is to:

- A. decrease the pressure of the air-fuel mixture
- B. increase the pressure of the air-fuel mixture ✓
- C. filter the air-fuel mixture
- D. decrease the temperature of the air-fuel mixture

Q36 Part B (Mechanic Motor Vehicle)

A crucial engine component that ensures proper sealing of the intake and exhaust valves is known as:

- A. valve barrier
- B. valve gasket
- C. valve seat ✓
- D. valve ring



Q37 Part B (Mechanic Motor Vehicle)

For your safety at work, which of the following should be ensured?

1. All the required protective clothing and equipment are used.
2. Training and instruction necessary for performing tasks safely have been received.

- A. Only statement 1
- B. Neither statement 1 nor 2
- C. Only statement 2
- D. Both statements 1 and 2** ✓

Q38 Part B (Mechanic Motor Vehicle)

Which of the following types of engine classifications is based on the thermodynamic cycle?

- A. In-line cylinder engine
- B. V-engine
- C. Radial engine
- D. Otto cycle engine** ✓

Q39 Part B (Mechanic Motor Vehicle)

Match the following types of lines with their correct descriptions according to their orientation and characteristics.

Description	Type of Line
A. A line that is neither parallel to a horizontal plane nor perpendicular to it.	1. Horizontal line
B. A line that is perpendicular to horizontal lines.	2. Vertical line
C. A line that changes its direction continuously.	3. Inclined line
D. A line that is parallel to a horizontal plane.	4. Curved line

- A. A - 1, B - 2, C - 3, D - 4
- B. A - 2, B - 3, C - 4, D - 1
- C. A - 3, B - 2, C - 4, D - 1** ✓
- D. A - 2, B - 1, C - 4, D - 3

Q40 Part B (Mechanic Motor Vehicle)

The feed pump is usually driven by:

- A. the camshaft of the Fuel Injection Pump (FIP)** ✓
- B. the crankshaft
- C. an electric motor
- D. the alternator

Q41 Part B (Mechanic Motor Vehicle)

In Hand Priming Pump, during the downward stroke of the plunger, the:

- A. suction valve closes, and the pressure valve opens** ✓
- B. suction valve opens, and fuel enters the chamber
- C. fuel returns to the fuel tank
- D. suction valve opens, and the pressure valve closes

Q42 Part B (Mechanic Motor Vehicle)

Which of the following information is necessary to construct a rectangle?

- A. Length of two adjacent sides** ✓
- B. Length of one side and the area of the rectangle
- C. Only the length of one side
- D. Only the length of the diagonal

Q43 Part B (Mechanic Motor Vehicle)

Which of the following colours is commonly used for caution signs?

- A. Blue
- B. Yellow** ✓
- C. Red
- D. Green

Q44 Part B (Mechanic Motor Vehicle)

What is the typical temperature range of a mercury-based clinical thermometer?

- A. 0°C to 100°C
- B. 35°C to 42°C** ✓
- C. 0°C to 50°C
- D. -10°C to 110°C



Q45 Part B (Mechanic Motor Vehicle)

Which of the following is NOT the correct function of the front axle?

- A. It transmits the torque of a vehicle through springs to the front wheels. ☒
- B. It absorbs torque applied on it due to braking of vehicle.
- C. An axle is a central shaft for a rotating wheel or gear.
- D. It supports the weight of the front part of the vehicle.

Q46 Part B (Mechanic Motor Vehicle)

Which of the following provisions is provided in the cylinder head during design for increasing the air cooling effect?

- A. Fins or extended surfaces are provided on the cylinder walls and cylinder blocks. ☒
- B. Cylinder head is provided with water jackets.
- C. Cylinder block is provided with high speed cooling air flow.
- D. Dimple like shapes on surfaces are provided on the cylinder walls.

Q47 Part B (Mechanic Motor Vehicle)

Which of the following statements is correct about the clutch used in vehicles?

- A. It allows the driver to couple or decouple the power transmission at will without stopping the engine. ☒
- B. It allows the driver to lift and unload the bulk material from engine and transmission.
- C. It allows the driver to change the drive of engine in any direction.
- D. It allows the driver to change the speed of engine.

Q48 Part B (Mechanic Motor Vehicle)

In two-stroke engines, one power cycle is completed in how many revolutions of the crankshaft?

- A. Two revolutions
- B. Four revolutions
- C. Three revolutions
- D. One revolution ☒

Q49 Part B (Mechanic Motor Vehicle)

A 100-mm prick punch with a 7-mm diameter body could have a 2.5-mm diameter point ground to an angle of _____.

- A. 90°
- B. 30° ☒
- C. 120°
- D. 45°

Q50 Part B (Mechanic Motor Vehicle)

The SI unit of temperature is/are _____.

- A. both kelvin and celsius
- B. celsius
- C. kelvin ☒
- D. fahrenheit

Q51 Part B (Mechanic Motor Vehicle)

Which of the following metals has the lowest melting point?

- A. Mercury ☒
- B. Iron
- C. Lead
- D. Gold

Q52 Part B (Mechanic Motor Vehicle)

Which of the following devices is used to insert a micrometer in the hole of an external cylinder for zero aligning?

- A. Spanner
- B. Allen key
- C. Screw driver
- D. Wrench ☒

Q53 Part B (Mechanic Motor Vehicle)

Which of the following statements is NOT correct for using scribes?

- A. Scribe points are very sharp, so they are to be handled very carefully.
- B. While scribing lines, the scribe is used like a pencil.
- C. Do not put the scribe in your pocket.
- D. Place a cork on the point when in use to prevent accidents. ☒



Q54 Part B (Mechanic Motor Vehicle)

What is the role of oxygen in a 'perfect combustion' engine?

- A. It is converted into hydrocarbons.
- B. It converts hydrogen to water and carbon to carbon dioxide. ✓
- C. It converts nitrogen into nitrogen oxides.
- D. It remains unaffected.

Q55 Part B (Mechanic Motor Vehicle)

A voltmeter with a resistance of 10,000 ohms is connected across a circuit that has a voltage of 50 V. What is the current flowing through the voltmeter?

- A. 2 mA
- B. 1 mA
- C. 5 mA ✓
- D. 4 mA

Q56 Part B (Mechanic Motor Vehicle)

Which of the following statements is INCORRECT about end standard?

- A. It measures the distance between two parallel flat surfaces.
- B. Faces are subject to wear.
- C. It is slower but more accurate.
- D. It is used to measure the distance between two engraved lines. ✓

Q57 Part B (Mechanic Motor Vehicle)

How much clearance is to be provided for compression ring fitted into the piston of an IC engine?

- A. Approximately 0.035 – 0.080 mm for compression rings
- B. Approximately 0.095 – 1.80 mm for compression rings
- C. 0.002 D to 0.004 D where D is the cylinder bore ✓
- D. Approximately 0.9 – 1.80 mm for compression rings

Q58 Part B (Mechanic Motor Vehicle)

Which of the following types of valve seats are commonly used in cast iron head of the engine?

- A. Integral valve seats ✓
- B. Insert valve seats
- C. Elliptical valve seats
- D. Two piece valve seats

Q59 Part B (Mechanic Motor Vehicle)

Where is a typical clutch actuated by a number of coil springs?

- A. On a pitch circle near the central axis of the shaft
- B. On a base circle near the centre of the circle
- C. On an addendum circle near the centre of the radius
- D. On a pitch circle near the periphery ✓

Q60 Part B (Mechanic Motor Vehicle)

What is the SI unit of 'volume'?

- A. Litres
- B. Cubic centimetre
- C. Cubic metre ✓
- D. Millilitres

Q61 Part B (Mechanic Motor Vehicle)

What happens if air is NOT removed from a hydraulic brake system?

- A. The fuel efficiency improves.
- B. The engine runs smoother.
- C. The tires wear out faster.
- D. The brakes feel spongy and less effective. ✓

Q62 Part B (Mechanic Motor Vehicle)

Convert 8.5% into a decimal.

- A. 0.85
- B. 8.5
- C. 0.085 ✓
- D. 85

Q63 Part B (Mechanic Motor Vehicle)

The camshaft is driven by the crankshaft through which of the following types of power transmission techniques?

- A. Flat belt transmission drive
- B. Timing gears drive ✓
- C. Chain drive
- D. Epicyclic gear train drive



Q64 Part B (Mechanic Motor Vehicle)

In gasoline-engine vehicles, catalytic converters are designed to convert:

- A. carbon dioxide to carbon monoxide
- B. water to oxygen
- C. nitrogen to oxygen
- D. carbon monoxide to carbon dioxide ✓

Q65 Part B (Mechanic Motor Vehicle)

The primary function of electronic mufflers is to produce:

- A. more engine noise
- B. anti-noise ✓
- C. increased exhaust back pressure
- D. higher exhaust gas temperature

Q66 Part B (Mechanic Motor Vehicle)

Find the lateral surface area of a cube with side length 5 cm.

- A. 125 cm²
- B. 150 cm²
- C. 200 cm²
- D. 100 cm² ✓

Q67 Part B (Mechanic Motor Vehicle)

A type of piston which provides an even distribution of the air-fuel mixture, consistent flame front during combustion and it has the smallest surface area on top is known as:

- A. semi-spherical piston
- B. dish piston
- C. flat piston ✓
- D. dome piston

Q68 Part B (Mechanic Motor Vehicle)

Which of the following terms in the 5S concept refers to making a habit of maintaining the established procedures?

- A. Shine
- B. Set
- C. Sort
- D. Sustain ✓

Q69 Part B (Mechanic Motor Vehicle)

In a series circuit, three resistors of 10 ohms, 20 ohms, and R ohms are connected in series with a 12 V battery. What is the value of resistance R if current flowing in the circuit is 0.2 A?

- A. 10 ohms
- B. 20 ohms
- C. 30 ohms ✓
- D. 40 ohms

Q70 Part B (Mechanic Motor Vehicle)

Which of the following is the primary reason why copper is widely used as a conductor in electrical wiring?

- A. Copper has low resistance and high conductivity. ✓
- B. Copper has a low melting point.
- C. Copper is abundant and inexpensive.
- D. Copper has high resistance to electricity.

Q71 Part B (Mechanic Motor Vehicle)

Consider the following statements.

- I. A Battery Electric Vehicle (BEV) uses electric motors.
- II. Most BEVs use lithium batteries.
- III. Battery packs are charged using electricity.

Which of the given statements is/are true?

- A. I and II only
- B. I only
- C. II and III only
- D. I, II and III ✓

Q72 Part B (Mechanic Motor Vehicle)

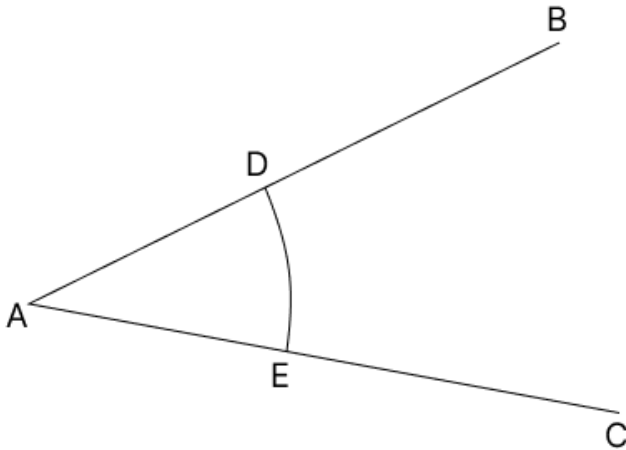
The emergency brake locks the wheels by bypassing which system?

- A. Electric brake system
- B. Air pressure system
- C. Hydraulic brake system ✓
- D. Fuel injection system



Q73 Part B (Mechanic Motor Vehicle)

In the process of bisecting angle BAC in the given figure, why do we draw arcs from points D and E?

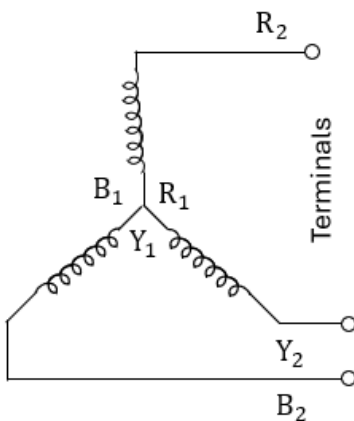


- A. To find midpoint AB
- B. To mark equal lengths
- C. To intersect line AC
- D. To intersect above A

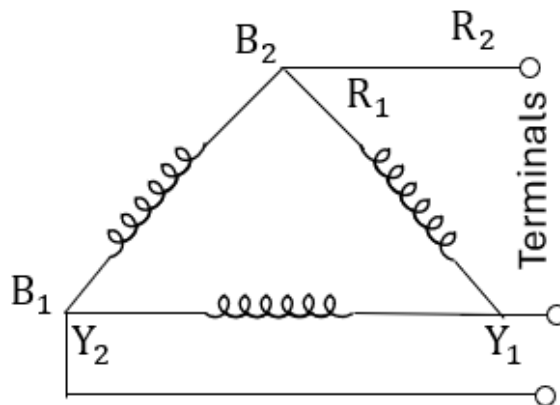


Q74 Part B (Mechanic Motor Vehicle)

In the given diagram, labelled (a) and (b), identify which connection is Delta (Δ) and which is Wye (Y).



(a)



(b)

- A. Both (a) and (b) are Delta (Δ) connections
- B. Both (a) and (b) are Wye (Y) connections
- C. (a) is Wye (Y) connection; (b) is Delta (Δ) connection
- D. (a) is Delta (Δ) connection; (b) is Wye (Y) connection



Q75 Part B (Mechanic Motor Vehicle)

For the given tire size, as per specification as 205/55R16, what is the width of the tire?

A. 880 mm

B. 550 mm

C. $\frac{205}{55}$ mm

D. 205 mm

