

Q1. Which refrigerant replaced R-134a in most modern car HVAC systems due to environmental concerns?

- A. R-12
- B. R-22
- C. R-1234yf
- D. R-410A

Answer: C

Q2. The main environmental problem caused by old refrigerants like R-12 was:

- A. Global warming only
- B. Ozone layer depletion
- C. Acid rain
- D. Water pollution

Answer: B

Q3. Which gas from car AC systems contributes to global warming?

- A. Oxygen
- B. Carbon dioxide
- C. Refrigerant gas
- D. Nitrogen

Answer: C

Q4. The Global Warming Potential (GWP) of R-1234yf is:

- A. Very high

B. Moderate

C. Very low

D. Zero

Answer: C

Q5. Which safety device protects the AC system from over-pressure?

A. Evaporator

B. Condenser

C. Pressure relief valve

D. Receiver drier

Answer: C

Q6. Refrigeration is the process of:

A. Heating a space

B. Cooling a space below atmospheric temperature

C. Removing humidity

D. Supplying hot air

Answer: B

Q7. The working fluid in refrigeration is called:

A. Coolant

B. Refrigerant

C. Lubricant

D. Water

Answer: B

Q8. In an air conditioning system, the main function of the evaporator is to:

- A. Compress gas
- B. Absorb heat
- C. Reject heat
- D. Pump refrigerant

Answer: B

Q9. Which component increases the pressure of the refrigerant?

- A. Condenser
- B. Compressor
- C. Evaporator
- D. Expansion valve

Answer: B

Q10. Air conditioning controls all except:

- A. Temperature
- B. Humidity
- C. Air cleanliness
- D. Fuel consumption

Answer: D

Q11. The vapour compression cycle has how many main components?

- A. 2
- B. 3
- C. 4
- D. 5

Answer: C

Q12. The function of the expansion valve is to:

- A. Increase pressure
- B. Decrease pressure
- C. Absorb heat
- D. Reject heat

Answer: B

Q13. In which component does refrigerant absorb heat?

- A. Condenser
- B. Compressor
- C. Evaporator
- D. Expansion valve

Answer: C

Q14. Heat rejection occurs in the:

- A. Evaporator
- B. Compressor
- C. Condenser
- D. Expansion device

Answer: C

Q15. COP of a refrigeration system is defined as:

- A. Work done / Heat absorbed
- B. Heat rejected / Work input
- C. Heat absorbed / Work input
- D. Work input / Heat rejected

Answer: C

Q16. The main function of the compressor in a car AC system is to:

- A. Store refrigerant
- B. Increase pressure of refrigerant
- C. Cool the refrigerant
- D. Absorb heat from cabin

Answer: B

Q17. Which component converts high-pressure refrigerant gas into liquid?

- A. Evaporator
- B. Compressor
- C. Condenser
- D. Receiver drier

Answer: C

Q18. The expansion valve in the AC system:

- A. Increases refrigerant temperature
- B. Reduces refrigerant pressure
- C. Removes moisture
- D. Compresses gas

Answer: B

Q19. The evaporator is usually located:

- A. In front of the radiator
- B. Inside the dashboard
- C. Near the engine block

D. Under the car

Answer: B

Q20. Which component removes moisture from refrigerant?

A. Condenser

B. Receiver drier

C. Expansion valve

D. Compressor

Answer: B

Q21. The blower motor is used to:

A. Cool engine

B. Circulate air in the cabin

C. Reduce fuel consumption

D. Lubricate compressor

Answer: B

Q22. The cabin air filter is located:

A. Before the compressor

B. In air intake duct

C. Inside the condenser

D. In refrigerant pipe

Answer: B

Q23. The mode door in HVAC system controls:

A. Refrigerant flow

B. Engine speed

- C. Direction of airflow
- D. Pressure of refrigerant

Answer: C

Q24. In heating mode, warm air is produced using:

- A. Hot exhaust gases
- B. Hot engine coolant
- C. Hot compressor oil
- D. Hot radiator fan air

Answer: B

Q25. Recirculation flap helps to:

- A. Increase fuel efficiency
- B. Prevent refrigerant leakage
- C. Recirculate cabin air
- D. Increase compressor speed

Answer: C

Q26. The heater core works as:

- A. A compressor
- B. A small radiator
- C. An expansion valve
- D. A condenser

Answer: B

Q27. Hot engine coolant flows from which part to the heater core?

- A. Fuel tank

- B. Exhaust pipe
- C. Engine block / cylinder head
- D. Brake lines

Answer: C

Q28. The main source of heat for automobile heating system is:

- A. Battery
- B. Engine waste heat
- C. Outside air
- D. Exhaust muffler

Answer: B

Q29. The function of heater control valve is to:

- A. Control refrigerant pressure
- B. Control coolant flow to heater core
- C. Control speed of blower
- D. Control temperature sensor

Answer: B

Q30. The purpose of ventilation in a car is to:

- A. Heat the engine
- B. Supply fresh air
- C. Increase tyre pressure
- D. Improve acceleration

Answer: B

Q31. Which component removes dust before air enters the cabin?

- A. Expansion valve
- B. Condenser
- C. Cabin air filter
- D. Radiator

Answer: C

Q32. The blower motor in ventilation system is used to:

- A. Push refrigerant into condenser
- B. Draw in and circulate air
- C. Compress air
- D. Cool engine oil

Answer: B

Q33. The comfortable temperature range for most people is:

- A. 10–15°C
- B. 18–27°C
- C. 30–40°C
- D. 0–10°C

Answer: B

Q34. The ideal relative humidity for human comfort lies between:

- A. 10–20%
- B. 20–30%
- C. 40–60%
- D. 80–100%

Answer: C

Q35. Human comfort mainly depends on:

- A. Temperature only
- B. Humidity only
- C. Air motion only
- D. Temperature, humidity and air motion

Answer: D

Q36. High air velocity in a room causes:

- A. Better comfort
- B. Skin dryness
- C. Feeling of cold discomfort
- D. No effect

Answer: C

Q37. The comfort zone is shown on:

- A. T-S diagram
- B. P-V diagram
- C. Psychrometric chart
- D. Mollier diagram

Answer: C

Q38. Which refrigerant is most commonly used in modern car AC systems?

- A. R-12
- B. R-134a
- C. R-22
- D. R-410A

Answer: B

Q39. Which refrigerant is widely used now due to its low global warming potential?

- A. R-12
- B. R-1234yf
- C. R-404A
- D. R-717

Answer: B

Q40. Which property is important for a good refrigerant?

- A. High boiling point
- B. High toxicity
- C. High latent heat of vaporization
- D. High viscosity

Answer: C

Q41. Which refrigerant has zero ozone depletion potential?

- A. R-12
- B. R-134a
- C. R-1234yf
- D. Both B and C

Answer: D

Q42. Before charging refrigerant, the system should be:

- A. Heated
- B. Pressurized
- C. Evacuated
- D. Oiled

Answer: C

Q43. Why is vacuum created before charging refrigerant?

- A. To increase pressure
- B. To remove air and moisture
- C. To cool the pipes
- D. To test compressor speed

Answer: B

Q44. Which instrument is used to measure high and low side pressure?

- A. Thermometer
- B. Manifold gauge set
- C. Hydrometer
- D. Voltmeter

Answer: B

Q45. Overcharging refrigerant causes:

- A. Low pressure
- B. No cooling
- C. Higher system pressure
- D. Freezing of evaporator

Answer: C

Q46. The main function of the temperature control system is to:

- A. Control vehicle speed
- B. Maintain desired cabin temperature
- C. Control fuel injection

D. Reduce engine load

Answer: B

Q47. The temperature sensor in a car HVAC system senses:

A. Engine temperature

B. Outside temperature only

C. Cabin air temperature

D. Tyre temperature

Answer: C

Q48. In automatic climate control, temperature is controlled by:

A. Driver manually

B. ECU and sensors

C. Expansion valve only

D. Radiator

Answer: B

Q49. Which component controls mixed hot and cold air?

A. Compressor

B. Condenser

C. Blend door

D. Evaporator

Answer: C

Q50. The thermostat in an HVAC system is used to:

A. Control refrigerant pressure

- B. Sense cabin temperature
- C. Control compressor ON/OFF
- D. Control blower speed

Answer: C

Q51. Increasing blower speed will generally:

- A. Decrease cooling
- B. Increase cooling
- C. Stop compressor
- D. Increase humidity

Answer: B

Q52. Which component helps in dehumidification in AC?

- A. Condenser
- B. Evaporator
- C. Compressor
- D. Expansion valve

Answer: B

Q53. Dehumidification occurs when:

- A. Air passes over warm coil
- B. Air passes over cold evaporator coil
- C. Air passes through radiator
- D. Air flows at high speed

Answer: B

Q54. Moist air loses its moisture due to:

- A. Increase in pressure
- B. Condensation of vapor
- C. Increase in temperature
- D. Air compression

Answer: B

Q55. High humidity inside car cabin causes:

- A. Better comfort
- B. Faster cooling
- C. Fogging of glass
- D. Lower temperature

Answer: C

Q56. The device used to measure relative humidity is:

- A. Barometer
- B. Hygrometer
- C. Anemometer
- D. Manometer

Answer: B

Q57. Lower evaporator temperature results in:

- A. Poor humidity control
- B. Better dehumidification
- C. No cooling
- D. Compressor failure

Answer: B

Q58. The main purpose of a keyless entry system is to:

- A. Improve engine power
- B. Enable remote locking/unlocking of doors
- C. Increase fuel efficiency
- D. Control HVAC system

Answer: B

Q59. Which component sends the signal in a keyless entry system?

- A. Door actuator
- B. Car ECU
- C. Key fob (transmitter)
- D. Receiver motor

Answer: C

Q60. Keyless entry systems generally operate using:

- A. Infrared waves
- B. Bluetooth only
- C. Radio frequency signals
- D. Sound waves

Answer: C

Q61. Rolling code technology is used to:

- A. Increase signal range
- B. Reduce battery usage
- C. Prevent theft by code duplication
- D. Improve motor speed

Answer: C

Q62. The main function of an anti-theft system is to:

- A. Increase car speed
- B. Prevent unauthorized vehicle use
- C. Improve braking
- D. Improve suspension

Answer: B

Q63. An engine immobilizer works by:

- A. Locking steering wheel
- B. Cutting fuel or ignition system
- C. Locking doors
- D. Activating horn

Answer: B

Q64. Which sensor detects unauthorized entry into a car?

- A. Oxygen sensor
- B. Door sensor
- C. Temperature sensor
- D. MAF sensor

Answer: B

Q65. A vehicle immobilizer compares:

- A. Engine RPM
- B. Fuel pressure
- C. Key code with ECU data

D. Door position

Answer: C

Q66. Automatic door lock system locks doors when:

A. Car reaches certain speed

B. Engine starts

C. AC turns ON

D. Headlights turn ON

Answer: A

Q67. Automatic door locking usually activates at:

A. 5 km/h

B. 10–15 km/h

C. 40 km/h

D. 80 km/h

Answer: B

Q68. Which sensor supports automatic door locking?

A. Oxygen sensor

B. Speed sensor

C. Rain sensor

D. Temperature sensor

Answer: B

Q69. Central locking system is controlled by:

A. Radiator

B. Body Control Module (BCM)

C. Alternator

D. Fuel pump

Answer: B

Q70. The main function of a park assist system is to:

A. Increase braking power

B. Help driver park safely

C. Increase engine RPM

D. Boost battery power

Answer: B

Q71. Park assist system commonly uses:

A. Temperature sensors

B. Ultrasonic sensors

C. Pressure sensors

D. Oxygen sensors

Answer: B

Q72. Park assist warning is given by:

A. Engine sound

B. Dashboard lights only

C. Beeps and display

D. Horn only

Answer: C

Q73. Park assist sensors are mounted on:

A. Roof

- B. Side mirrors
- C. Front and rear bumpers
- D. Inside tyres

Answer: C

Q74. Automatic headlight dimming prevents:

- A. Battery discharge
- B. Dazzling of oncoming vehicles
- C. Engine overheating
- D. Fuel loss

Answer: B

Q75. Automatic headlight dimming works based on:

- A. Vehicle speed
- B. Ambient light and oncoming light
- C. Engine temperature
- D. Steering angle

Answer: B

Q76. Which sensor is used for automatic headlight dimming?

- A. Ultrasonic sensor
- B. Light sensor
- C. Oxygen sensor
- D. Speed sensor

Answer: B

Q77. Headlights switch from high beam to:

- A. Parking light
- B. Fog light
- C. Low beam
- D. OFF

Answer: C

Q78. GPS stands for:

- A. Global Position Sensor
- B. Global Position System
- C. General Position Satellite
- D. Geographical Position System

Answer: B

Q79. GPS is used for:

- A. Engine tuning
- B. Vehicle location tracking
- C. Fuel injection
- D. Airbag deployment

Answer: B

Q80. GPRS stands for:

- A. Global Packet Radio Service
- B. General Packet Routing System
- C. Global Position Radio Service
- D. General Position Routing System

Answer: A

Q81. GPS requires minimum how many satellites?

- A. 1
- B. 2
- C. 3
- D. 4

Answer: D

Q82. Which system works without mobile network?

- A. GPRS
- B. Bluetooth
- C. GPS
- D. Wi-Fi

Answer: C

Q1. The primary purpose of an automobile body is to:

- A. Increase engine efficiency
- B. Carry passengers and payload safely
- C. Reduce rolling resistance
- D. Improve fuel injection

Answer: B

Q2. The term “vehicle overhang” refers to:

- A. Distance between wheels
- B. Distance between front and rear axle
- C. Portion of body beyond wheelbase
- D. Height of the vehicle body

Answer: C

Q3. Which body construction offers better crash energy absorption?

- A. Ladder frame
- B. Body-on-frame
- C. Monocoque
- D. Tubular frame

Answer: C

Q4. Which parameter directly affects vehicle stability during cornering?

- A. Body color
- B. Center of gravity height
- C. Engine displacement
- D. Fuel type

Answer: B

Q5. A semi-monocoque body mainly uses:

- A. Wooden frame
- B. Separate chassis
- C. Reinforced sheet metal panels
- D. Plastic body shell

Answer: C

Q6. Which material is preferred for crumple zones?

- A. Cast iron
- B. High carbon steel
- C. Mild steel
- D. Brittle alloys

Answer: C

Q7. Which manufacturing process is commonly used for body panel shaping?

- A. Forging
- B. Casting
- C. Press forming
- D. Extrusion

Answer: C

Q8. Which defect is most likely after poor accidental repair?

- A. Increased torque
- B. Misalignment of body panels
- C. Better aerodynamics
- D. Reduced vibration

Answer: B

Q9. Which body part contributes maximum aerodynamic drag?

- A. Roof
- B. Front profile
- C. Doors
- D. Underbody

Answer: B

Q10. Streamlining of a vehicle body mainly improves:

- A. Cabin comfort
- B. Engine power

C. Fuel efficiency at high speed

D. Brake performance

Answer: C

Q11. Rolling resistance mainly depends on:

A. Engine speed

B. Tyre pressure and road surface

C. Air density

D. Vehicle color

Answer: B

Q12. Air resistance increases with:

A. Square of speed

B. Linear speed

C. Vehicle weight

D. Road gradient

Answer: A

Q13. Gradient resistance acts when vehicle:

A. Accelerates

B. Brakes

C. Moves on inclined road

D. Moves on flat road

Answer: C

Q14. Tractive effort must overcome:

A. Only rolling resistance

- B. Only air resistance
- C. All motion resistances
- D. Engine losses only

Answer: C

Q15. Which motion causes side-to-side tilting of vehicle body?

- A. Pitching
- B. Bouncing
- C. Rolling
- D. Yaw

Answer: C

Q16. Yaw motion occurs about:

- A. Longitudinal axis
- B. Vertical axis
- C. Lateral axis
- D. Wheel axis

Answer: B

Q17. Bouncing is mainly due to:

- A. Poor steering
- B. Uneven road surface
- C. Engine imbalance
- D. Brake failure

Answer: B

Q18. Sway is most noticeable during:

- A. Straight motion
- B. Sudden lane change
- C. Constant speed driving
- D. Engine idling

Answer: B

Q19. Which resistance exists even when vehicle is stationary?

- A. Rolling resistance
- B. Air resistance
- C. Gradient resistance
- D. Static resistance

Answer: C

Q20. Lower center of gravity improves:

- A. Fuel consumption
- B. Vehicle handling
- C. Engine power
- D. Brake wear

Answer: B

Q21. Which accessory improves aerodynamics?

- A. Mud flap
- B. Roof carrier
- C. Spoiler
- D. Side step

Answer: C

Q22. Vehicle drag coefficient depends on:

- A. Engine size
- B. Body shape
- C. Fuel quality
- D. Tyre size

Answer: B

Q23. Which panel protects engine compartment from cabin?

- A. Bonnet
- B. Firewall
- C. Fender
- D. Cowl

Answer: B

Q24. Galvanization of body panels is done to:

- A. Increase strength
- B. Improve appearance
- C. Prevent corrosion
- D. Reduce weight

Answer: C

Q25. Which coating is applied first during body painting?

- A. Clear coat
- B. Base coat
- C. Primer
- D. Enamel

Answer: C

Q26. Underbody coating is mainly applied to:

- A. Improve mileage
- B. Reduce corrosion
- C. Increase weight
- D. Reduce engine noise

Answer: B

Q27. Which body type offers maximum cargo space?

- A. Coupe
- B. Sedan
- C. Station wagon
- D. Convertible

Answer: C

Q28. Accident repair quality affects:

- A. Engine efficiency only
- B. Vehicle safety and alignment
- C. Fuel type
- D. Gear ratio

Answer: B

Q29. Spot welding is commonly used for:

- A. Engine block
- B. Body panel joining
- C. Suspension arms

D. Gear casing

Answer: B

Q30. Which metal offers best strength-to-weight ratio?

A. Cast iron

B. Mild steel

C. Aluminum alloy

D. Copper

Answer: C

Q31. Body rigidity helps in:

A. Better noise insulation

B. Improved handling and safety

C. Higher fuel consumption

D. Lower torque

Answer: B

Q32. Vehicle stability is least affected by:

A. Wheelbase

B. Track width

C. Body color

D. Center of gravity

Answer: C

Q33. Aerodynamic lift mainly affects:

A. Braking

B. Cornering stability

C. Engine cooling

D. Fuel injection

Answer: B

Q34. Which resistance dominates at low speed?

A. Air resistance

B. Rolling resistance

C. Gradient resistance

D. Wind resistance

Answer: B

Q35. Which body material reduces overall vehicle weight?

A. Cast iron

B. Steel

C. Aluminum

D. Brass

Answer: C

Q36. Which body structure improves passenger safety?

A. Rigid frame only

B. Crumple zone design

C. Thin panels

D. Open structure

Answer: B

Q37. Vehicle pitching occurs during:

A. Sudden acceleration or braking

B. Cornering

C. Side wind

D. Idling

Answer: A

Q38. Which force keeps tyres in contact with road?

A. Drag force

B. Traction

C. Lift force

D. Centrifugal force

Answer: B

Q39. Which shape offers minimum air drag?

A. Cubical

B. Rectangular

C. Streamlined

D. Cylindrical

Answer: C

Q40. Increased frontal area causes:

A. Lower air resistance

B. Higher drag force

C. Better stability

D. Lower fuel consumption

Answer: B

Q41. Which parameter affects tractive effort most?

- A. Tyre-road friction
- B. Paint quality
- C. Cabin volume
- D. Seat arrangement

Answer: A

Q42. Body accessories should not:

- A. Increase drag excessively
- B. Improve comfort
- C. Improve safety
- D. Improve utility

Answer: A

Q43. Which motion causes nose left-right movement?

- A. Pitch
- B. Roll
- C. Yaw
- D. Bounce

Answer: C

Q44. Vehicle resistance always opposes:

- A. Engine torque
- B. Vehicle motion
- C. Fuel injection
- D. Wheel rotation

Answer: B

Q45. Better streamlining mainly benefits:

- A. City driving
- B. Highway driving
- C. Parking
- D. Idling

Answer: B

Q46. Which body material is recyclable and lightweight?

- A. Steel
- B. Aluminum
- C. Cast iron
- D. Lead

Answer: B

Q47. Which panel reduces splash from wheels?

- A. Bonnet
- B. Mudguard
- C. Roof
- D. Door

Answer: B

Q48. Which resistance depends on slope angle?

- A. Rolling
- B. Air
- C. Gradient
- D. Tractive

Answer: C

Q49. Which force enables vehicle acceleration?

- A. Drag
- B. Resistance
- C. Traction
- D. Lift

Answer: C

Q50. Automobile body design directly influences:

- A. Gear ratios
- B. Engine firing order
- C. Safety and efficiency
- D. Fuel octane number

Answer: C

Q51. The main drawback of carbureted SI engines is:

- A. High fuel pressure requirement
- B. Poor fuel-air mixture control
- C. Complex electronics
- D. High initial cost

Answer: B

Q52. MPFI system injects fuel:

- A. Into carburetor
- B. Into exhaust manifold
- C. Near each intake valve

D. Directly into cylinder

Answer: C

Q53. Throttle Body Injection (TBI) is similar to:

A. Diesel injection

B. Carburetor system

C. Direct injection

D. CRDI

Answer: B

Q54. Port Fuel Injection (PFI) improves:

A. Engine weight

B. Fuel atomization

C. Cooling loss

D. Mechanical friction

Answer: B

Q55. MPFI system is controlled by:

A. Mechanical governor

B. ECU

C. Fuel pump only

D. Ignition coil

Answer: B

Q56. Which sensor measures throttle opening?

A. MAP sensor

B. TPS

C. Oxygen sensor

D. Knock sensor

Answer: B

Q57. Oxygen sensor is mounted in:

A. Intake manifold

B. Fuel rail

C. Exhaust manifold

D. Cylinder head

Answer: C

Q58. MAP sensor measures:

A. Air velocity

B. Manifold pressure

C. Fuel temperature

D. Coolant level

Answer: B

Q59. MAF sensor directly measures:

A. Air mass entering engine

B. Fuel quantity

C. Exhaust pressure

D. Engine speed

Answer: A

Q60. Knock sensor detects:

- A. Engine overheating
- B. Detonation
- C. Fuel leakage
- D. Low oil pressure

Answer: B

Q61. CRDI stands for:

- A. Controlled Rail Diesel Injection
- B. Common Rail Direct Injection
- C. Constant Rail Diesel Ignition
- D. Central Rail Direct Injection

Answer: B

Q62. The main advantage of CRDI engine is:

- A. Low injection pressure
- B. Mechanical simplicity
- C. Precise fuel control
- D. Carburetor use

Answer: C

Q63. In CRDI system, fuel pressure is generated by:

- A. Injector
- B. Fuel tank
- C. High-pressure pump
- D. ECU

Answer: C

Q64. Common rail acts as:

- A. Fuel return line
- B. Fuel storage and distributor
- C. Injector holder
- D. Pressure relief valve

Answer: B

Q65. CRDI injectors are operated by:

- A. Mechanical cam
- B. ECU-controlled solenoid
- C. Centrifugal force
- D. Vacuum pressure

Answer: B

Q66. Injection pressure in CRDI engines can exceed:

- A. 100 bar
- B. 300 bar
- C. 1000 bar
- D. 10 bar

Answer: C

Q67. Pilot injection in CRDI engines helps to:

- A. Increase noise
- B. Reduce knocking
- C. Reduce power
- D. Increase emissions

Answer: B

Q68. Multiple injections per cycle result in:

- A. Rough engine operation
- B. Better combustion control
- C. Fuel wastage
- D. Injector damage

Answer: B

Q69. CRDI engines are mostly used in:

- A. Petrol cars
- B. Two-wheelers
- C. Diesel vehicles
- D. Electric vehicles

Answer: C

Q70. CRDI system improves:

- A. Emissions and efficiency
- B. Engine size
- C. Vehicle weight
- D. Fuel viscosity

Answer: A

Q71. VGT stands for:

- A. Variable Gear Transmission
- B. Variable Geometry Turbocharger
- C. Variable Gas Technology
- D. Variable Gradient Turbine

Answer: B

Q72. VGT improves engine performance by:

- A. Controlling exhaust gas flow
- B. Reducing fuel pressure
- C. Cooling intake air
- D. Increasing engine size

Answer: A

Q73. VGT reduces:

- A. Turbo lag
- B. Fuel injection
- C. Compression ratio
- D. Engine torque

Answer: A

Q74. VVT system controls:

- A. Fuel pressure
- B. Ignition timing
- C. Valve opening timing
- D. Piston stroke

Answer: C

Q75. Main benefit of VVT is:

- A. Reduced engine speed
- B. Improved efficiency and power

C. Increased emissions

D. Higher friction

Answer: B

Q76. GDI stands for:

A. Gasoline Direct Injection

B. Gas Direct Ignition

C. General Diesel Injection

D. Gasoline Dual Injection

Answer: A

Q77. In GDI engines, fuel is injected:

A. In intake manifold

B. In carburetor

C. Directly into cylinder

D. In exhaust port

Answer: C

Q78. Stratified charge combustion helps in:

A. High fuel consumption

B. Lean burn operation

C. Engine overheating

D. Knocking

Answer: B

Q79. GDI engines mainly improve:

A. Vehicle weight

B. Fuel economy

C. Noise level

D. Lubrication

Answer: B

Q80. GDI engines require:

A. Low pressure pump only

B. High pressure fuel system

C. Carburetor

D. Mechanical governor

Answer: B

Q81. EGR stands for:

A. Engine Gas Reduction

B. Exhaust Gas Recirculation

C. Emission Gas Regulation

D. Exhaust Gas Release

Answer: B

Q82. EGR reduces:

A. CO emissions

B. HC emissions

C. NOx emissions

D. SO2 emissions

Answer: C

Q83. EGR works by:

- A. Increasing combustion temperature
- B. Reducing oxygen concentration
- C. Increasing air flow
- D. Increasing fuel flow

Answer: B

Q84. PCV system prevents:

- A. Fuel leakage
- B. Oil sludge formation
- C. Brake failure
- D. Injector clogging

Answer: B

Q85. Evaporative emission control system reduces:

- A. Exhaust smoke
- B. Fuel vapor loss
- C. Engine noise
- D. Oil consumption

Answer: B

Q86. Main advantage of electric vehicles is:

- A. High emissions
- B. Zero tailpipe emissions
- C. High noise
- D. Complex gearbox

Answer: B

Q87. EV propulsion system uses:

- A. Internal combustion engine
- B. Electric motor
- C. Turbine
- D. Hydraulic pump

Answer: B

Q88. Most commonly used EV battery is:

- A. Lead acid
- B. Nickel cadmium
- C. Lithium-ion
- D. Zinc air

Answer: C

Q89. Battery Management System (BMS) is used to:

- A. Increase vehicle speed
- B. Monitor and protect battery
- C. Charge fuel
- D. Reduce vehicle weight

Answer: B

Q90. Regenerative braking converts:

- A. Heat to sound
- B. Electrical energy to heat
- C. Kinetic energy to electrical energy
- D. Chemical energy to heat

Answer: C

Q91. Electric motors in EVs are preferred because they:

- A. Require gearboxes
- B. Provide instant torque
- C. Produce noise
- D. Use fuel

Answer: B

Q92. Charging infrastructure for EVs includes:

- A. Fuel pumps
- B. Charging stations
- C. Carburetors
- D. Injectors

Answer: B

Q93. EVs generally have:

- A. Higher maintenance than IC engines
- B. Fewer moving parts
- C. Complex transmissions
- D. Exhaust systems

Answer: B

Q94. Range of EV mainly depends on:

- A. Vehicle color
- B. Battery capacity
- C. Tyre size

D. Headlamp type

Answer: B

Q95. One limitation of EVs is:

A. High torque

B. Quiet operation

C. Charging time

D. Zero emissions

Answer: C

Q96. Lithium-ion batteries are preferred due to:

A. High weight

B. Low energy density

C. High energy density

D. Memory effect

Answer: C

Q97. Thermal management of EV battery is important to:

A. Improve aesthetics

B. Prevent overheating

C. Increase noise

D. Increase voltage

Answer: B

Q98. EV layout eliminates:

A. Electric motor

B. Fuel tank

- C. Battery pack
- D. Power electronics

Answer: B

Q99. Electric motor efficiency is generally:

- A. Lower than IC engine
- B. Same as IC engine
- C. Higher than IC engine
- D. Negligible

Answer: C

Q100. EVs contribute to:

- A. Higher pollution
- B. Sustainable transportation
- C. Increased noise
- D. Fuel dependency

Answer: B

Q101. HVAC system in a car is mainly designed to:

- A. Cool the engine
- B. Improve fuel economy
- C. Maintain cabin comfort
- D. Control exhaust emissions

Answer: C

Q102. The term HVAC stands for:

- A. High Velocity Air Cooling

B. Heating, Ventilation and Air Conditioning

C. Hot Vapor Air Circulation

D. Hydraulic Ventilation and Cooling

Answer: B

Q103. Refrigeration in car AC system works on:

A. Heat addition principle

B. Heat absorption principle

C. Heat radiation principle

D. Heat conduction principle

Answer: B

Q104. The refrigerant absorbs heat in:

A. Condenser

B. Compressor

C. Evaporator

D. Receiver drier

Answer: C

Q105. The main objective of ventilation is to:

A. Reduce engine heat

B. Supply fresh air to cabin

C. Increase cooling capacity

D. Improve fuel efficiency

Answer: B

Q106. Vapour compression cycle consists of how many main components?

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

Answer: C

Q107. Which component compresses low-pressure refrigerant?

- A. Condenser
- B. Compressor
- C. Evaporator
- D. Expansion valve

Answer: B

Q108. Heat is rejected to atmosphere in:

- A. Evaporator
- B. Compressor
- C. Condenser
- D. Receiver

Answer: C

Q109. Expansion valve causes:

- A. Increase in pressure
- B. Decrease in pressure
- C. Increase in temperature
- D. Compression of refrigerant

Answer: B

Q110. Refrigerant enters the evaporator as:

- A. High-pressure liquid
- B. Low-pressure liquid
- C. High-pressure vapor
- D. Superheated vapor

Answer: B

Q111. Compressor in AC system is driven by:

- A. Electric motor only
- B. Crankshaft pulley
- C. Cooling fan
- D. Battery directly

Answer: B

Q112. Condenser is usually located:

- A. Inside dashboard
- B. Under car floor
- C. In front of radiator
- D. Near fuel tank

Answer: C

Q113. Receiver-drier performs which function?

- A. Compress refrigerant
- B. Absorb heat
- C. Remove moisture and impurities
- D. Control air flow

Answer: C

Q114. Evaporator is installed:

- A. In engine compartment
- B. Inside passenger cabin
- C. Near exhaust system
- D. Below fuel tank

Answer: B

Q115. Expansion valve controls:

- A. Air flow rate
- B. Refrigerant flow rate
- C. Blower speed
- D. Compressor speed

Answer: B

Q116. Car heating system utilizes heat from:

- A. Exhaust gases
- B. Engine coolant
- C. Battery
- D. Radiator fan

Answer: B

Q117. Heater core functions similar to:

- A. Condenser
- B. Evaporator
- C. Radiator

D. Compressor

Answer: C

Q118. Heater control valve regulates:

A. Refrigerant pressure

B. Coolant flow to heater core

C. Air velocity

D. Blower motor speed

Answer: B

Q119. Heating system is most effective when:

A. Engine is cold

B. Engine reaches operating temperature

C. AC is OFF

D. Vehicle is stationary

Answer: B

Q120. Heating system does NOT require:

A. Coolant circulation

B. Heater core

C. Compressor

D. Blower motor

Answer: C

Q121. Blower motor is used to:

A. Compress refrigerant

B. Circulate air inside cabin

- C. Cool condenser
- D. Control humidity

Answer: B

Q122. Cabin air filter removes:

- A. Moisture
- B. Dust and pollen
- C. Refrigerant
- D. Exhaust gases

Answer: B

Q123. Fresh air mode allows:

- A. Cabin air circulation
- B. Outside air intake
- C. No air circulation
- D. Only hot air

Answer: B

Q124. Recirculation mode is preferred:

- A. During heavy traffic
- B. During rain
- C. During parking
- D. During engine warm-up

Answer: A

Q125. Ventilation system mainly improves:

- A. Engine efficiency
- B. Passenger comfort
- C. Fuel quality
- D. Brake performance

Answer: B

Q126. Human comfort depends mainly on:

- A. Temperature only
- B. Humidity only
- C. Temperature, humidity and air motion
- D. Noise level

Answer: C

Q127. Comfortable temperature inside car cabin is:

- A. 5–10°C
- B. 15–18°C
- C. 18–27°C
- D. 30–40°C

Answer: C

Q128. Ideal relative humidity for comfort is:

- A. 10–20%
- B. 20–30%
- C. 40–60%
- D. 80–90%

Answer: C

Q129. High humidity causes:

- A. Better cooling
- B. Faster sweat evaporation
- C. Discomfort and fogging
- D. No effect

Answer: C

Q130. Comfort zone is represented using:

- A. PV diagram
- B. TS diagram
- C. Psychrometric chart
- D. Mollier diagram

Answer: C

Q131. Refrigerant used should have:

- A. High toxicity
- B. High flammability
- C. Chemical stability
- D. High viscosity

Answer: C

Q132. Eco-friendly refrigerants are selected based on:

- A. Color
- B. Cost only
- C. Low ODP and GWP
- D. Odor

Answer: C

Q133. R-1234yf is preferred due to:

- A. High pressure
- B. High toxicity
- C. Low global warming potential
- D. High cost

Answer: C

Q134. Refrigerant leakage is dangerous because it:

- A. Increases cooling
- B. Reduces oxygen in closed spaces
- C. Improves AC efficiency
- D. Reduces noise

Answer: B

Q135. Refrigerant should never be released into:

- A. Condenser
- B. Receiver
- C. Atmosphere
- D. Compressor

Answer: C

Q136. Refrigerant charging is done after:

- A. Heating the system
- B. Evacuating the system
- C. Removing compressor
- D. Opening condenser

Answer: B

Q137. Vacuum pump is used to:

- A. Add refrigerant
- B. Remove air and moisture
- C. Increase pressure
- D. Test cooling

Answer: B

Q138. Overcharging refrigerant leads to:

- A. Low pressure
- B. Compressor overload
- C. Improved cooling
- D. No effect

Answer: B

Q139. Under-charging refrigerant results in:

- A. Excess cooling
- B. Reduced cooling
- C. Higher pressure
- D. Compressor damage

Answer: B

Q140. Temperature control system maintains:

- A. Engine temperature
- B. Cabin temperature

- C. Fuel temperature
- D. Battery temperature

Answer: B

Q141. Dehumidification occurs when air passes over:

- A. Hot heater core
- B. Cold evaporator
- C. Condenser
- D. Radiator

Answer: B

Q142. Moisture removal prevents:

- A. Engine overheating
- B. Glass fogging
- C. Fuel loss
- D. Battery damage

Answer: B

Q143. Humidity control improves:

- A. Engine power
- B. Passenger comfort
- C. Tyre life
- D. Fuel quality

Answer: B

Q144. Lower evaporator temperature results in:

- A. Poor cooling

- B. Better dehumidification
- C. Higher humidity
- D. Compressor failure

Answer: B

Q145. HVAC system integrates heating, cooling and:

- A. Ignition
- B. Ventilation
- C. Fuel injection
- D. Braking

Answer: B

Q146. Keyless entry systems mainly improve:

- A. Engine performance
- B. Driver convenience
- C. Fuel efficiency
- D. Brake response

Answer: B

Q147. The transmitter used in keyless entry is powered by:

- A. Vehicle battery
- B. Alternator
- C. Coin cell battery
- D. ECU

Answer: C

Q148. Keyless entry receiver is generally mounted:

- A. Inside key fob
- B. Inside BCM
- C. Near door actuator
- D. Near fuel tank

Answer: B

Q149. Rolling code system enhances:

- A. Signal strength
- B. Security against hacking
- C. Door motor speed
- D. Battery life

Answer: B

Q150. Immobilizer system prevents:

- A. Door unlocking
- B. Unauthorized engine start
- C. Fuel filling
- D. Battery charging

Answer: B

Q151. Automatic door lock system is activated based on:

- A. Engine RPM
- B. Vehicle speed
- C. Fuel level
- D. AC operation

Answer: B

Q152. Central locking system locks:

- A. Only driver door
- B. All doors simultaneously
- C. Bonnet only
- D. Boot only

Answer: B

Q153. The main controller of central locking system is:

- A. ECU
- B. BCM
- C. Alternator
- D. Fuse box

Answer: B

Q154. Automatic unlocking in accidents is triggered by:

- A. Speed sensor
- B. Airbag control unit
- C. ABS sensor
- D. GPS module

Answer: B

Q155. Door actuator converts:

- A. Electrical energy into mechanical motion
- B. Mechanical motion into electrical energy
- C. Heat into motion
- D. Pressure into voltage

Answer: A

Q156. Park assist system helps mainly during:

- A. Highway driving
- B. Overtaking
- C. Parking maneuver
- D. Acceleration

Answer: C

Q157. Park assist sensors operate on:

- A. Infrared waves
- B. Ultrasonic waves
- C. Radio waves
- D. Light waves

Answer: B

Q158. The distance is measured by park assist using:

- A. Signal frequency change
- B. Echo time delay
- C. Voltage variation
- D. Resistance change

Answer: B

Q159. Park assist warning intensity increases when:

- A. Speed increases
- B. Distance decreases
- C. Engine heats

D. Fuel reduces

Answer: B

Q160. Park assist improves:

A. Fuel efficiency

B. Parking safety

C. Engine power

D. Gear shifting

Answer: B

Q161. Automatic headlight dimming avoids:

A. Battery drain

B. Driver fatigue

C. Dazzling effect

D. Headlamp heating

Answer: C

Q162. Automatic headlight dimming is based on:

A. Engine speed

B. Ambient light intensity

C. Fuel pressure

D. Brake force

Answer: B

Q163. Photodiode sensor is used to detect:

A. Temperature

B. Pressure

C. Light

D. Humidity

Answer: C

Q164. High beam is automatically changed to low beam when:

A. Road is empty

B. Oncoming vehicle is detected

C. Speed increases

D. Rain occurs

Answer: B

Q165. Automatic headlight ON/OFF system improves:

A. Driving convenience

B. Fuel economy

C. Engine cooling

D. Tyre life

Answer: A

Q166. GPS helps in:

A. Engine diagnostics

B. Vehicle navigation

C. Brake control

D. Fuel injection

Answer: B

Q167. GPS works using:

A. Mobile towers

- B. Satellites
- C. Bluetooth signals
- D. Wi-Fi network

Answer: B

Q168. Minimum satellites required for accurate GPS position are:

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

Answer: C

Q169. GPRS is mainly used for:

- A. Offline maps
- B. Internet-based data transfer
- C. Satellite communication
- D. Voice calls only

Answer: B

Q170. GPS system accuracy depends on:

- A. Vehicle speed
- B. Number of satellites
- C. Fuel type
- D. Battery voltage

Answer: B

Q171. Seat belts are classified as:

- A. Active safety
- B. Passive safety
- C. Electronic safety
- D. Structural safety

Answer: B

Q172. Airbags deploy during:

- A. Normal braking
- B. Minor collision
- C. Severe impact
- D. Engine overheating

Answer: C

Q173. Airbag sensors detect:

- A. Vehicle speed
- B. Sudden deceleration
- C. Fuel leakage
- D. Engine temperature

Answer: B

Q174. ABS prevents:

- A. Brake overheating
- B. Wheel locking
- C. Fuel wastage
- D. Engine stall

Answer: B

Q175. ABS mainly improves:

- A. Straight-line speed
- B. Steering control during braking
- C. Engine torque
- D. Suspension travel

Answer: B

Q176. Electronic Stability Control (ESC) prevents:

- A. Engine knocking
- B. Skidding
- C. Overheating
- D. Brake fading

Answer: B

Q177. ESC works using:

- A. Engine sensors only
- B. Brake and yaw sensors
- C. Fuel injectors
- D. AC sensors

Answer: B

Q178. Collapsible steering column is used to:

- A. Improve steering feel
- B. Absorb impact during crash
- C. Increase rigidity
- D. Reduce weight

Answer: B

Q179. Crumple zones are designed to:

- A. Increase stiffness
- B. Absorb collision energy
- C. Improve aerodynamics
- D. Reduce drag

Answer: B

Q180. Central locking contributes to:

- A. Passenger safety
- B. Engine efficiency
- C. Fuel economy
- D. Suspension performance

Answer: A

Q181. Active safety systems aim to:

- A. Reduce injury after crash
- B. Prevent accidents
- C. Improve aesthetics
- D. Reduce emissions

Answer: B

Q182. Passive safety systems are effective:

- A. Before accident
- B. During accident
- C. After engine start

D. During parking

Answer: B

Q183. Safety devices increase:

A. Vehicle cost only

B. Driving risk

C. Occupant protection

D. Engine load

Answer: C

Q184. Advanced safety systems rely heavily on:

A. Mechanical linkages

B. Sensors and electronics

C. Carburetors

D. Manual controls

Answer: B

Q185. Combination of ABS and ESC improves:

A. Ride comfort

B. Vehicle stability

C. Engine output

D. Fuel quality

Answer: B

Q186. The primary function of an oxygen sensor is to:

A. Measure engine temperature

B. Monitor air-fuel ratio

- C. Detect engine speed
- D. Measure fuel pressure

Answer: B

Q187. Oxygen sensor output is generally in the form of:

- A. Current
- B. Resistance
- C. Voltage
- D. Frequency

Answer: C

Q188. Engine coolant temperature sensor is usually a:

- A. Capacitive sensor
- B. Hall effect sensor
- C. Thermistor
- D. Piezo sensor

Answer: C

Q189. Intake air temperature sensor mainly affects:

- A. Ignition timing
- B. Fuel quantity calculation
- C. Brake operation
- D. Gear shifting

Answer: B

Q190. Throttle Position Sensor (TPS) detects:

- A. Air velocity
- B. Throttle angle
- C. Engine temperature
- D. Fuel pressure

Answer: B

Q191. MAP sensor measures:

- A. Mass air flow
- B. Absolute intake manifold pressure
- C. Fuel pressure
- D. Exhaust pressure

Answer: B

Q192. Vehicle Speed Sensor (VSS) provides input to:

- A. Fuel pump only
- B. Speedometer and ECU
- C. Battery charging system
- D. Ignition coil

Answer: B

Q193. MAF sensor malfunction can cause:

- A. Brake failure
- B. Poor fuel economy
- C. Steering stiffness
- D. AC failure

Answer: B

Q194. Knock sensor is used to protect engine from:

- A. Overheating
- B. Detonation
- C. Oil leakage
- D. Valve damage

Answer: B

Q195. Crankshaft Position Sensor helps ECU to determine:

- A. Engine load
- B. Piston position and speed
- C. Fuel pressure
- D. Exhaust composition

Answer: B

Q196. Multimeter is used in sensor testing to measure:

- A. Only voltage
- B. Only resistance
- C. Voltage, current and resistance
- D. Pressure only

Answer: C

Q197. An open-circuit sensor will show:

- A. Zero resistance
- B. Infinite resistance
- C. Normal voltage
- D. Low temperature

Answer: B

Q198. A faulty TPS can cause:

- A. Hard steering
- B. Hesitation during acceleration
- C. Battery discharge
- D. Brake locking

Answer: B

Q199. Incorrect sensor signals may lead to:

- A. Wrong ECU decisions
- B. Improved mileage
- C. Higher engine power
- D. Reduced emissions

Answer: A

Q200. Sensor failure is commonly detected using:

- A. Screwdriver
- B. Scan tool
- C. Hammer
- D. Feeler gauge

Answer: B

Q201. Actuators convert:

- A. Mechanical energy into electrical
- B. Electrical signals into mechanical action
- C. Heat into electricity
- D. Pressure into temperature

Answer: B

Q202. Fuel injector is an example of:

- A. Sensor
- B. Actuator
- C. Controller
- D. Switch

Answer: B

Q203. Injector opening is controlled by:

- A. Fuel pump
- B. ECU
- C. Battery
- D. Ignition switch

Answer: B

Q204. Injector “click” sound test checks:

- A. Fuel quality
- B. Electrical operation of injector
- C. Fuel pressure
- D. Spray pattern

Answer: B

Q205. Injector resistance is measured using:

- A. Ammeter
- B. Ohmmeter

C. Voltmeter

D. Pressure gauge

Answer: B

Q206. OBD stands for:

A. On-Board Device

B. On-Board Diagnostics

C. Open Board Diagnostics

D. Output Based Diagnostics

Answer: B

Q207. OBD-II system monitors:

A. Only engine speed

B. Only emissions

C. Vehicle systems and emissions

D. Battery condition only

Answer: C

Q208. Malfunction Indicator Lamp (MIL) glows when:

A. Fuel tank is empty

B. A fault is detected by ECU

C. Engine is cold

D. Headlights are ON

Answer: B

Q209. OBD-II connector is used to:

A. Charge battery

- B. Read fault codes
- C. Tune engine mechanically
- D. Replace ECU

Answer: B

Q210. Flash codes were used in:

- A. OBD-III
- B. Pre-OBD systems
- C. EV systems
- D. GPS systems

Answer: B

Q211. DTCs are standardized under:

- A. ISO standards
- B. SAE J2012
- C. BS standards
- D. AIS standards

Answer: B

Q212. A 5-digit DTC consists of:

- A. Letters only
- B. Numbers only
- C. Letters and numbers
- D. Symbols only

Answer: C

Q213. First letter of DTC indicates:

- A. Severity of fault
- B. Vehicle manufacturer
- C. System affected
- D. Repair cost

Answer: C

Q214. DTC starting with “P” relates to:

- A. Body system
- B. Chassis system
- C. Powertrain
- D. Network system

Answer: C

Q215. DTC starting with “B” indicates fault in:

- A. Engine
- B. Body system
- C. Braking system
- D. Transmission

Answer: B

Q216. ECU stores DTCs in:

- A. RAM
- B. ROM
- C. Non-volatile memory
- D. Cache memory

Answer: C

Q217. Clearing DTCs without repair may:

- A. Permanently solve fault
- B. Hide actual problem temporarily
- C. Improve engine power
- D. Reduce fuel consumption

Answer: B

Q218. Diagnostic scan tool communicates with ECU using:

- A. Mechanical link
- B. Pneumatic line
- C. Digital communication protocol
- D. Hydraulic system

Answer: C

Q219. Proper diagnosis reduces:

- A. Repair accuracy
- B. Repair time and cost
- C. Engine efficiency
- D. Vehicle safety

Answer: B

Q220. Correct diagnosis mainly depends on:

- A. Guesswork
- B. Sensor data interpretation
- C. Trial-and-error replacement
- D. Vehicle color

Answer: B

1. Which refrigerant replaced R-134a in most modern car HVAC systems due to environmental concerns?

- A) R-12
- B) R-22
- C) R-1234yf
- D) R-410A

✔ **Answer: C**

2. The main environmental problem caused by old refrigerants like R-12 was:

- A) Global warming only
- B) Ozone layer depletion
- C) Acid rain
- D) Water pollution

✔ **Answer: B**

3. Which gas from car AC systems contributes to global warming?

- A) Oxygen
- B) Carbon dioxide
- C) Refrigerant gas
- D) Nitrogen

✔ **Answer: C**

4. The Global Warming Potential (GWP) of R-1234yf is:

- A) Very high
- B) Moderate
- C) Very low
- D) Zero

✔ **Answer: C**

5. Which safety device protects the AC system from over-pressure?

- A) Evaporator
- B) Condenser

C) Pressure relief valve

D) Receiver dryer

✓ **Answer: C**

6. Which of the following is a personal safety precaution for AC servicing?

A) Wearing loose clothes

B) Avoiding goggles

C) Wearing gloves and safety glasses

D) Disconnecting battery is unnecessary

✓ **Answer: C**

7. Refrigerant leaks are dangerous mainly because they:

A) Smell bad

B) Are expensive

C) Reduce oxygen level in closed areas

D) Make engine noisy

✓ **Answer: C**

8. Which tool is used to detect refrigerant leakage?

A) Thermostat

B) Manifold gauge

C) Leak detector

D) Ammeter

✓ **Answer: C**

9. Why should refrigerant never be vented into the atmosphere?

A) It damages compressor

B) It increases cooling

C) It harms the environment

D) It reduces airflow

✓ **Answer: C**

10. Which component removes moisture from the refrigerant?

A) Condenser

B) Receiver-drier

C) Compressor

D) Expansion valve

✓ **Answer: B**

11. Refrigeration is the process of:

A) Heating a space

B) Cooling a space below atmospheric temperature

C) Removing humidity

D) Supplying hot air

✓ **Answer: B**

12. The working fluid in refrigeration is called:

A) Coolant

B) Refrigerant

C) Lubricant

D) Water

✓ **Answer: B**

13. In an air conditioning system, the main function of the evaporator is to:

A) Compress gas

B) Absorb heat

C) Reject heat

D) Pump refrigerant

✓ **Answer: B**

14. Which component increases the pressure of the refrigerant?

A) Condenser

B) Compressor

C) Evaporator

D) Expansion valve

✓ **Answer: B**

15. Air conditioning controls all except:

A) Temperature

B) Humidity

C) Air cleanliness

D) Fuel consumption

✓ **Answer: D**

16. The SI unit of refrigeration capacity is:

- A) Watt B) Joule C) Watt or kW
- D) Pascal

✓ **Answer: C**

17. The function of a condenser in an AC system is to:

- A) Absorb heat
- B) Reject heat to atmosphere
- C) Increase pressure
- D) Reduce temperature only

✓ **Answer: B**

18. The device used to measure temperature is:

- A) Hygrometer
- B) Barometer
- C) Thermometer
- D) Anemometer

✓ **Answer: C**

19. Relative humidity is defined as:

- A) Amount of dry air
- B) Amount of moisture compared to maximum moisture air can hold
- C) Air pressure difference
- D) Cooling capacity

✓ **Answer: B**

20. Air-conditioning is different from refrigeration because it also controls:

- A) Pressure
- B) Only temperature
- C) Humidity and air purity
- D) Speed of air

✓ **Answer: C**

21. The vapour compression cycle has how many main components?

- A) 2
- B) 3
- C) 4
- D) 5

✓ **Answer: C**

22. The function of the expansion valve is to:

- A) Increase pressure
- B) Decrease pressure
- C) Absorb heat
- D) Reject heat

✓ **Answer: B**

23. In which component does refrigerant absorb heat?

- A) Condenser
- B) Compressor
- C) Evaporator
- D) Expansion valve

✓ **Answer: C**

24. Which process occurs in the compressor?

- A) Heat absorption
- B) Condensation
- C) Isentropic compression
- D) Throttling

✓ **Answer: C**

25. Heat rejection occurs in the:

- A) Evaporator
- B) Compressor
- C) Condenser
- D) Expansion device

✓ **Answer: C**

26. In a vapour compression cycle, the refrigerant leaves the evaporator as:

- A) Liquid
- B) Superheated vapour
- C) Subcooled liquid
- D) Wet vapour

✓ **Answer: B**

27. The expansion process occurs at:

- A) Constant pressure
- B) Constant temperature
- C) Constant enthalpy
- D) Constant volume

✓ **Answer: C**

28. The refrigerant enters condenser as:

- A) Low pressure liquid
- B) High pressure vapour
- C) Low pressure vapour
- D) High pressure liquid

✓ **Answer: B**

29. Which cycle is used in car AC systems?

- A) Steam power cycle
- B) Vapour absorption cycle
- C) Vapour compression cycle
- D) Rankine cycle

✓ **Answer: C**

30. COP of a refrigeration system is defined as:

- A) Work done / Heat absorbed
- B) Heat rejected / Work input
- C) Heat absorbed / Work input
- D) Work input / Heat rejected

✓ **Answer: C**

1. The main function of the compressor in a car AC system is to:

- A) Store refrigerant
- B) Increase pressure of refrigerant
- C) Cool the refrigerant
- D) Absorb heat from cabin

✔ **Answer: B**

2. Which component converts high-pressure refrigerant gas into liquid?

- A) Evaporator
- B) Compressor
- C) Condenser
- D) Receiver drier

✔ **Answer: C**

3. The expansion valve in the AC system:

- A) Increases refrigerant temperature
- B) Reduces refrigerant pressure
- C) Removes moisture
- D) Compresses gas

✔ **Answer: B**

4. The evaporator is usually located:

- A) In front of the radiator
- B) Inside the dashboard
- C) Near the engine block
- D) Under the car

✔ **Answer: B**

5. Which component removes moisture from refrigerant?

- A) Condenser
- B) Receiver-drier
- C) Expansion valve
- D) Compressor

✔ **Answer: B**

6. Refrigerant in a car AC absorbs heat inside the:

- A) Condenser
- B) Compressor
- C) Evaporator
- D) Receiver drier

✓ **Answer: C**

7. Which of the following is NOT a part of a car AC system?

- A) Condenser
- B) Evaporator
- C) Fuel injector
- D) Compressor

✓ **Answer: C**

8. The blower motor is used to:

- A) Cool engine
- B) Circulate air in the cabin
- C) Reduce fuel consumption
- D) Lubricate compressor

✓ **Answer: B**

9. The cabin air filter is located:

- A) Before the compressor
- B) In air intake duct
- C) Inside the condenser
- D) In refrigerant pipe

✓ **Answer: B**

10. The mode door in HVAC system controls:

- A) Refrigerant flow
- B) Engine speed
- C) Direction of airflow
- D) Pressure of refrigerant

✓ **Answer: C**

11. In heating mode, warm air is produced using:

- A) Hot exhaust gases
- B) Hot engine coolant
- C) Hot compressor oil
- D) Hot radiator fan air

✓ **Answer: B**

12. Recirculation flap helps to:

- A) Increase fuel efficiency
- B) Prevent refrigerant leakage
- C) Recirculate cabin air
- D) Increase compressor speed

✓ **Answer: C**

13. In defrost mode, air is mainly directed towards:

- A) Rear seats
- B) Side doors
- C) Windshield
- D) Floor

✓ **Answer: C**

14. The heater core works as:

- A) A compressor
- B) A small radiator
- C) An expansion valve
- D) A condenser

✓ **Answer: B**

15. Hot engine coolant flows from which part to the heater core?

- A) Fuel tank
- B) Exhaust pipe
- C) Engine block / cylinder head
- D) Brake lines

✓ **Answer: C**

16. The main source of heat for automobile heating system is:

- A) Battery
- B) Engine waste heat
- C) Outside air
- D) Exhaust muffler

✓ **Answer: B**

17. The function of heater control valve is to:

- A) Control refrigerant pressure
- B) Control coolant flow to heater core
- C) Control speed of blower
- D) Control temperature sensor

✓ **Answer: B**

18. The purpose of ventilation in a car is to:

- A) Heat the engine
- B) Supply fresh air
- C) Increase tyre pressure
- D) Improve acceleration

✓ **Answer: B**

19. Which component removes dust before air enters the cabin?

- A) Expansion valve
- B) Condenser
- C) Cabin air filter
- D) Radiator

✓ **Answer: C**

20. The blower motor in ventilation system is used to:

- A) Push refrigerant into condenser
- B) Draw in and circulate air
- C) Compress air
- D) Cool engine oil

✓ **Answer: B**

1. The comfortable temperature range for most people is:

- A) 10–15°C
- B) 18–27°C
- C) 30–40°C
- D) 0–10°C

✓ **Answer: B**

2. The ideal relative humidity for human comfort lies between:

- A) 10–20%
- B) 20–30%
- C) 40–60%
- D) 80–100%

✓ **Answer: C**

3. High air velocity in a room causes:

- A) Better comfort
- B) Skin dryness
- C) Feeling of cold discomfort
- D) No effect

✓ **Answer: C**

4. Human comfort mainly depends on:

- A) Temperature only
- B) Humidity only
- C) Air motion only
- D) Temperature, humidity and air motion

✓ **Answer: D**

5. Which of the following reduces body heat through evaporation?

- A) Radiation
- B) Conduction
- C) Evaporation of sweat

D) Convection

✓ **Answer: C**

6. The ideal air velocity for human comfort in air conditioning is:

A) 0.1 – 0.25 m/s

B) 1 – 2 m/s

C) 4 – 5 m/s

D) 10 m/s

✓ **Answer: A**

7. High relative humidity causes:

A) Faster sweat evaporation

B) Slower sweat evaporation C

) Body cooling increases

D) No effect on comfort

✓ **Answer: B**

8. Which factor does NOT affect human comfort directly?

A) Air temperature

B) Noise level

C) Relative humidity

D) Air movement

✓ **Answer: B**

9. Human body loses maximum heat through:

A) Evaporation

B) Radiation

C) Conduction

D) Respiration

✓ **Answer: B**

10. The comfort zone is shown on:

A) T–S diagram

B) P–V diagram

C) Psychrometric chart

D) Mollier diagram

✓ **Answer: C**

11. Which refrigerant is most commonly used in modern car AC systems?

A) R-12

B) R-134a

C) R-22

D) R-410A

✓ **Answer: B**

12. Which refrigerant is widely used now due to its low global warming potential (GWP)?

A) R-12

B) R-1234yf

C) R-404A

D) R-717

✓ **Answer: B**

13. The main reason R-12 was banned is because it:

A) Is expensive

B) Causes ozone depletion

C) Has low efficiency

D) Causes corrosion

✓ **Answer: B**

14. Which property is important for a good refrigerant?

A) High boiling point

B) High toxicity

C) High latent heat of vaporization

D) High viscosity

✓ **Answer: C**

15. Which of the following refrigerants is ozone-friendly?

A) R-12

B) R-22

C) R-1234yf D) R-11 ✓ **Answer: C**

16. Which refrigerant has *zero Ozone Depletion Potential (ODP)*?

- A) R-12 B) R-134a
- C) R-1234yf
- D) Both B and C

✓ **Answer: D**

17. The chemical name of R-134a is:

- A) Dichlorodifluoromethane
- B) Tetrafluoroethane
- C) Chlorodifluoromethane
- D) Ammonia

✓ **Answer: B**

18. Which refrigerant has very low Global Warming Potential compared to R-134a?

- A) R-22
- B) R-12
- C) R-1234yf
- D) R-407C

✓ **Answer: C**

19. The refrigerant used should be:

- A) Highly flammable
- B) Highly toxic
- C) Chemically stable
- D) Highly corrosive

✓ **Answer: C**

20. Which refrigerant is non-toxic and non-flammable?

- A) R-717 (Ammonia)
- B) R-12
- C) R-134a
- D) R-600a

✓ **Answer: C**

1. Before charging refrigerant, the system should be:

- A) Heated
- B) Pressurized
- C) Evacuated
- D) Oiled

✓ **Answer: C**

2. Why is vacuum created before charging refrigerant?

- A) To increase pressure
- B) To remove air and moisture
- C) To cool the pipes
- D) To test compressor speed

✓ **Answer: B**

3. Which instrument is used to measure high and low side pressure during charging?

- A) Thermometer
- B) Manifold gauge set
- C) Hydrometer
- D) Voltmeter

✓ **Answer: B**

4. Undercharging the AC system results in:

- A) Excess cooling
- B) Compressor damage
- C) Reduced cooling effect
- D) Frost on condenser

✓ **Answer: C**

5. Overcharging the refrigerant causes:

- A) Low pressure
- B) No cooling
- C) Higher system pressure
- D) Freezing of evaporator

✓ **Answer: C**

6. Refrigerant should be charged in which state through the low-pressure side?

- A) Solid
- B) Liquid
- C) Vapor
- D) Plasma

✓ **Answer: C**

7. Which component indicates correct refrigerant level in older systems?

- A) Sight glass
- B) Thermostat
- C) Clutch coil
- D) Fan motor

✓ **Answer: A**

8. Which safety precaution is necessary during refrigerant charging?

- A) Keep system near fire
- B) Wear safety gloves and goggles
- C) Touch refrigerant directly
- D) Work in closed room

✓ **Answer: B**

9. The standard method of charging refrigerant in car AC is based on:

- A) Time method
- B) Pressure method
- C) Weight method
- D) Temperature method

✓ **Answer: C**

10. After charging, which step should be performed?

- A) Disconnect compressor belt
- B) Check for leaks
- C) Switch off blower
- D) Open expansion valve

✓ **Answer: B**

11. The main function of the temperature control system is to:

- A) Control vehicle speed
- B) Maintain desired cabin temperature
- C) Control fuel injection
- D) Reduce engine load

✓ **Answer: B**

12. The temperature sensor in a car HVAC system senses:

- A) Engine temperature
- B) Outside temperature only
- C) Cabin air temperature
- D) Tyre temperature

✓ **Answer: C**

13. In automatic climate control, temperature is controlled by:

- A) Driver manually
- B) ECU and sensors
- C) Expansion valve only
- D) Radiator

✓ **Answer: B**

14. Which component controls mixed hot and cold air?

- A) Compressor
- B) Condenser
- C) Blend door
- D) Evaporator

✓ **Answer: C**

15. The thermostat in an HVAC system is used to:

- A) Control refrigerant pressure
- B) Sense cabin temperature
- C) Control compressor ON/OFF
- D) Control blower speed

✓ **Answer: C**

1. The main purpose of a keyless entry system is to:

- A) Improve engine power

- B) Enable remote locking/unlocking of doors
- C) Increase fuel efficiency
- D) Control HVAC system

✔ **Answer: B**

2. Which component sends the signal in a keyless entry system?

- A) Door actuator
- B) Car ECU
- C) Key fob (Transmitter)
- D) Receiver motor

✔ **Answer: C**

3. Keyless entry systems generally operate using:

- A) Infrared waves
- B) Bluetooth only
- C) Radio Frequency (RF) signals
- D) Sound waves

✔ **Answer: C**

4. In a keyless entry system, the receiver is located:

- A) Inside the key
- B) Inside the door lock
- C) Inside the vehicle body
- D) Near the battery

✔ **Answer: C**

5. Rolling code technology is used in keyless systems to:

- A) Increase signal range
- B) Reduce battery usage
- C) Prevent theft by code duplication
- D) Improve door motor speed

✔ **Answer: C**

6. The main function of an anti-theft system is to:

- A) Increase car speed
- B) Prevent unauthorized vehicle use

- C) Improve braking
- D) Improve suspension

✓ **Answer: B**

7. An engine immobilizer works by:

- A) Locking the steering wheel
- B) Cutting fuel or ignition system
- C) Locking the doors
- D) Activating the horn

✓ **Answer: B**

9. Which sensor detects unauthorised entry into a car?

- A) Oxygen sensor
- B) Door sensor
- C) Temperature sensor
- D) MAF sensor

✓ **Answer: B**

10. A vehicle immobilizer compares the:

- A) Engine RPM
- B) Fuel pressure
- C) Key code with ECU data
- D) Door position

✓ **Answer: C**

11. Automatic door lock system function is to:

- A) Lock doors when car reaches a certain speed
- B) Lock only driver's door
- C) Prevent engine overheating
- D) Increase tyre pressure

✓ **Answer: A**

12. In many cars, automatic door locking activates when speed crosses:

- A) 5 km/h
- B) 10–15 km/h

C) 40 km/h

D) 80 km/h

✓ **Answer: B**

13. Which sensor supports automatic door locking?

A) Oxygen sensor

B) Speed sensor

C) Rain sensor

D) Temperature sensor

✓ **Answer: B**

14. The central locking system is controlled by:

A) Radiator

B) Body Control Module (BCM)

C) Alternator

D) ECU only

✓ **Answer: B**

15. Automatic unlocking usually happens:

A) When AC is turned off

B) When airbags deploy

C) When speed increases

D) When headlights turn on

✓ **Answer: B**

16. The main function of a park assist system is to:

A) Increase braking power

B) Help driver park safely

C) Increase engine RPM

D) Boost battery power

✓ **Answer: B**

17. Park assist system uses which type of sensor most commonly?

A) Temperature sensor

B) Ultrasonic sensor

C) Pressure sensor

D) Oxygen sensor

✓ **Answer: B**

18. The park assist system gives warning through:

A) Engine sound

B) Dashboard lights only

C) Beeps and display indication

D) Horn only

✓ **Answer: C**

19. In automatic park assist, steering is controlled by:

A) Driver

B) Steering ECU

C) Brake system

D) GPS ✓ **Answer: B**

20. Park assist sensors are usually mounted on:

A) Roof of the car

B) Side mirrors

C) Front and rear bumpers

D) Inside tyres

✓ **Answer: C**

1. The main purpose of automatic headlight dimming is to:

A) Increase battery voltage

B) Prevent dazzling of oncoming vehicles

C) Make headlights brighter

D) Improve fuel economy

✓ **Answer: B**

2. Automatic headlight dimming mainly works based on:

A) Vehicle speed

B) Ambient light and oncoming vehicle light intensity

C) Engine temperature

D) Steering angle

✓ **Answer: B**

3. Which sensor is used in automatic headlight dimming?

A) Ultrasonic sensor

B) Light sensor / Photodiode

C) Oxygen sensor

D) Speed sensor

✓ **Answer: B**

4. When an oncoming vehicle is detected, the headlight system automatically switches from:

A) Low beam to fog beam

B) Low beam to parking light

C) High beam to low beam

D) High beam to off

✓ **Answer: C**

5. The control of automatic dimming is handled by:

A) Ignition switch

B) Driver manually

C) Body Control Module (BCM)

D) Dashboard switch only

✓ **Answer: C**

7. The time delay in automatic headlight system is mainly used to:

A) Save fuel

B) Prevent frequent switching due to sudden light changes

C) Increase headlamp brightness

D) Reduce engine load

✓ **Answer: B**

8. Which sensor supports automatic ON/OFF headlights?

A) Rain sensor B) Light sensor

- C) Speed sensor
- D) Temperature sensor

✓ **Answer: B**

9. The headlight usually turns ON automatically when:

- A) Sunlight is strong
- B) Car is parked
- C) Ambient light falls below a set level
- D) Speed increases

✓ **Answer: C**

10. The “Follow-me-home” headlight feature is related to:

- A) Fog lights operation
- B) Automatic delay OFF headlight
- C) Brake light operation
- D) Turn signal system

✓ **Answer: B**

11. GPS stands for:

- A) Global Position Sensor
- B) Global Position System
- C) Geographical Position Satellite
- D) General Position System

✓ **Answer: B**

12. GPS system helps in:

- A) Engine tuning
- B) Vehicle location tracking
- C) Fuel injection
- D) Airbag deployment

✓ **Answer: B**

13. GPRS is mainly used in cars for:

- A) Wireless braking system
- B) Mobile data communication

C) Cooling system control

D) Engine lubrication

✓ **Answer: B**

14. GPRS stands for:

A) Global Packet Radio Service

B) General Packet Routing System

C) Global Position Radio Service

D) General Position Routing System

✓ **Answer: A**

15. Which component receives GPS signals from satellites?

A) ECU

B) GPS receiver/antenna

C) BCM

D) Engine sensor

✓ **Answer: B**

16. GPS requires how many satellites minimum for accurate positioning?

A) 1

B) 2

C) 3

D) 4

✓ **Answer: D**

17. GPRS mainly helps in:

A) Offline navigation only

B) Real-time traffic updates and internet services

C) Headlamp brightness control

D) Fuel pressure regulation

✓ **Answer: B**

18. Which system works without mobile network?

A) GPRS

B) Bluetooth

C) GPS

D) Wi-Fi

✓ **Answer: C**

19. GPS navigation uses:

A) Sound waves

B) Radio waves

C) Infrared waves

D) Magnetic waves

✓ **Answer: B**

20. GPS system accuracy mainly depends on:

A) Vehicle color

B) Number of satellites visible

C) Battery voltage

D) Tyre pressure

✓ **Answer: B**

Q1. HVAC stands for:

A) Heating, Ventilation and Air Conditioning

B) High Voltage Air Cooling

C) Heating, Vapour and AC

D) Heater Ventilation Application

Answer: A) Heating, Ventilation and Air Conditioning

Q2. Blower motor function is:

A) Flow refrigerant

B) Circulate air

C) Compress refrigerant

D) Heat coolant

Answer: B) Circulate air

Q3. Evaporator is located in:

A) Engine bay

B) Condenser area

C) Cabin dashboard

D) Fuel tank

Answer: C) Cabin dashboard

Q4. Which controls airflow direction?

A) Expansion valve

B) Air vents

C) Condenser

D) Compressor

Answer: B) Air vents

Q5. Recirculation mode:

A) Brings fresh air always

B) Reuses inside air

C) Stops blower

D) Heats engine

Answer: B) Reuses inside air

Q6. Car heating system uses heat from:

A) Exhaust gas

B) Battery

C) Engine coolant

D) Radiator fan

Answer: C) Engine coolant

Q7. Heater core acts like:

A) Condenser

B) Evaporator

C) Radiator

D) Compressor

Answer: C) Radiator

Q8. Ventilation system helps in:

A) Increasing engine power

B) Air circulation and fresh air supply

C) Fuel injection

D) Improving mileage

Answer: B) Air circulation and fresh air supply

Q9. Blend door is used for:

A) Mixing hot and cold air

B) Compressing refrigerant

C) Filtering air

D) Cooling engine

Answer: A) Mixing hot and cold air

Q10. Heater valve controls:

A) Fuel supply

B) Coolant flow

C) Air flow

D) Oil pressure

Answer: B) Coolant flow

Q11. Comfortable temperature range for car occupants is:

A) 5–10°C

B) 18–26°C

C) 30–40°C

D) Above 45°C

Answer: B) 18–26°C

Q12. Comfort humidity range is:

A) 10–20%

B) 30–60%

C) 70–90%

D) 90–100%

Answer: B) 30–60%

Q13. Human comfort depends on:

A) Temperature only

B) Humidity only

C) Temperature, humidity, air movement

D) Sunlight only

Answer: C) Temperature, humidity, air movement

Q14. High humidity causes:

- A) Excess cooling
- B) Sweating and discomfort
- C) Cold sensation
- D) No effect

Answer: B) Sweating and discomfort

Q15. Air movement improves comfort by:

- A) Increasing sweating
- B) Increasing evaporation of sweat
- C) Increasing humidity
- D) Stopping heat loss

Answer: B) Increasing evaporation of sweat

Q1. Which refrigerant is currently used in most modern cars?

- A) R12
- B) R22
- C) R134a
- D) Ammonia

Answer: C) R134a

Q2. Eco-friendly refrigerant is:

- A) R1234yf
- B) R12
- C) R500
- D) R11

Answer: A) R1234yf

Q3. Main property of refrigerant:

- A) Non-toxic
- B) Non-flammable
- C) High latent heat
- D) All of the above

Answer: D) All of the above

Q4. Which refrigerant has very low GWP?

- A) R134a
- B) R1234yf
- C) R22
- D) R410A

Answer: B) R1234yf

Q5. Refrigerant should have:

- A) High boiling point
- B) Low boiling point
- C) High density
- D) Poor heat transfer

Answer: B) Low boiling point

Q6. Refrigerant charging is done:

- A) In liquid form
- B) In gaseous form
- C) Both
- D) Solid form

Answer: C) Both

Q7. Overcharging results in:

- A) Poor cooling
- B) High compressor load
- C) Both A and B
- D) Engine stall

Answer: C) Both A and B

Q8. Undercharging causes:

- A) Ice formation
- B) Reduced cooling
- C) Compressor noise
- D) All of the above

Answer: B) Reduced cooling

Q9. Which tool is used for charging?

- A) Vacuum pump
- B) Manifold gauge set
- C) Screwdriver
- D) Multimeter

Answer: B) Manifold gauge set

Q10. Before charging, system should be:

- A) Washed
- B) Dried and evacuated
- C) Filled with oil

D) Heated

Answer: B) Dried and evacuated

Q10. Before charging, system should be:

A) Washed

B) Dried and evacuated

C) Filled with oil

D) Heated

Answer: B) Dried and evacuated

Q11. Thermostat is used to:

A) Control engine speed

B) Control cabin temperature

C) Control blower speed

D) Control fuel flow

Answer: B) Control cabin temperature

Q12. Humidity is reduced by:

A) Heater core

B) Evaporator

C) Compressor

D) Condenser

Answer: B) Evaporator

Q13. Climate control system is:

A) Manual control

B) Automatic control

C) Mechanical only

D) Electrical only

Answer: B) Automatic control

Q14. Cabin temperature sensor measures:

A) Engine temperature

B) Outside temperature

C) Inside temperature

D) Refrigerant temperature

Answer: C) Inside temperature

Q15. Dehumidification occurs when:

A) Air passes through evaporator

B) Air passes through heater

C) Fan stops

D) Air is recirculated

Answer: A) Air passes through evaporator

Q16. Keyless entry works using:

A) Bluetooth only

B) Infrared or RF signal

C) Wired connection

D) Mechanical link

Answer: B) Infrared or RF signal

Q17. Immobilizer prevents:

A) Door locking

B) Engine starting without authorized key

C) Fuel filling

D) Brake operation

Answer: B) Engine starting without authorized key

Q19. Central locking system:

A) Locks all doors together

B) Locks only driver door

C) Locks engine

D) Locks boot only

Answer: A) Locks all doors together

Q20. Anti-theft alarm activates when:

A) Ignition ON

B) Unauthorized attempt detected

C) AC ON

D) Door closed normally

Answer: B) Unauthorized attempt detected

Q21. Parking sensors use:

A) Infrared waves

B) Ultrasonic waves

C) Radio waves

D) Microwave

Answer: B) Ultrasonic waves

Q22. Park assist helps in:

- A) Lane changing
- B) Accurate parking
- C) Fuel control
- D) Suspension control

Answer: B) Accurate parking

Q24. Automatic headlight sensor detects:

- A) Engine temperature
- B) Light intensity
- C) Vehicle speed
- D) Obstacle distance

Answer: B) Light intensity

Q25. Automatic dimming works using:

- A) Ultrasonic sensor
- B) Light sensor
- C) Speed sensor
- D) Temperature sensor

Answer: B) Light sensor

Q26. Delay off headlight means:

- A) Light stays ON after ignition OFF
- B) Light stays ON while driving
- C) Light OFF immediately
- D) Light blinks

Answer: A) Light stays ON after ignition OFF

Q27. GPS stands for:

- A) Global Positioning System
- B) General Packet System
- C) Global Power Steering
- D) Graphical Position System

Answer: A) Global Positioning System

Q28. GPRS is used for:

- A) Navigation calculation
- B) Data transmission
- C) Vehicle braking
- D) Parking

Answer: B) Data transmission

Q29. GPS works using:

- A) Mobile towers
- B) Satellites
- C) Radar
- D) Infrared

Answer: B) Satellites

Q30. Sealed beam headlamp means:

- A) Bulb can be replaced separately
- B) Entire unit is sealed and replaced together
- C) Only lens is sealed
- D) Reflector is open

Answer: B) Entire unit is sealed and replaced together

Q31. Main parts of sealed beam headlamp are:

- A) Bulb & battery

B) Lens, reflector, filament

C) Switch & relay

D) Fuse & horn

Answer: B) Lens, reflector, filament

Q32. Dazzle occurs due to:

A) Low beam

B) High beam

C) Parking light

D) Fog lamp

Answer: B) High beam

Q33. Anti-dazzle mirror helps reduce:

A) Engine noise

B) Glare from rear vehicles

C) Fuel consumption

D) Headlight brightness

Answer: B) Glare from rear vehicles

Q34. Beam control is achieved by:

A) Adjusting headlamp angle

B) Changing colour

C) Changing battery

D) Changing horn

Answer: A) Adjusting headlamp angle

Q35. Air bag inflates mainly during:

A) Side impact

B) Rear collision

C) Frontal collision

D) Minor vibration

Answer: C) Frontal collision

Q36. Air bags inflate within:

A) 1 second

B) 0.1 to 0.3 seconds

C) 2 seconds

D) After engine stops

Answer: B) 0.1 to 0.3 seconds

Q37. Which sensor is used to detect crash?

A) Temperature sensor

B) Impact sensor

C) Oxygen sensor

D) Speed sensor

Answer: B) Impact sensor

Q38. Which gas is commonly used for airbag inflation?

A) Nitrogen

B) Oxygen

C) Hydrogen

D) Carbon monoxide

Answer: A) Nitrogen

Q39. SRS stands for:

A) Safety Restraint System

B) Supplemental Restraint System

C) Secure Restrain System

D) Safety Response System

Answer: B) Supplemental Restraint System

Q40. Seat belt prevents:

- A) Vehicle rollover
- B) Occupant ejection during crash
- C) Engine failure
- D) Tyre burst

Answer: B) Occupant ejection during crash

Q41. Three-point seat belt includes:

- A) Lap belt only
- B) Shoulder belt only
- C) Lap and shoulder belt
- D) Neck support

Answer: C) Lap and shoulder belt

Q42. Seat belt pretensioner function is to:

- A) Loosen belt
- B) Tighten belt during collision
- C) Protect engine
- D) Activate air bag only

Answer: B) Tighten belt during collision

Q43. Which material is used in seat belts?

- A) Rubber
- B) Nylon
- C) Steel
- D) Cotton

Answer: B) Nylon

Q44. Load limiter helps to:

- A) Increase belt force
- B) Reduce chest injury
- C) Increase speed

D) Prevent engine overheating

Answer: B) Reduce chest injury

Q45. Central locking allows:

A) Only driver door locking

B) All doors to be locked/unlocked together

C) Only boot door locking

D) Engine locking

Answer: B) All doors to be locked/unlocked together

Q46. Central locking system works using:

A) Hydraulic actuators

B) Pneumatic actuators

C) Electrical actuators

D) Mechanical rods only

Answer: C) Electrical actuators

Q47. Remote key system transmits signals via:

A) Wires

B) RF waves

C) Sound waves

D) Light waves

Answer: B) RF waves

Q48. Main purpose of collapsible steering is to:

A) Improve steering efficiency

B) Absorb impact energy during crash

C) Increase vehicle speed

D) Reduce fuel consumption

Answer: B) Absorb impact energy during crash

Q49. In a frontal crash, rigid steering column can:

A) Protect driver

- B) Increase driver injuries
- C) Lock the brakes
- D) Control vehicle direction

Answer: B) Increase driver injuries

Q50. Collapsible steering column uses:

- A) Solid steel rod
- B) Breakaway sleeve / telescopic arrangement
- C) Plastic shaft
- D) Rubber coupling only

Answer: B) Breakaway sleeve / telescopic arrangement

Q51. Purpose of ABS is to:

- A) Increase brake wear
- B) Prevent wheel locking during braking
- C) Increase stopping distance
- D) Reduce fuel consumption

Answer: B) Prevent wheel locking during braking

Q52. ABS works by:

- A) Locking all wheels
- B) Pumping the brakes manually
- C) Modulating brake pressure automatically
- D) Switching off brakes

Answer: C) Modulating brake pressure automatically

Q53. Which sensor is used in ABS?

- A) Pressure sensor
- B) Wheel speed sensor
- C) Temperature sensor
- D) Oxygen sensor

Answer: B) Wheel speed sensor

Q54. ABS mainly improves:

- A) Steering control during braking
- B) Engine power
- C) Air conditioning
- D) Mileage

Answer: A) Steering control during braking

Q55. ESC is used to:

- A) Prevent engine overheating
- B) Prevent skidding and loss of control
- C) Improve air conditioning
- D) Increase speed

Answer: B) Prevent skidding and loss of control

Q56. ESC functions by:

- A) Applying brakes to individual wheels
- B) Turning off engine
- C) Locking steering
- D) Increasing tyre pressure

Answer: A) Applying brakes to individual wheels

Q57. ESC uses which sensors?

- A) Engine RPM sensor only
- B) Yaw rate, steering angle and wheel speed sensors
- C) Fuel sensors only
- D) Temperature sensors only

Answer: B) Yaw rate, steering angle and wheel speed sensors

Q58. ESC mainly helps during:

- A) Straight driving
- B) Driving in curves/slippery roads

C) Vehicle washing

D) Parking

Answer: B) Driving in curves/slippery roads

Q59. Which system works together with ABS to improve control?

A) Power steering

B) ESC

C) AC system

D) Horn

Answer: B) ESC

Q60. Which safety device reduces head and chest injuries?

A) Air bag

B) Fuse

C) GPS

D) Tyre

Answer: A) Air bag

Q61. Which provides primary safety?

A) Seat belt

B) Air bag

C) ESC

D) Central locking

Answer: A) Seat belt

Q62. Which prevents car from rolling back on slopes?

A) Hill Hold Control

B) Central locking

C) ABS

D) Air bag

Answer: A) Hill Hold Control

1. What is the main function of an automobile body?

- A) Improve engine performance
- B) Support electrical systems
- C) Provide space for passengers and goods
- D) Increase fuel consumption

Answer: C) Provide space for passengers and goods

2. What is the term used for the lower part of the vehicle which includes the frame and suspension system?

- A) Roof panel
- B) Chassis
- C) Bonnet
- D) Firewall

Answer: B) Chassis

3. Which part of the body separates the engine compartment from the passenger compartment?

- A) Dash panel
- B) Firewall
- C) Bonnet
- D) Radiator grille

Answer: B) Firewall

4. A monocoque body construction means:

- A) Body and frame are separate
- B) Body is built on a wooden frame
- C) Body and chassis are integrated
- D) Body is made only of plastic

Answer: C) Body and chassis are integrated

5. Which type of automobile body is commonly used in sports and racing cars?

- A) Hatchback
- B) Convertible
- C) Coupe
- D) SUV

Answer: C) Coupe

6. What is the primary material used in conventional automobile body construction?

- A) Copper
- B) Plastic
- C) Steel
- D) Aluminum

Answer: C) Steel

7. Which of the following is not a vehicle body type?

- A) Sedan
- B) Limousine
- C) Transmission
- D) Hatchback

Answer: C) Transmission

8. In which type of body construction is the frame and body built as one unit?

- A) Body-on-frame
- B) Semi-monocoque
- C) Monocoque
- D) Ladder frame

Answer: C) Monocoque

9. Which specification is not typically included when comparing vehicle bodies?

- A) Fuel tank capacity
- B) Seating capacity
- C) Boot space
- D) Number of doors

Answer: A) Fuel tank capacity

10. What is a characteristic of a convertible car body?

- A) Has no engine compartment
- B) Fixed metal roof
- C) Retractable or removable roof
- D) Only two wheels

Answer: C) Retractable or removable roof

11. Which of the following is a feature of a station wagon vehicle?

- A) Small luggage space
- B) Two seats only
- C) Extended rear cargo area
- D) No rear window

Answer: C) Extended rear cargo area

12. What is the typical body type of a heavy goods vehicle (HGV)?

- A) Coupe
- B) SUV
- C) Truck body
- D) Sedan

Answer: C) Truck body

13. What does “SUV” stand for?

- A) Super Utility Van
- B) Standard Utility Vehicle
- C) Sports Utility Vehicle
- D) Special Use Vehicle

Answer: C) Sports Utility Vehicle

14. In body construction, what is the primary purpose of crumple zones?

- A) Reduce fuel consumption
- B) Provide comfort
- C) Absorb impact energy in collisions
- D) Add aesthetic design

Answer: C) Absorb impact energy in collisions

15. Which of the following vehicles is typically built with a body-on-frame construction?

- A) Hatchback
- B) SUV
- C) Coupe
- D) Convertible

Answer: B) SUV

16. Which of the following materials is most commonly used in automobile body construction?

- A) Copper
- B) Mild steel
- C) Brass
- D) Zinc

Answer: B) Mild steel

17. Aluminium is used in automobile bodies mainly because of its:

- A) High cost
- B) High weight
- C) Corrosion resistance and lightweight
- D) High strength only

Answer: C) Corrosion resistance and lightweight

18. Which material is primarily used in high-performance and luxury cars due to its strength-to-weight ratio?

- A) Mild steel
- B) Cast iron
- C) Carbon fiber
- D) PVC

Answer: C) Carbon fiber

19. What is the purpose of galvanization in automotive body panels?

- A) Improve paint quality
- B) Reduce body weight
- C) Prevent rusting
- D) Increase thickness

Answer: C) Prevent rusting

20. The first step in vehicle body fabrication is usually:

- A) Painting
- B) Welding
- C) Cutting and shaping sheet metal
- D) Sanding

Answer: C) Cutting and shaping sheet metal

21. Which type of welding is most commonly used in automobile body repair?

- A) Arc welding
- B) Gas welding
- C) TIG welding
- D) MIG welding

Answer: D) MIG welding

22. What is a common tool used for reshaping dented metal during accident repair?

- A) Hacksaw
- B) Dent puller
- C) Lathe
- D) Drill machine

Answer: B) Dent puller

23. In accidental repairs, which process is used to smoothen the damaged surface before painting?

- A) Drilling
- B) Sanding
- C) Welding
- D) Hammering

Answer: B) Sanding

24. The function of primer in body painting is to:

- A) Increase thickness
- B) Provide color

- C) Improve paint adhesion and prevent rust
- D) Make it waterproof

Answer: C) Improve paint adhesion and prevent rust

25. Which body accessory helps reduce wind resistance and improve aerodynamics?

- A) Bumper
- B) Spoiler
- C) Mudguard
- D) Sunroof

Answer: B) Spoiler

26. Which of the following is not considered a body accessory?

- A) Fog lights
- B) Roof rails
- C) Chassis
- D) Side mirrors

Answer: C) Chassis

27. What is the main function of a car's bumper?

- A) Improve aesthetics
- B) Absorb impact during minor collisions
- C) Support headlights
- D) Help fuel efficiency

Answer: B) Absorb impact during minor collisions

28. The purpose of mud flaps on a vehicle is to:

- A) Enhance speed
- B) Reduce noise
- C) Prevent mud and debris from hitting the body
- D) Reduce emissions

Answer: C) Prevent mud and debris from hitting the body

29. Side view mirrors are mainly used for:

- A) Decoration
- B) Increasing speed
- C) Rear and side visibility for safe lane changing
- D) Engine cooling

Answer: C) Rear and side visibility for safe lane changing

30. What is the function of roof rails on a vehicle?

- A) Decoration only
- B) Improve aerodynamics
- C) Carry luggage or cargo on the roof
- D) Support windshield

Answer: C) Carry luggage or cargo on the roof

31. What is the main benefit of streamlining a vehicle body?

- A) Better lighting
- B) Lower manufacturing cost
- C) Reduction in air resistance
- D) More passenger space

Answer: C) Reduction in air resistance

32. Air resistance acting on a vehicle is also known as:

- A) Gradient resistance
- B) Rolling resistance
- C) Aerodynamic drag
- D) Inertial resistance

Answer: C) Aerodynamic drag

33. Which shape offers the least air resistance at high speed?

- A) Rectangular
- B) Cubical
- C) Streamlined (teardrop-shaped)
- D) Square

Answer: C) Streamlined (teardrop-shaped)

34. What does rolling resistance depend on most?

- A) Wind speed
- B) Tyre material and road surface
- C) Engine size
- D) Number of passengers

Answer: B) Tyre material and road surface

35. Gradient resistance is encountered when:

- A) Vehicle moves on flat road
- B) Vehicle moves downhill only
- C) Vehicle climbs an incline
- D) Vehicle accelerates on straight road

Answer: C) Vehicle climbs an incline

36. What is the formula for tractive resistance?

- A) Rolling + Gradient + Air resistance
- B) Rolling – Air resistance
- C) Gradient \times Rolling
- D) Engine power \div Weight

Answer: A) Rolling + Gradient + Air resistance

37. The force available between tyre and road to move the vehicle is called:

- A) Drag force
- B) Gradient force
- C) Traction
- D) Resistance

Answer: C) Traction

38. Tractive effort is defined as:

- A) Resistance caused by gravity
- B) Force required to overcome all resistances
- C) Power output of engine
- D) Braking force

Answer: B) Force required to overcome all resistances

39. Which is not a type of vehicle resistance?

- A) Air resistance
- B) Rolling resistance
- C) Lateral resistance
- D) Gradient resistance

Answer: C) Lateral resistance

40. Which resistance increases at high speed?

- A) Rolling resistance
- B) Air resistance
- C) Gradient resistance
- D) Tractive effort

Answer: B) Air resistance

41. Pitching is the movement of the vehicle about its:

- A) Longitudinal axis
- B) Lateral axis
- C) Vertical axis
- D) Center of gravity

Answer: B) Lateral axis

42. Rolling refers to movement about the:

- A) Vertical axis
- B) Lateral axis
- C) Longitudinal axis
- D) Horizontal plane

Answer: C) Longitudinal axis

43. Yaw is the movement around the:

- A) Vertical axis
- B) Lateral axis
- C) Horizontal axis
- D) Front axle

Answer: A) Vertical axis

44. Bouncing occurs due to:

- A) Poor lighting
- B) Steering misalignment
- C) Poor suspension or uneven roads
- D) Over-inflated tyres

Answer: C) Poor suspension or uneven roads

45. Sway refers to:

- A) Up-down motion
- B) Side-to-side motion of body
- C) Rotating motion
- D) Forward acceleration

Answer: B) Side-to-side motion of body

46. The primary purpose of anticorrosive treatment is to:

- A) Improve fuel efficiency
- B) Enhance engine performance
- C) Prevent rust and corrosion
- D) Improve aerodynamics

Answer: C) Prevent rust and corrosion

47. First step in vehicle painting process:

- A) Top coat
- B) Priming
- C) Surface cleaning and sanding
- D) Clear coat

Answer: C) Surface cleaning and sanding

48. Coating applied immediately after surface cleaning:

- A) Clear coat
- B) Primer
- C) Base coat
- D) Top coat

Answer: B) Primer

49. Which layer gives actual color and appearance?

- A) Base coat
- B) Clear coat
- C) Primer
- D) Epoxy coating

Answer: A) Base coat

50. The clear coat in painting is used to:

- A) Add thickness to paint
- B) Increase friction
- C) Protect the base coat and give gloss
- D) Prevent fire hazards

Answer: C) Protect the base coat and give gloss

51. What is the primary chemical used for rustproofing underbody parts?

- A) Paint thinner
- B) Epoxy resin
- C) Zinc phosphate
- D) Engine oil

Answer: C) Zinc phosphate

52. Which of the following is not a method of anticorrosive treatment?

- A) Galvanizing
- B) Phosphating
- C) Painting
- D) Welding

Answer: D) Welding

53. What is the name of the process in which a car body is dipped into a bath for anti-corrosion coating?

- A) Electroplating
- B) Dip coating
- C) Electro-deposition (ED) coating
- D) Spot welding

Answer: C) Electro-deposition (ED) coating

54. During repainting, what is usually done before applying a new coat of paint?

- A) Wash with plain water
- B) Wet sanding and removing old paint
- C) Engine tuning
- D) Apply base coat directly

Answer: B) Wet sanding and removing old paint

55. Which tool is commonly used to apply paint in auto body shops?

- A) Paintbrush
- B) Sanding block
- C) Spray gun
- D) Welding torch

Answer: C) Spray gun

56. What is the main purpose of polishing after painting or repainting?

- A) Remove the paint
- B) Soften the metal
- C) Improve surface finish and shine
- D) Reduce weight

Answer: C) Improve surface finish and shine

57. Which type of paint is most commonly used in modern automobile painting?

- A) Acrylic enamel
- B) Water-based emulsion
- C) Latex paint
- D) Oil-based paint

Answer: A) Acrylic enamel

58. What can cause paint blistering after painting?

- A) Low humidity
- B) Proper drying
- C) Moisture or contaminants under paint
- D) Polishing the surface

Answer: C) Moisture or contaminants under paint

59. In multi-layer painting, the layer applied to smooth out imperfections before base coat is called:

- A) Primer
- B) Putty / filler

- C) Clear coat
- D) Epoxy layer

Answer: B) Putty / filler

60. Which part of the vehicle is most prone to corrosion?

- A) Roof
- B) Bonnet
- C) Underbody and wheel arches
- D) Windows

Answer: C) Underbody and wheel arches

61. The primary purpose of applying anticorrosive treatment to a vehicle body is to:

- A) Improve fuel efficiency
- B) Enhance engine performance
- C) Prevent rust and corrosion
- D) Improve aerodynamics

Answer: C) Prevent rust and corrosion

62. Which of the following is the first step in the vehicle painting process?

- A) Top coat application
- B) Priming
- C) Surface cleaning and sanding
- D) Clear coat application

Answer: C) Surface cleaning and sanding

63. Which type of coating is applied immediately after surface cleaning to prevent corrosion?

- A) Clear coat
- B) Primer
- C) Base coat
- D) Top coat

Answer: B) Primer

64. Which layer of paint provides the actual color and aesthetic appearance of the vehicle?

- A) Base coat
- B) Clear coat
- C) Primer
- D) Epoxy coating

Answer: A) Base coat

65. The clear coat in painting is used to:

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- B) Increase friction
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- B) Phosphating
- C) Painting
- D) Welding

Answer: D) Welding

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- C) Underbody and wheel arches
- D) Windows

Answer: C) Underbody and wheel arches

76. What is a major drawback of a carbureted SI engine?

- A) Precise air-fuel control
- B) High fuel efficiency
- C) Poor cold starting and emissions
- D) High engine power

Answer: C) Poor cold starting and emissions

77. In carbureted engines, fuel is mixed with air:

- A) Near the intake valve
- B) In the combustion chamber
- C) Inside the exhaust manifold
- D) In the carburetor

Answer: D) In the carburetor

78. Advantage of MPFI over carburetor:

- A) Lower cost
- B) Easier manufacturing
- C) Better fuel atomization and control
- D) No ECU required

Answer: C) Better fuel atomization and control

79. In Throttle Body Injection (TBI), fuel is injected:

- A) Into each cylinder
- B) Into exhaust port
- C) Just above throttle valve
- D) Into fuel tank

Answer: C) Just above throttle valve

80. In Port Fuel Injection (PFI), fuel is injected:

- A) Before throttle
- B) Into combustion chamber
- C) Near intake valve of each cylinder
- D) After exhaust valve

Answer: C) Near intake valve of each cylinder

81. Which system offers more precise fuel delivery?

- A) TBI
- B) PFI
- C) Carburetor
- D) Mechanical injection

Answer: B) PFI

82. MPFI stands for:

- A) Multi-Point Fuel Injection
- B) Multi-Port Fuel Ignition
- C) Main Power Fuel Injector
- D) Multiple Pressure Fuel Injection

Answer: A) Multi-Point Fuel Injection

83. Which is NOT an MPFI sensor?

- A) TPS
- B) Oxygen sensor
- C) Knock sensor
- D) Brake pedal sensor

Answer: D) Brake pedal sensor

84. Function of Oxygen sensor:

- A) Detect temperature
- B) Detect throttle angle
- C) Monitor exhaust air-fuel ratio
- D) Increase fuel pressure

Answer: C) Monitor exhaust air-fuel ratio

85. MAF sensor measures:

- A) Engine speed
- B) Throttle position
- C) Amount of air entering engine
- D) Fuel temperature

Answer: C) Amount of air entering engine

86. Engine temperature sensor:

- A) O₂ sensor
- B) MAP sensor
- C) Coolant temperature sensor
- D) Camshaft sensor

Answer: C) Coolant temperature sensor

87. Actuator in MPFI:

- A) MAP sensor
- B) Fuel injector
- C) Oxygen sensor
- D) TPS

Answer: B) Fuel injector

88. ECU controls:

- A) Ignition only
- B) Air supply only
- C) Fuel injection timing & duration
- D) Exhaust valves

Answer: C) Fuel injection timing & duration

89. Engine speed sensor:

- A) TPS
- B) Crankshaft position sensor
- C) IAT sensor
- D) Coolant sensor

Answer: B) Crankshaft position sensor

90. Component improving fuel economy & emissions:

- A) Air filter
- B) Ignition coil
- C) ECU
- D) Flywheel

Answer: C) ECU

91. CRDI stands for:

- A) Controlled Rail Direct Ignition
- B) Common Rail Direct Injection
- C) Constant Rate Direct Injection
- D) Combined Rail Diesel Injection

Answer: B) Common Rail Direct Injection

92. Key feature of CRDI:

- A) Carburetor use
- B) Low pressure injection
- C) High-pressure common rail
- D) Spark ignition

Answer: C) High-pressure common rail

93. Fuel injection in CRDI:

- A) Intake manifold
- B) After exhaust valve
- C) Directly into combustion chamber
- D) Fuel tank

Answer: C) Directly into combustion chamber

94. NOT a CRDI component:

- A) Common rail
- B) High-pressure pump
- C) Spark plug
- D) ECU

Answer: C) Spark plug

95. CRDI injection timing is controlled by:

- A) Fuel filter
- B) Ignition coil
- C) ECU
- D) Glow plug

Answer: C) ECU

96. Function of common rail:

- A) Return line
- B) Fuel storage & distribution
- C) Pressure regulator
- D) Injector

Answer: B) Fuel storage & distribution

97. CRDI injectors are operated by:

- A) Camshaft
- B) ECU-controlled solenoids / piezo
- C) Vacuum
- D) Manual pump

Answer: B) ECU-controlled solenoids / piezo

98. CRDI block diagram excludes:

- A) Fuel tank
- B) High-pressure pump
- C) Common rail
- D) Catalytic converter

Answer: D) Catalytic converter

99. Advantage of CRDI:

- A) Lower engine weight
- B) Reduced compression ratio
- C) Precise fuel control & multiple injections
- D) Petrol usage

Answer: C) Precise fuel control & multiple injections

100. CRDI improves:

- A) Emissions
- B) Noise
- C) Fuel efficiency & lower emissions
- D) Low injection pressure

Answer: C) Fuel efficiency & lower emissions

101. Pilot injection is used to:

- A) Cool injector
- B) Reduce noise & improve combustion
- C) Increase fuel flow
- D) Heat exhaust

Answer: B) Reduce noise & improve combustion

102. Pump used in CRDI:

- A) Diaphragm
- B) Vane
- C) High-pressure plunger pump
- D) Water pump

Answer: C) High-pressure plunger pump

103. CRDI pressure range:

- A) 10–20 bar
- B) 100–200 bar
- C) 1000–2000 bar
- D) 5000–6000 bar

Answer: C) 1000–2000 bar

104. CRDI injection is:

- A) Constant
- B) Fixed volume
- C) Variable timing & pressure
- D) After exhaust

Answer: C) Variable timing & pressure

105. Advantage of CRDI engines:

- A) Higher NO_x
- B) Low efficiency
- C) Smooth operation & reduced knock
- D) More mechanics

Answer: C) Smooth operation & reduced knock

106. Advantage of VGT:

- A) Smaller engine
- B) Low-speed only performance
- C) Optimal boost across RPM
- D) Higher fuel use

Answer: C) Optimal boost across RPM

107. VGT vanes regulate:

- A) Coolant flow
- B) Air-fuel ratio
- C) Exhaust gas flow
- D) Ignition timing

Answer: C) Exhaust gas flow

108. VGT benefit:

- A) Reduced torque
- B) Turbo lag
- C) Lower emissions & better response
- D) Simple design

Answer: C) Lower emissions & better response

109. VVT is used to:

- A) Control fuel pressure
- B) Increase engine size
- C) Optimize valve timing
- D) Reduce plug wear

Answer: C) Optimize valve timing

110. VVT does NOT improve:

- A) Power
- B) Emissions
- C) Valve damage
- D) Fuel efficiency

Answer: C) Valve damage

111. VVT adjusts:

- A) Injector pressure
- B) Valve timing
- C) Piston stroke
- D) Oil temperature

Answer: B) Valve timing

112. GDI injects fuel:

- A) Carburetor
- B) Intake manifold
- C) Combustion chamber
- D) Exhaust manifold

Answer: C) Combustion chamber

113. Advantage of GDI:

- A) Low pressure
- B) Rich mixture
- C) Better economy & performance
- D) High emissions

Answer: C) Better economy & performance

114. Stratified charge is used to:

- A) Cool engine
- B) Burn rich mix
- C) Lean burn at light load
- D) Reduce ignition temp

Answer: C) Lean burn at light load

115. Stratified charge means:

- A) Carburetor mixing
- B) Outside cylinder mixing
- C) Different mixture zones
- D) Diesel use

Answer: C) Different mixture zones

116. Essential component for stratified charge:

- A) Spark plug
- B) Direct injector
- C) Turbocharger
- D) EGR valve

Answer: B) Direct injector

117. Challenge of GDI:

- A) Cooling loss
- B) Engine size
- C) Particulate emissions
- D) Low compression

Answer: C) Particulate emissions

118. VVT integrated with:

- A) Fuel tank
- B) Cooling fan
- C) Variable Valve Lift
- D) Starter motor

Answer: C) Variable Valve Lift

119. Small VGT vane opening causes:

- A) Low boost
- B) Faster turbine & torque
- C) Low temperature
- D) Delay

Answer: B) Faster turbine & torque

120. GDI modes:

- A) Turbo / non-turbo
- B) Cold / hot
- C) Homogeneous / stratified
- D) Open / closed loop

Answer: C) Homogeneous / stratified

121. Emission control purpose:

- A) Increase fuel use
- B) Engine size
- C) Reduce harmful emissions
- D) Improve sound

Answer: C) Reduce harmful emissions

122. EGR stands for:

- A) Engine Gas Reduction
- B) Exhaust Gas Recirculation
- C) Electronic Gas Re-injection
- D) Emission Gas Regulator

Answer: B) Exhaust Gas Recirculation

123. EGR reduces:

- A) CO
- B) HC
- C) NO_x
- D) PM

Answer: C) NO_x

124. EGR valve works by:

- A) Fuel pressure rise
- B) Exhaust gas recirculation
- C) Sealing exhaust
- D) Coolant control

Answer: B) Exhaust gas recirculation

125. EGR reduces NO_x by:

- A) Raising temp
- B) Lowering temp
- C) Increasing air
- D) Less fuel

Answer: B) Lowering temperature

126. EGR valve is controlled by:

- A) Carburetor
- B) Throttle
- C) ECU
- D) Distributor

Answer: C) ECU

127. PCV system:

- A) Adds fuel
- B) Raises oil pressure
- C) Recirculates blow-by gases
- D) Seals crankcase

Answer: C) Recirculates blow-by gases

128. Blow-by gases are:

- A) Tailpipe gases
- B) Tank gases
- C) Gases past piston rings
- D) Radiator gases

Answer: C) Gases past piston rings

129. PCV reduces:

- A) CO₂
- B) HC
- C) NO_x
- D) Lead

Answer: B) HC

130. PCV component:

- A) EGR cooler
- B) Catalytic converter
- C) PCV valve
- D) MAP sensor

Answer: C) PCV valve

131. EVAP system:

- A) Prevent oil leaks
- B) Trap fuel vapors
- C) Stop smoke
- D) Cool radiator

Answer: B) Trap fuel vapors

132. Charcoal canister:

- A) Absorbs coolant
- B) Stores oil
- C) Absorbs fuel vapors
- D) Filters air

Answer: C) Absorbs fuel vapors

133. Stored vapors are:

- A) Released
- B) Burned in exhaust
- C) Sent to intake
- D) Condensed

Answer: C) Sent to intake

134. Emission system active when parked:

- A) PCV
- B) EGR
- C) EVAP
- D) Catalytic converter

Answer: C) EVAP

135. Emission & economy control:

- A) PCV
- B) EGR
- C) EVAP
- D) EGR & PCV

Answer: D) EGR & PCV

136. EV propulsion:

- A) ICE
- B) Steam
- C) Electric motor + battery
- D) Gas turbine

Answer: C) Electric motor + battery

137. EV key component:

- A) Injector
- B) Motor
- C) Carburetor
- D) Exhaust

Answer: B) Motor

138. BEV energy stored in:

- A) Hydrogen tank
- B) Diesel tank
- C) Battery pack
- D) Flywheel

Answer: C) Battery pack

139. Charging infrastructure:

- A) Cooling
- B) Air supply
- C) Battery charging
- D) Lubrication

Answer: C) Battery charging

140. EV excludes:

- A) Battery
- B) Motor
- C) Gearbox
- D) Fuel tank & exhaust

Answer: D) Fuel tank & exhaust

141. Common EV battery:

- A) Lead-acid
- B) NiMH
- C) Lithium-ion
- D) Zinc-air

Answer: C) Lithium-ion

142. Li-ion advantage:

- A) Heavy
- B) Memory effect
- C) High energy density
- D) Water topping

Answer: C) High energy density

143. BMS function:

- A) Increase speed
- B) Regulate airflow
- C) Manage battery health
- D) Steering

Answer: C) Manage battery health

144. NOT BMS function:

- A) Temp monitoring
- B) SOC control
- C) Fuel injection
- D) Safety

Answer: C) Fuel injection

145. Common EV motor:

- A) Brushed DC
- B) Reluctance
- C) BLDC
- D) Shaded pole

Answer: C) BLDC

146. Regenerative braking:

- A) Oil brakes
- B) Converts energy to electrical
- C) Hydraulic braking
- D) Reverse gear

Answer: B) Converts energy to electrical

147. Battery energy depends on:

- A) Voltage
- B) Capacity
- C) Current
- D) Temperature

Answer: B) Capacity

148. Fastest EV charging:

- A) Level 1
- B) Level 2
- C) DC fast charging
- D) USB

Answer: C) DC fast charging

149. Inverter function:

- A) Charging
- B) AC to DC
- C) DC to AC
- D) Cooling

Answer: C) DC to AC

150. Electric motor function:

- A) Store energy
- B) Create fuel
- C) Convert electrical to mechanical energy
- D) Control temperature

Answer: C) Convert electrical to mechanical energy