PROVISIONAL ANSWER KEY

Question 136/2023/OL

Paper Code:

Category 314/2021

Code:

Exam: Drilling Assistant (SR for SC/ST)

Date of Test 04-08-2023

Department Ground Water

Question1:-Which of the following statement is/are true with the scraper?

- i. Scraping is done before machining or filing
- ii. The overall length of blade and handle of a scraper may range from 150 to 500 mm
- iii. For work of average hardness blade of scraper is held at an angle about 30° to surface

A:-All of the above (i, ii and iii)

B:-Only (i and ii)

C:-Only (i and iii)

D:-Only (ii and iii)

Correct Answer: - Option-D

Question2:-Which of the statement is/are true with the calipers?

- i. Calipers cannot read the sizes themselves but measurement taken by them can be read by transferring the sizes on to a steel rule
- ii. A firm joint caliper consists of two legs that are fixed together with a spring
- iii. An inside caliper has its leg bend outwards

A:-Only (i and ii)

B:-Only (i and iii)

C:-All of the above (i, ii and iii)

D:-Only (ii and iii)

Correct Answer:- Option-B

Question3:-Which of the statement is/are true with the precision measuring instruments?

- i. A universal vernier caliper is used to measure the inside, outside and depth dimensions with a least count of 0.002mm
- ii. The least count of vernier bevel protractor is 5 seconds
- iii. In a vernier caliper 9 main scale divisions are equally divided into 10 vernier scale divisions. One main scale division is equal to 1 mm, then the least count of this vernier caliper is 0.1mm

A:-Only (i and ii)

B:-Only (i and iii)

C:-Only (iii)

D:-Only (ii and iii)

Correct Answer:- Option-C

Question4:-Which of the statement is/are true with the marking tools?

- i. A universal surface gauge is used to scribe lines parallel to a datum surface
- ii. A universal surface gauge is used to set the job on machines parallel to a datum surface
- iii. Angle of centre punch is 90°

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A:-All of the above (i, ii and iii)
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B:-Only (ii and iii)

C:-Only (i and ii)

D:-Only (i and iii)

Correct Answer:- Option-A

Question5:-Which of the following statement is/are not true with the work holding device - vices?

- i. In a bench vice, to hold a finished work, soft jaws made of brass over the regular jaws
- ii. In a pipe vice, the screw is horizontal and movable so the jaw works vertically
- iii. The length of hand vice varies from 125 mm to 150 mm

A:-Only (i and iii)

B:-All of the above (i, ii and iii)

C:-Only (ii and iii)

D:-Only (i and ii)

Correct Answer: - Option-D

Question6:-Which of the statement is/are true with the type of screw drivers?

- i. Screw drivers are specified according to the length of blade and thickness of tip
- ii. Screw drivers are specified according to the length of blade and width of tip
- iii. The normal width of blade varies from 5 mm to 8 mm

A:-Only (ii and iii)

B:-Only (ii)

C:-Only (i and iii)

D:-Only (i and ii)

Correct Answer:- Option-B

Question7:-Which of the following statement is/are not true with the spanners?

- i. In British system the nominal size of bolt or nut is used to identify the spanner
- ii. The adjustable spanner has its jaws set at an angle of 45° to the handle
- iii. Normally spanners have a length that is about ten times the width of the jaw opening

A:-Only (ii)

B:-Only (ii and iii)

C:-Only (i and iii)

D:-All of the above (i, ii and iii)

Correct Answer: - Option-A

Question8:-Which of the statement is/are true with the type of pliers?

- i. In a combination plier pipe grip is serrated for gripping square shaped objects
- ii. A flat nose plier is used for bending and folding narrow strips of thin metals
- iii. Slip joint pliers have various ranges of jaw opening

A:-Only (i and iii)

B:-Only (ii and iii)

C:-Only (i and ii)

D:-All of the above (i, ii and iii)

Correct Answer:- Option-B

Question9:-Which of the statement is/are true with the drilling machine?

- i. The sensitive bench drilling machine is capable of drilling holes upto 20 mm diameter
- ii. The drills are provided with morse taper
- iii. When the drill taper shank is bigger than the machine spindle, taper sockets are used

A:-Only (i and ii)

B:-Only (i and iii)

C:-Only (ii and iii)

D:-All of the above (i, ii and iii)

Correct Answer:- Option-C

Question 10:-Which of the statement is/are true with the hand taps and dies?

- i. In a set of hand taps, there are three number of taps available
- ii. The intermediate tap is provided with a taper of 14°
- iii. Dies are used for producing internal standard 'V' threads

A:-Only (i and iii)

B:-All of the above (i, ii and iii)

C:-Only (ii and iii)

D:-Only (i and ii)

Correct Answer:- Option-D

Question11:-Which one of the following statements is false?

A:-Multi metre can be used to measure current, voltage and resistance of a powered circuit.

B:-Voltmeter is connected parallel in circuit

C:-Ammeter is connected series in circuit

D:-Electronic multi meters are provided with rectifier unit

Correct Answer:- Option-A

Question12:-Which one of the following statements is true?

A:-In a series circuit, the current flow through different parts of the circuit is different

B:-In a series circuit, the sum of voltage drops across the individual resistance

equals to the applied voltage

C:-In automobile electric system, starter motor circuit uses series connection

D:-In automobile electric system, horn circuit uses series connection

Correct Answer:- Option-B

Question13:-Which of the following circuit does not protected with fuse?

A:-Head light circuit

B:-Horn circuit

C:-Wiper circuit

D:-Starting circuit

Correct Answer:- Option-D

Question14:-Piezo electric effect of a material is the ability to

A:-Generate electric field in response to mechanical stress

B:-To generate electricity in response to light

C:-Generate light in response to electricity

D:-Generate electric field in response to magnetic field

Correct Answer:- Option-A

Question15:-Which of the following is not a cause of sulphation of plates in lead acid battery?

A:-Very high specific gravity of electrolyte

B:-Insufficient electrolyte in battery

C:-Loose battery terminals

D:-Excessive gassing due to overcharging

Correct Answer:- Option-C

Question16:-Which of the following material can be suitably used as dopant to add to pure germanium or silicon atom for making P-type semi conductor?

A:-Phosphorous

B:-Antimoney

C:-Arcenic

D:-Alluminium

Correct Answer:- Option-D

Question17:-Which following statement is false related to alternator assembly used in automobiles?

A:-Modern alternator need current regulator and no need of voltage regulator

B:-Slip rings and brushes are used to supply current to rotor winding

C:-Generally alternators built with three stator circuits

D:-Alternator with star wound stator, can start charging at lower speed

Correct Answer:- Option-A

Question18:-Proximity sensors are used in vehicles for

A:-air conditioning system

B:-parking assisting system

C:-steering system

D:-immobilizer system

Correct Answer:- Option-B

Question19:-The chemical name of R134a is

A:-Cloro fluoro methane

B:-Dichloro difluoro methane

C:-Tetrafluoro ethane

D:-Difluoro methane

Correct Answer:- Option-C

Question20:-The diaphragm of vacuum advance mechanism is mechanically connected to

A:-Breacker plate

B:-Base plate

C:-Breacker cam

D:-Weight assembly

Correct Answer:- Option-B

Question21:-In case of a three axle vehicle, the wheel base is the distance measured horizontally and parallel to the longitudinal axis of the vehicle

A:-between front and rear most axle

B:-between the centre of front axle and centre point between two rear axle

C:-the centre point distance between front axle and middle axle

D:-the centre point distance between front axle and centre point of rear axle

Correct Answer:- Option-B

Question22:-The range extender used in electric vehicle is a

A:-Lead acid battery unit

B:-Lithium iron battery unit

C:-Fuel based auxiliary power unit

D:-Fast charging plug unit

Correct Answer:- Option-C

Question23:-Which one of the following is not consider for the selection motors of modern electric cars?

A:-Speed characteristics

B:-Torque characteristics

C:-Power to weight ratio

D:-Types and durability of brushes used

Correct Answer:- Option-D

Question24:-In Kerala, maximum permissible speed limit of motor vehicles used for carriage of passenger comprising not more than eight seats in addition to driver seat, in 4 lane National Highway outside corporation or municipality limits unless the authority not prescribed to limit the speed is

A:-90 km/hour

B:-95 km/hour

C:-100 km/hour

D:-110 km/hour

Correct Answer:- Option-C

Question25:-The efficiency of brush less DC motor is in the range of

A:-40-50%

B:-50-60%

C:-60-70%

D:-80-90%

Correct Answer:- Option-D

Question26:-Which one of the following material is not used for the preparation of electrolyte of lithium iron battery?

A:-Lithium iron phosphate solution

B:-Ethylene carbonate

C:-Di methyl carbonate

D:-Lithium hexafluoro phosphate

Correct Answer:- Option-A

Question27:-Which of the following is incorrect?

A:-Wankel engine is a rotary engine

B:-Thermal efficiency of diesel engine is approximately 40%

C:-BHP is the power developed in the engine cylinder

D:-SI engine has less vibration and hence smooth running

Correct Answer:- Option-C

Question28:-Which of the following is true for V-engines?

A:-These engines are less economical and heavy

B:-Length of the crank shaft is much longer

C:-The engine height is lower

D:-All of these

Correct Answer:- Option-C

Question29:-"Check engine light" when appear ON, in the dash board indicate

A:-Fault with the oxygen sensors B:-Fault with ignition coil C:-Fault with spark plugs D:-All of these Correct Answer: - Option-D Question 30:-Balancing coil type oil pressure guage is A:-Mechanical type B:-Pneumatic type C:-Electric type D:-None of these Correct Answer:- Option-C Question31:-Rotating the engine crankshaft at minimum speed of 100 r.p.m. to start the engine is called A:-Cranking B:-Bleeding C:-Knocking D:-Misfiring Correct Answer:- Option-A Question32:-What is provided at the end of valve stem? A:-Valve margin is provided B:-Groove is provided to hold the spring lock C:-Oil hole is drilled D:-Pilot bearing is provided Correct Answer:- Option-B Question33:-Which of the following is true for valve timing is engines? A:-Exhaust valve closes before BDC B:-Valve overlap takes place at BDC C:-Exhaust valve closes after BDC D:-Inlet valve closes after BDC Correct Answer:- Option-D Question34:-Diagonal cut joint is associated with A:-Oil control ring **B:-Compression ring** C:-Piston skirt D:-Piston crown

Correct Answer:- Option-B

Question35:-The gap between the ring and the groove in the piston for compression rings

A:-Is usually 0.8 - 1.0 mm

B:-Is usually 0.008 - 0.009 mm

C:-Is usually 0.038 - 0.102 mm

D:-None of these

Correct Answer:- Option-C

Question36:-Material for crank shaft is

A:-Tin - Vanadium Steel

B:-Nickel - Tin Steel

C:-Nickel Chrome Molybdenum Steel

D:-All of these

Correct Answer:- Option-C

Question37:-Fly Wheel is provided at the

A:-Rear of engine

B:-Front of engine

C:-Top of engine

D:-Bottom of engine

Correct Answer:- Option-A

Question38:-Crank shaft main bearings are provided with

A:-An oil strainer and oil filter on it

B:-Locking lip and oil groove on it

C:-Locking lip and oil filter on it

D:-None of these

Correct Answer:- Option-B

Question39:-Which of the following characteristics is required for Pistons?

A:-Low thermal conductivity

B:-Heavy enough to provide maximum inertia load

C:-Good conductor of heat

D:-All of these

Correct Answer:- Option-C

Question 40:- Which engine part is commonly provided in the cylinder head?

A:-Main bearings

B:-Piston Pin

C:-Cylinder Liner

D:-Valves

Correct Answer:- Option-D

Question41:-Where is the thermostat valve fitted in pressurized cooling system?

A:-Water outlet of water pump

B:-Water outlet of water jacket

C:-Water outlet of radiator

D:-Water outlet of cylinder head

Correct Answer:- Option-D

Question42:-Percentage of fuel energy lost to the cylinder walls in an automobile engine is approximately

A:-10%

B:-30%

C:-45%

D:-60%

Correct Answer: - Option-B

Question43:-In which type of radiator cores upper and lower tank are connected by tubes, and fins are provided around this?

A:-Tubular type

B:-Cellular type

C:-Honey comb type

D:-Air cell type

Correct Answer:- Option-A

Question44:-In which type of engine, Keel cooling system is generally used?

A:-Two stroke engines

B:-Heavy duty engines

C:-Marine engines

D:-Air craft engines

Correct Answer:- Option-C

Question45:-The vacuum valve inside the radiator pressure cap is usually set to operate when the vacuum exceeds about

A:-5 kPa

B:-10 kPa

C:-50 kPa

D:-100 kPa

Correct Answer:- Option-A

Question46:-Which of the following is a commonly used corrosion inhibitor in engine coolant?

A:-Ethylene glycol

- **B:-Chromates**
- C:-Glycerine
- D:-Calcium chloride

Correct Answer:- Option-B

Question47:-While engine working, the oil warning light provided on the dash board comes on, it means

- A:-High oil pressure
- B:-High oil level
- C:-Low oil pressure
- D:-Leakage of oil

Correct Answer:- Option-C

Question48:-Which type of lubrication system used a scavenge pump?

- A:-Wet sump lubrication
- B:-Splash lubrication
- C:-Petroil lubrication
- D:-Dry sump lubrication

Correct Answer:- Option-D

Question49:-The temperature at which lubricating oil will began to burn continuously on applying a flame is called

- A:-Flash point
- B:-Fire point
- C:-Combustion point
- D:-Pour point

Correct Answer:- Option-B

Question 50:-Which of the following chemical substance are added to lubricating oil as anti-forming additives?

- A:-Polyisobutane
- B:-Polyalyenyl chloride
- C:-Polyorganosiloxanes
- D:-Thiophosphoric acid

Correct Answer:- Option-C

Question51:-The friction that occurs between the layers of oil in an oil film is called

- A:-Viscous friction
- **B:-Direct friction**
- C:-Boundary friction
- D:-Solid friction

Correct Answer: - Option-A

Question52:-What is the probable cause of engine over heating? A:-Lack of lubrication B:-Clogged oil filter C:-Loose or broken fan belt D:-All of these Correct Answer: - Option-D Question53:-Which part reduced the emission from the exhaust gases? A:-Catalytic converter B:-Inlet manifold C:-Exhaust valve D:-Silencer Correct Answer:- Option-A Question54:-Which part reduced the noise of exhaust gases by reducing the pressure of exhaust gases by slow expansion and cooling? A:-Muffler B:-Air cleaner C:-Inlet valve D:-Exhaust valve Correct Answer: - Option-A Question55:-What is the name of device which helps to increase the pressure of the air fuel mixture from the carburetor before it enters in to the engine cylinder? A:-Fuel feed pump B:-Fuel injection pump C:-Superchargers D:-Inlet manifold Correct Answer:- Option-C Question 56:-What is the average rpm of a centrifugal type supercharger? A:-10 B:-100 C:-1000 D:-10000 Correct Answer: - Option-D Question57:-Where is turbocharger mounted in the vehicle? A:-On the air cleaner B:-On the exhaust manifold C:-In the engine cylinder

D:-In the cylinder block

Correct Answer:- Option-B

Ouestion58:-What is FGT?

A:-Fixed Geometry Turbochargers

B:-Forced Geometry Turbochargers

C:-Fixed Guide Turbochargers

D:-Forced Guide Turbochargers

Correct Answer:- Option-A

Question59:-Which part of the fuel reacts with other components in the atmosphere to produce photo-chemical smog?

A:-Oxygen

B:-Carbon

C:-Hydrocarbon

D:-Hydrogen

Correct Answer:- Option-C

Question60:-What is the name of valve provided to collect crankcase vapors and gases back to the intake manifold vacuum?

A:-EGR

B:-Inlet

C:-Exhaust

D:-PCV

Correct Answer:- Option-D

Question61:-What is the purpose of exhaust gas recirculation (EGR) system?

A:-To reduce oxygen

B:-To reduce carbon

C:-To reduce hydrogen

D:-To reduce NOx

Correct Answer:- Option-D

Question62:-What is the process of Selective Catalytic Reduction (SCR)?

A:-NOx contained in the diesel exhaust are reduced into Nitrogen and water

B:-NOx contained in the diesel exhaust are reduced in to Nitrogen and Hydrogen

C:-NOx contained in the diesel exhaust are reduced into oxygen and water

D:-NOx contained in the diesel exhaust are reduced into oxygen and hydrogen

Correct Answer:- Option-A

Question63:-Diesel fuel is injected into the combustion chamber of a diesel engine

A:-At the end of suction stroke

B:-At the end of compression stroke

C:-Beginning of suction stroke

D:-Beginning of compression stroke

Correct Answer:- Option-B

Question64:-Which of the following character is the ability of the fuel to evaporate?

A:-Viscosity

B:-Octane number

C:-Volatility

D:-Cetane number

Correct Answer:- Option-C

Question65:-Why is there a vent hole provided either in filler neck or cap in an engine fuel tank?

A:-To maintain diesel level

B:-To maintain fuel temperature

C:-To avoid overflow

D:-To maintain atmospheric pressure

Correct Answer:- Option-D

Question66:-Which of the following statement is/are correct about construction of a plunger type fuel feed pump in a diesel engine?

i. The fuel feed pump consists of a barrel, a plunger and plunger return spring.

ii. The fuel feed pump consists of spindle, roller tappet, suction and delivary valve

iii. The fuel feed pump consists of plunger, plunger return spring and glass wool or steel wool

A:-Only (i and iii)

B:-Only (ii and iii)

C:-Only (i and ii)

D:-All of the above (i, ii and iii)

Correct Answer:- Option-C

Question67:-Which of the following sensors are fail, the engine will not start?

A:-IAT and Oxygen

B:-TP and CKP

C:-IAT and ECT

D:-ECT and Oxygen

Correct Answer:- Option-B

Question68:-What is the name of the pipe line from FIP to Injector in a diesel fuel feed system?

A:-Delivery pipe

B:-Low pressure pipe

C:-Sution pipe

D:-High pressure pipe

Correct Answer:- Option-D

Question69:-How much pressure does the high pressure pump develop in a CRDI engine?

A:-1000 - 2000 bar

B:-5000 - 6000 bar

C:-7000 - 8000 bar

D:-9000 - 12000 bar

Correct Answer:- Option-A

Question70:-What is the primary purpose of a Variable Intake Manifold system in a Electronic Fuel Injection?

A:-To increase air-fuel ratio

B:-To enhance the volumetric efficiency

C:-To eliminate carbon monoxide

D:-To reduce carbon deposit

Correct Answer:- Option-B

Question71:-It is small filtering device used to remove water from the diesel fuel before it reaches to the sensitive parts of the diesel engine

A:-Diesel fuel water separator

B:-Diesel fuel feed pump

C:-Diesel injection pump

D:-Engine gasket

Correct Answer: - Option-A

Question72:-Which of the following statement is/are correct about IACV in a EFI engine?

- i. It controls the amount of air bypassing the throttle plate to maintain the desired idle speed
- ii. It is a stepper motor or a solenoid operated valve, located on or near the throttle body
- iii. The ECU sends signals to the IACV to open or close in response to changing engine conditions

A:-Only (i and ii)

B:-Only (i and iii)

C:-Only (ii and iii)

D:-All of the above (i, ii and iii)

Correct Answer:- Option-D

Question73:-MAP sensor measure the

A:-Exhaust manifold pressure

B:-Intake manifold pressure

C:-Stroke volume pressure

D:-Compression pressure

Correct Answer:- Option-B

Question74:-The malfunction indicator lamp in an EFI system, also known as

A:-Check engine lamp

B:-Pilot lamp

C:-Effective lamp

D:-Dipper lamp

Correct Answer:- Option-A

Question75:-Which of the following cause is low oil pressure in an engine?

A:-Stainer pipe mounting loose

B:-High oil viscosity

C:-Piston ring worn out

D:-High oil level

Correct Answer:- Option-A

Question76:-What is the result of defective fuel feed pump is an engine?

A:-Engine noise

B:-Low oil pressure

C:-Low power generation

D:-Engine over heating

Correct Answer:- Option-C

Question77:-Tyre's inner edge will wear out faster due to

A:-Positive caster

B:-Negative caster

C:-Positive camber

D:-Negative camber

Correct Answer:- Option-D

Question 78:- Which of the following gears produced axial thrust while transmitting torque?

A:-Spur gear

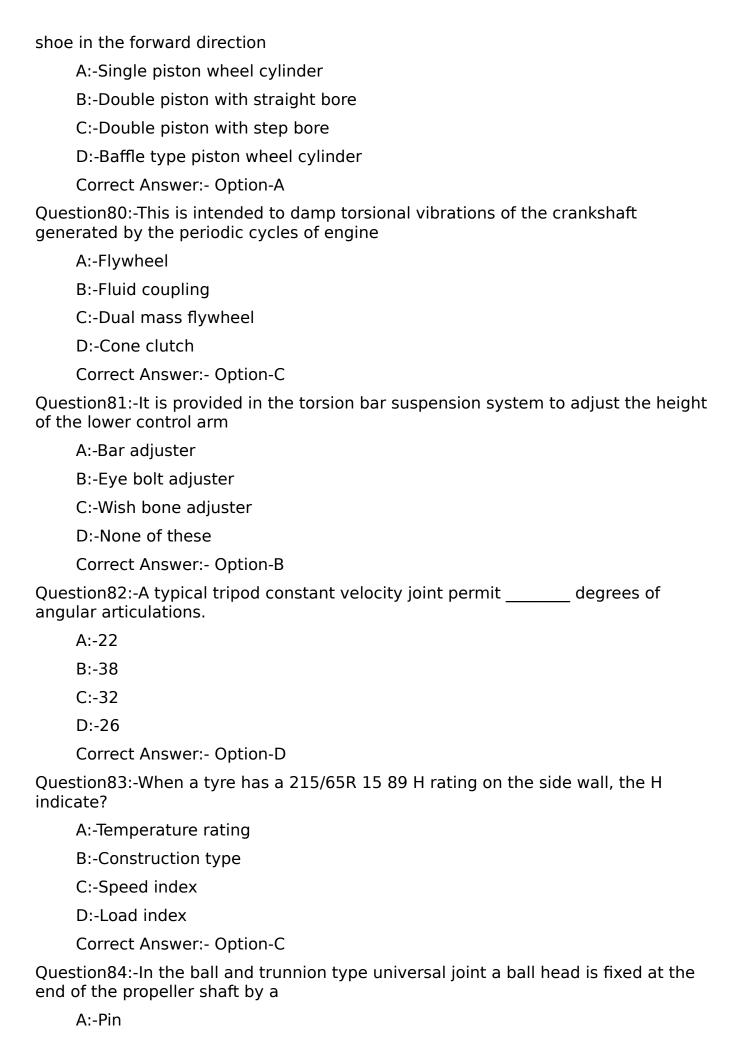
B:-Helical gear

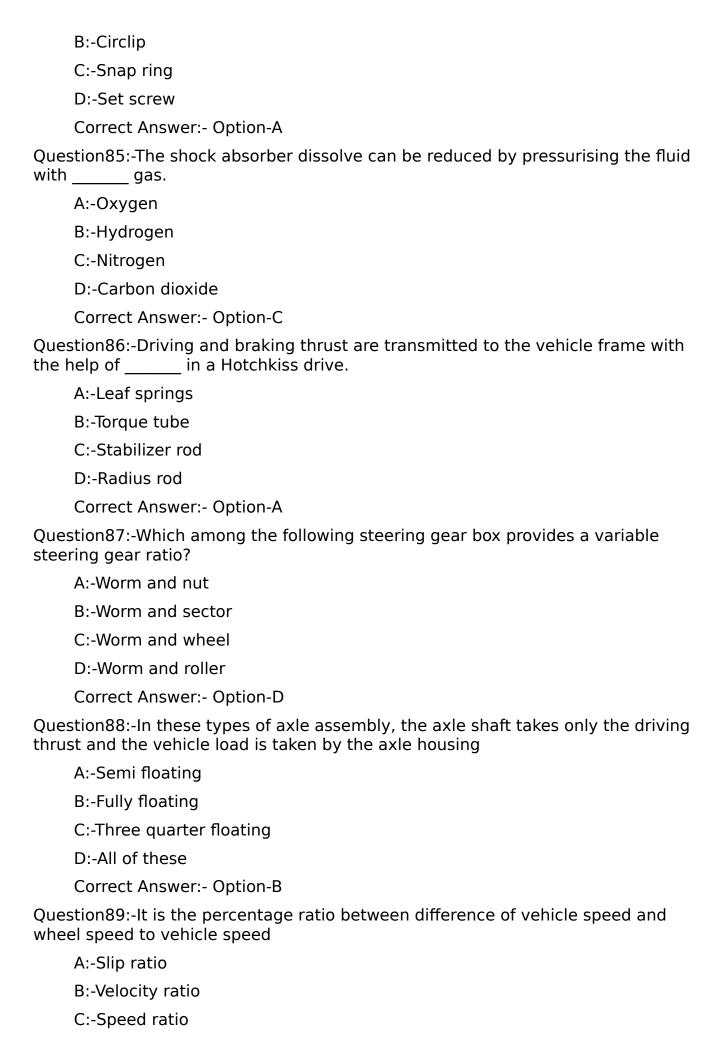
C:-Rack and pinion

D:-All of these

Correct Answer:- Option-B

Question 79:- In these types of wheel cylinder, both brake shoes becomes leading

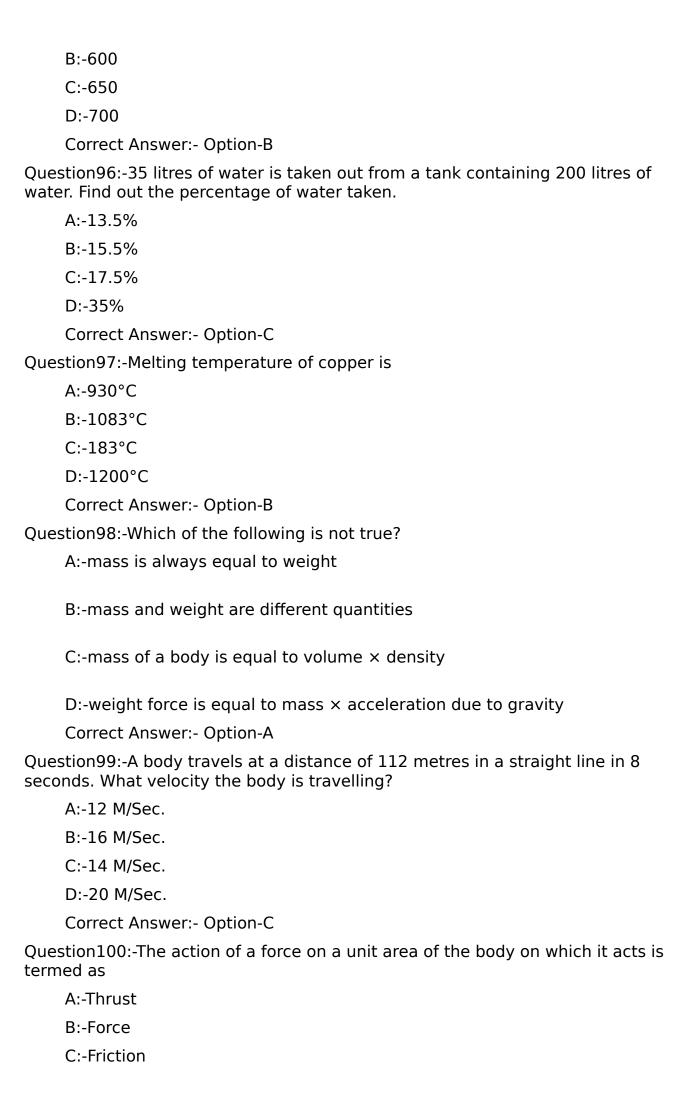




Correct Answer:- Option-A Question 90:-Limited slip differential has a series of friction and steel plates packed between the A:-Sun gear and planetary gear B:-Cage and crown wheel C:-Axle shaft and sun gear D:-Sun gear and cage Correct Answer:- Option-D Question91:-The sensor used by the ABS for measuring the deceleration rate of the vehicle, whenever brakes are applied A:-Wheel speed sensor B:-G-Sensor C:-Proximity sensor D:-Vehicle speed sensor Correct Answer:- Option-B Question92:-Stationary part of an epicyclic gear box with reverse gear is its A:-Sun gear B:-Ring gear C:-Planet carrier D:-Planet gears Correct Answer:- Option-C Question93:-1 Foot = metre A:-0.3048 B:-0.03048 C:-3.048 D:-0.003048 Correct Answer:- Option-A Question94:-Square root of 1024 is A:-26 B:-32 C:-34D:-28 Correct Answer:- Option-B Question95:-If 6 labourers earn Rs. 450 in 1 hr how much will earn 8 labourers in 1 hr?

D:-Aspect ratio

A:-800



D:-Pressure

Correct Answer:- Option-D