

PROVISIONAL ANSWER KEY

Question Paper Code: 3/2023/OL
Category Code: 545/2019
Exam: Mechanic
Date of Test: 06-01-2023
Department: Agriculture Development and Farmers Welfare
Alphacode: A

Question1:-What is the working cycle of compression ignition engine?

- A:-Otto Cycle
- B:-Sterling Cycle
- C:-Diesel Cycle
- D:-Rankin Cycle

Correct Answer:- Option-C

Question2:-The portion below the piston pin boss is called

- A:-Crown of the Piston
- B:-Skirt of the Piston
- C:-Land of the Piston
- D:-Ring Section of the Piston

Correct Answer:- Option-B

Question3:-In a rear wheel drive vehicle if the rear wheels move up and down then

- A:-the angle of drive changes
- B:-the drive line changes length
- C:-both (1) and (2)
- D:-neither (1) nor (2)

Correct Answer:- Option-C

Question4:-Which part is not common between the old model Petrol and Diesel engines?

- A:-Air cleaner
- B:-Battery
- C:-Exhaust Silencer
- D:-Fuel injector

Correct Answer:- Option-D

Question5:-Which sensor is used to sense vibrations?

- A:-Engine Knocking Sensor
- B:-Air Vertex Sensor
- C:-Hall Effect Sensor
- D:-Vehicle Speed Sensor

Correct Answer:- Option-A

Question6:-A clutch is usually designed to transmit maximum torque which is

- A:-Equal to the maximum engine torque
- B:-150 percentage of the maximum engine torque
- C:-75 percentage of the maximum engine torque
- D:-None of the above

Correct Answer:- Option-B

Question7:-Which type of gear will not produce axial thrust while transmitting torque

- A:-Spur gear
- B:-Helical gear
- C:-Worm gear
- D:-Spur bevel gear

Correct Answer:- Option-A

Question8:-Clutch facings are usually attached to the plate by

- A:-Steel Rivets
- B:-Steel screws
- C:-Aluminium screws
- D:-Brass rivets

Correct Answer:- Option-D

Question9:-What will be cause by which noise comes from a gearbox in neutral position?

- A:-Synchronizing unit stuck
- B:-Synchronizer worn-out
- C:-Bearing worn out or dry
- D:-Defective gear shift mechanism

Correct Answer:- Option-C

Question10:-What is the load taken by a taper roller bearing?

- A:-Radial Load
- B:-Axial and Radial Load
- C:-Thrust Load
- D:-Non thrust Load

Correct Answer:- Option-B

Question11:-The efficiency of hydraulic braking system is

- A:-40-50%
- B:-50-60%
- C:-60-70%
- D:-About 90%

Correct Answer:- Option-D

Question12:-If proportioning valve is not working

- A:-Front brakes may lock
- B:-Rear brakes may lock
- C:-Front brakes may drag
- D:-Rear brakes may drag

Correct Answer:- Option-A

Question13:-What is the main cause for wear on one side of tyre?

- A:-Over inflation
- B:-Under inflation
- C:-Improper camber
- D:-Improper caster

Correct Answer:- Option-C

Question14:-Disc brakes self-adjust when the lining wear allows the piston to

- A:-Contact the disc
- B:-Slide outward through the seal
- C:-Cause seal deflection
- D:-Reposition the seal groove in the caliper

Correct Answer:- Option-B

Question15:-What causes "Air suction" in pump of hydraulic power steering system?

- A:-Noise
- B:-Low pressure
- C:-High fluid level
- D:-Steering wheel play

Correct Answer:- Option-A

Question16:-What is the compression ratio of an engine, its clearance volume is 10 c.c. and swept volume is 90 c.c.?

A:-8 : 1

B:-9 : 1

C:-10 : 1

D:-11 : 1

Correct Answer:- Option-C

Question17:-In a six cylinder engine, the power impulse occurs after 'x' degrees of crank shaft rotation. Where 'x' is

A:-360

B:-240

C:-120

D:-90

Correct Answer:- Option-C

Question18:-In a Diesel fuel injection pump, the effective pressure strokes of the plungers are regulated by means of a

A:-Fuel pump

B:-Control rack

C:-Needle valve

D:-Cam shaft

Correct Answer:- Option-B

Question19:-A dish in the piston head is employed to

A:-Decrease piston weight

B:-Provide valve clearance

C:-Adjust piston displacement

D:-Control compression ratio

Correct Answer:- Option-D

Question20:-Which tool is used for removing the piston rings from a piston?

A:-Piston ring expander

B:-Piston ring compressor

C:-Piston ring lifter

D:-Piston ring squeezer

Correct Answer:- Option-A

Question21:-Valve overlap is the number of degrees of crankshaft rotation during which

A:-the valves are moving from fully closed to the timing point

B:-both intake and exhaust valves are closed

C:-both intake and exhaust valves are open

D:-the valve float

Correct Answer:- Option-C

Question22:-What is the effect if thermostat valve is stuck in closed position?

A:-Engine gets over cooling

B:-Engine gets over heating

C:-Engine does not start

D:-Engine does not stop

Correct Answer:- Option-B

Question23:-What is the reason if oil pump does not suck the oil?

A:-Filter clogged

B:-Relief valve struck

C:-More backlash

D:-Less radial clearance

Correct Answer:- Option-C

Question24:-Percentage of fuel energy lost to the cylinder walls in an automobile engine is approximately

- A:-1 percent
- B:-10 percent
- C:-80 percent
- D:-25 percent

Correct Answer:- Option-D

Question25:-The impeller type exhauster has

- A:-One spindle
- B:-Two spindle
- C:-Three spindle
- D:-No spindle

Correct Answer:- Option-A

Question26:-Which are the materials commonly used in the catalytic converter?

- A:-Chromium and vanadium
- B:-Zinc and molybdenum
- C:-Asbestos and ceramics
- D:-Palladium and platinum

Correct Answer:- Option-D

Question27:-The basic difference between the supercharger and the turbocharger is in

- A:-the way they are driven
- B:-the size of the unit
- C:-the number of waste gates
- D:-the pressure they produce

Correct Answer:- Option-A

Question28:-The fuel injection timing in a distributor type pump is controlled by

- A:-changing plunger stroke
- B:-changing speed of rotor
- C:-rotating the cam ring
- D:-changing the number of cams on the ring

Correct Answer:- Option-C

Question29:-Which action the spindle only move up and down in feed pump?

- A:-Idling action
- B:- Partial action
- C:-Normal action
- D:-Pumping action

Correct Answer:- Option-A

Question30:-The information provided by the Oxygen sensor to the feed back control system is about the

- A:-Air flow speed
- B:-Air temperature
- C:-Exhaust gas volume
- D:-Air fuel ratio

Correct Answer:- Option-D

Question31:-What is the cause for tractor pulls to one side during normal driving?

- A:-Wheels tracking
- B:-Loose wheel bearing
- C:-Friction in ball joint
- D:-Uneven tyre pressure

Correct Answer:- Option-D

Question32:-Which type of synchromesh gearbox will produce torque more than three times of other type?

- A:-Multi and double cone

- B:-Porsche type
- C:-Baulk type
- D:-Baulk ring type

Correct Answer:- Option-A

Question33:-Which is the manually operated seed drill?

- A:-Cell wheel precision seeder
- B:-Centrifugal seed drill
- C:-Pneumatic seed drill
- D:-Hand seed drill

Correct Answer:- Option-D

Question34:-In tractor bull gear is the component of

- A:-Engine timing gear
- B:-Gear box
- C:-PTO
- D:-Final drive

Correct Answer:- Option-D

Question35:-In tractors, the function of three-point linkage is to

- A:-Balance the load
- B:-Hitch the implement
- C:-Lift the load
- D:-Carry the load

Correct Answer:- Option-B

Question36:-In tractor 'ram cylinder' is the

- A:-Brake cylinder
- B:-Fluid cylinder
- C:-Hydraulic cylinder
- D:-PTO

Correct Answer:- Option-C

Question37:-As per ASAE standard, the diameter of the PTO shaft is

- A:-34.9 cm with 6 splines
- B:-3.49 cm with 6 splines
- C:-34.9 cm with 21 splines
- D:-3.49 cm with 4 splines

Correct Answer:- Option-B

Question38:-Which type of gear will produce clicking noise during teeth contact?

- A:-Spur gear
- B:-Worm gear
- C:-Helical gear
- D:-Bevel gear

Correct Answer:- Option-A

Question39:-What causes noisy gear box in neutral position?

- A:-Synchroniser worn out
- B:-Bearing worn out or dry
- C:-Synchronising unit struck
- D:-Synchronizer defective

Correct Answer:- Option-B

Question40:-What is aspect ratio in the tyre structure?

- A:-Percentage ratio of tyre height to rim width
- B:-Ratio between tyre height to tyre diameter
- C:-Percentage ratio of tyre height to tyre width

D:-Ratio between tyre width to rim width

Correct Answer:- Option-C

Question41:-Which part of tyre referred as crown?

A:-Thread radius

B:-Thread width

C:-Tyre width

D:-Rim width

Correct Answer:- Option-A

Question42:-What causes air suction in pump of hydraulic power steering system?

A:-High fluid level

B:-Low pressure

C:-Steering wheel ply

D:-Noise

Correct Answer:- Option-D

Question43:-What is the material constituent of semi-metallic brake lining?

A:-Aluminium oxide

B:-Carbon composite

C:-Carbon fibre

D:-Fine polished steel wool

Correct Answer:- Option-D

Question44:-What is the cause of low voltage output from alternator?

A:-Faulty regulator

B:-Worn out bearing

C:-Loose drive pulley

D:-Loose mounting

Correct Answer:- Option-A

Question45:-In power tiller which type of tilling method is used to wet-soft paddy field?

A:-Circular travel tilling method

B:-Continuous tilling method

C:-Alternate tilling method

D:-Return tilling method

Correct Answer:- Option-C

Question46:-Which ploughing method saves fuel and time?

A:-Gathering method

B:-Casting method

C:-Hiching method

D:-Mixed method

Correct Answer:- Option-D

Question47:-What is the purpose of cultivator?

A:-Deep cultivation

B:-Tilling the soil between row crops

C:-Primary tillage operation

D:-Secondary tillage operation

Correct Answer:- Option-B

Question48:-What is the use of harrows?

A:-After seed bed preparation

B:-Deep cultivation

C:-Penetrating hard ground

D:-Seed bed preparation before planting

Correct Answer:- Option-D

Question49:-Which type of agriculture implement used for incorporating straw and green manure in the field?

- A:-Subsoiler
- B:-Cultivator
- C:-Rotavator
- D:-Harrow

Correct Answer:- Option-C

Question50:-What is the cause for abnormal clutch lining wear?

- A:-Excessive pedal free play
- B:-Dry release bearing
- C:-Warped pressure plate
- D:-Oil in the clutch lining

Correct Answer:- Option-C

Question51:-While using the calipers along with steel rules, the accuracy is limited to _____ mm.

- A:-0.05
- B:-0.25
- C:-0.5
- D:-1

Correct Answer:- Option-C

Question52:-The _____ punch is used for marking witness marks.

- A:-30°
- B:-45°
- C:-60°
- D:-90°

Correct Answer:- Option-C

Question53:-Which type of V-block are used for supporting long shafts parallel on machine tables or marking off tables?

- A:-Single bevel single groove 'V'
- B:-Single bevel double groove 'V'
- C:-Unmatched pair 'V' groove
- D:-Matched pair 'V' block

Correct Answer:- Option-D

Question54:-A 50 mm long (normal size) 'V' block capable of clamping workpiece between 5 to 40 mm in diameter and of Grade 'A' will be designated as

- A:-'V' block 5 - 40 A/50 - IS. 2949
- B:-A 5 - 40/50, 'V' block - IS. 2949
- C:-50/5 - 40 A, IS. 2949 - 'V' block
- D:-IS. 2949 - A 5 - 50/50- 'V' block

Correct Answer:- Option-A

Question55:-The _____ of a combination set is used to set work pieces on the machines and measure the depth of slots.

- A:-Protractor head
- B:-Centre head
- C:-Square head
- D:-Circular head

Correct Answer:- Option-C

Question56:-The sizes of a Phillips screw drivers are specified by point size

- A:-1, 2, 3 and 4
- B:-1.25, 2.25, 3.25 and 4.5
- C:-1.5, 2.5, 3.5 and 5
- D:-2, 4, 6 and 8

Correct Answer:- Option-A

Question57:-The peen of a hammer is used for

- A:-shaping and forming only
- B:-shaping, riveting and forming only
- C:-forming, shaping and bevelling only
- D:-forming, shaping, bending and riveting

Correct Answer:- Option-D

Question58:-The size of a Tinman's 'L' square is specified by the

- A:-length of the body and the tongue
- B:-length of the body and width of the tongue
- C:-Width of the body and the tongue
- D:-Width of the body and the length of the tongue

Correct Answer:- Option-A

Question59:-The graduation of a bevel protractor is marked from

- A:-0 to 90°
- B:-0 to 180°
- C:-0 to 270°
- D:-0 to 360°

Correct Answer:- Option-B

Question60:-The basic units of M.K.S. system are

- A:-Centimetre, Gram and Second
- B:-Meter, Kilogram and Second
- C:-Kilometer, Kilogram, and Hour
- D:-Millimeter, Milligram and Minute

Correct Answer:- Option-B

Question61:-Files are generally made up of

- A:-High carbon or high grade cast steel
- B:-Low carbon or low grade cast steel
- C:-Medium carbon or medium grade cast steel
- D:-Low carbon steel or Mild steel

Correct Answer:- Option-A

Question62:-Which type of files is available only in half round shape?

- A:-Single cut file
- B:-Double cut file
- C:-Curved cut file
- D:-Rasp cut file

Correct Answer:- Option-D

Question63:-_____ is the distance a drill advanced into the work in none complete rotation.

- A:-Cutting speed
- B:-RPM
- C:-Peripheral speed
- D:-Feed

Correct Answer:- Option-D

Question64:-Hand taps for a particular thread are available as a set consisting of _____ pieces.

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

Correct Answer:- Option-B

Question65:-The Indian Standard establishes

- A:-Four sets of feeler gauges Nos. 1, 2, 3 and 4
- B:-Three set of feeler gauges Nos. 1, 2 and 3
- C:-Two sets of feeler gauges Nos. 1 and 2
- D:-Only one feeler gauge No. 1

Correct Answer:- Option-A

Question66:-In an outside micrometer, _____ ensures an uniform pressure between the measuring surfaces.

- A:-Sleeve
- B:-Thimble
- C:-Ratchet stop
- D:-Spindle lock but

Correct Answer:- Option-C

Question67:-The least count of a vernier caliper is _____ mm.

- A:-0.01
- B:-0.02
- C:-0.05
- D:-0.1

Correct Answer:- Option-B

Question68:-Concentricity and eccentricity can be checked by a vernier height gauge with the aid of a

- A:-Dial indicator
- B:-Steel rule
- C:-Bevel protractor
- D:-Caliper

Correct Answer:- Option-A

Question69:-The act of joining slip gauges together while building up to sizes is known as

- A:-Joining
- B:-Wringing
- C:-Binding
- D:-Adhering

Correct Answer:- Option-B

Question70:-Sine bar is a

- A:-Round bar made of High speed steel
- B:-Round bar made of Nickel steel
- C:-Rectangular bar made of stabilized chromium steel
- D:-Rectangular bar made of high grade tungsten steel

Correct Answer:- Option-C

Question71:-Which type of washer is used with flat or oval type head screws?

- A:-Lock washer
- B:-Internal type washer
- C:-External type washer
- D:-Countersunk type washer

Correct Answer:- Option-D

Question72:-The type of belt fastener used on heavy duty machines is

- A:-Jackson type
- B:-Lagrelle type
- C:-Wire type
- D:-Crescent plate type

Correct Answer:- Option-B

Question73:-The radial distance between the pitch circle and the root circle of a spur gear is known as

- A:-Land
 - B:-Addendum
 - C:-Dedendum
 - D:-Working depth
- Correct Answer:- Option-C

Question74:-Which type of clutch can be operated through a cable from a distance?

- A:-Electromagnetic multiple disc clutch
 - B:-Dog clutch
 - C:-Single plate clutch
 - D:-Centrifugal clutch
- Correct Answer:- Option-A

Question75:-Which one of the given formula is used to calculate the length of rivet (L' mm) when forming a flat head? (Given : T - total thickness in mm of the piled plates and 'd' - Rivet diameter in mm)

- A:- $T - d (0.6 \sim 1.4)$
 - B:- $T + d (0.6 \sim 1.4)$
 - C:- $T - d (0.8 \sim 1.2)$
 - D:- $T + d (0.8 \sim 1.2)$
- Correct Answer:- Option-D

Question76:-The furnace used to manufacture pig iron is

- A:-Crucible furnace
 - B:-Blast furnace
 - C:-Cupola furnace
 - D:-Pudding furnace
- Correct Answer:- Option-B

Question77:-The percentage of carbon contains in mild steel is

- A:-0.5-0.8
 - B:-0.15-0.3
 - C:-0.4-0.6
 - D:-More than 1
- Correct Answer:- Option-B

Question78:-The purpose of normalizing is to

- A:-Remove the induced stresses
 - B:-Improve machineability
 - C:-Soften the steel
 - D:-Improve ductility and toughness
- Correct Answer:- Option-D

Question79:-To reduce internal stresses of a hardened tool, the method of heat treatment generally applied is

- A:-Stabilizing
 - B:-Annealing
 - C:-Normalizing
 - D:-Tempering
- Correct Answer:- Option-B

Question80:-Heat treatment of metal is necessary

- A:-To produce certain desired properties
 - B:-To make good appearance of compound
 - C:-To increase strength of the metal
 - D:-To make the metal rust proof
- Correct Answer:- Option-A

Question81:-Which marking media is applied on rough forgings and castings?

- A:-White wash
- B:-Prussian blue
- C:-Copper sulphate
- D:-Cellulose lacquer

Correct Answer:- Option-A

Question82:-Fullers are used for

- A:-Necking and grooving
- B:-Forging the head of rivets, bolts, etc.
- C:-making shoulders with right angles
- D:-Upsetting

Correct Answer:- Option-A

Question83:-Which property can be increased in copper by cold forging?

- A:-Ductility
- B:-Malleability
- C:-Tensile stress
- D:-Elasticity

Correct Answer:- Option-C

Question84:-Which one of the following is the function of the tuyers in the forge?

- A:-Permits cooled air
- B:-Controls smokes and sparks
- C:-Act as an outlet of products of combustion
- D:-To clean the forge

Correct Answer:- Option-C

Question85:-The process of decreasing the length of the job in forging

- A:-Drawing out
- B:-Jumping
- C:-Punching
- D:-Drifting

Correct Answer:- Option-B

Question86:-What is the purpose of groover in sheetmetal?

- A:-Releasing of seam
- B:-Compress the seam
- C:-Closing and locking the seam
- D:-Stress relieving during seaming

Correct Answer:- Option-C

Question87:-What is the maximum cutting capacity of straight snips?

- A:-20 SWG
- B:-19 SWG
- C:-18 SWG
- D:-16 SWG

Correct Answer:- Option-A

Question88:-Which rivet is most suitable for riveting soft materials like leather, plastics etc?

- A:-Snap head rivet
- B:-Conical head rivet
- C:-Counter sunk rivet
- D:-Bifurcated rivet

Correct Answer:- Option-D

Question89:-Caulking is an operation of

- A:-pressing the whole surface of the edge of the plate

B:-closing down the edges of the plates and heads of the rivet

C:-closing down the center surface of the plate

D:-pressing the plates

Correct Answer:- Option-B

Question90:-The formula generally used in the shop floor, length of snap head rivet is

A:- $L = T + d (1.3 - 1.6)$

B:- $L = T + 1.5 D$

C:- $L = T + d$

D:- $L = T \times D$

Correct Answer:- Option-B

Question91:-Electrode size refers

A:-diameter of its core wire

B:-diameter of electrode

C:-length of the electrode

D:-thickness of flux coating

Correct Answer:- Option-A

Question92:-Arc blow is caused by

A:-electronic disturbance

B:-magnetic disturbance

C:-electric disturbance

D:-radio disturbance

Correct Answer:- Option-B

Question93:-The welding machine which is used to convert AC Welding Supply to DC Welding Supply

A:-engine generator set

B:-motor generator set

C:-transformer set

D:-rectifier set

Correct Answer:- Option-D

Question94:-Name the flame which contains more acetylene and less oxygen

A:-Oxidizing flame

B:-Neutral flame

C:-Carburizing flame

D:-Common flame

Correct Answer:- Option-C

Question95:-When the electrode is connected to the positive terminal and work piece to the negative terminal of power source, then that is

A:-Straight polarity

B:-Reverse polarity

C:-AC polarity

D:-DC polarity

Correct Answer:- Option-B

Question96:-Threads are cut on a lathe with a single point tool by

A:-setting the correct speed

B:-setting on cut for the full depth of thread

C:-making a series of cuts in the same cut

D:-moving the carriage by means of rack

Correct Answer:- Option-C

Question97:-Which one of the following governs the selection of feed when turning a work?

A:-Tool geometry

B:-Surface finish required

C:-Type of coolant required

D:-Chip formation

Correct Answer:- Option-B

Question98:-Which one of the reason for torn threads while thread cutting on lathe?

A:-Blunt tool

B:-Insufficient side clearance

C:-Heavy depth of cut

D:-Cutting tool geometry

Correct Answer:- Option-C

Question99:-The lead screw of a lathe have a thread of

A:-BSW

B:-BSF

C:-ACME

D:-v-thread

Correct Answer:- Option-C

Question100:-The lathe is specified according to the

A:-horse power and chuck diameter

B:-tool post size

C:-the maximum length of work that can be turn between centres

D:-the size of drill that can be held on the lathe

Correct Answer:- Option-C