

## PROVISIONAL ANSWER KEY

Question 154/2023/OL

Paper Code:

Category 506/2022

Code:

Exam: Junior Instructor Mechanical Agricultural Machinery (SR for ST only)

Date of Test 30-09-2023

Department Industrial Training

Question1:-Fire extinguisher can be used with fire on electrical equipment.

A:-Halon extinguishers

B:-Foam extinguishers

C:-Dry powder extinguishers

D:-Water-filled extinguishers

Correct Answer:- Option-A

Question2:-In which class of fire includes "Fire on electrical equipment?"

A:-Class A fire

B:-Class B fire

C:-Class C fire

D:-Class D fire

Correct Answer:- Option-D

Question3:-In ABC of first aid, 'B' stands for

A:-Burn

B:-Brocken

C:-Barrier

D:-Breathing

Correct Answer:- Option-D

Question4:-Choose the correct statement regarding ECOs.

A:-'Avoiding careless waste' belongs to minor ECOs

B:-'To stopping of leakage points' included in major ECOs

C:-'Replacement of existing household appliances by new energy efficient ones' included in Minor ECOs

D:-'Replacement or major renovation of old buildings' included in Medium ECOs

Correct Answer:- Option-A

Question5:-Which one of the following is NOT a marking material?

A:-Copper sulphate

B:-Lead sulphate

C:-Cellulose Lacquer

D:-Prussian blue

Correct Answer:- Option-B

Question6:-Reading accuracy of engineer's steel rule.

A:-0.5 mm

B:-0.1 mm

C:-0.05 mm

D:-1 mm

Correct Answer:- Option-A

Question7:-Choose the correct statement regarding clearance angle of chisel.

A:-Angle between cutting edges of chisel

B:-The angle between the top face of the cutting point, and normal to the work surface

C:-The angle between the bottom face of the point and tangent to the work-surface

D:-Angle between axis of handle and peen

Correct Answer:- Option-C

Question8:-Which hammer is used to spread metal in one direction at right angles to the line of striking?

A:-Straight pein hammer

B:-Cross pein hammer

C:-Ball pein hammer

D:-Claw hammer

Correct Answer:- Option-A

Question9:-Ratio between length and jaw width of a double end spanner.

A:-9:1

B:-10:1

C:-11:1

D:-12:1

Correct Answer:- Option-B

Question10:-Distance moved by the spindle with one revolution of a thimble in micrometer.

A:-0.05 mm

B:-0.5 mm

C:-0.1 mm

D:-0.01 mm

Correct Answer:- Option-B

Question11:-How many blades are in the universal feeler gauge?

A:-10

B:-15

C:-20

D:-25

Correct Answer:- Option-D

Question12:-Which material is used making for straight edge?

A:-Cast iron

B:-Grey cast iron

C:-Mild steel

D:-Aluminum alloy

Correct Answer:- Option-B

Question13:-Which is the indirect measuring tool?

A:-Inside micrometer

B:-Outside micrometer

C:-Feeler gauge

D:-Telescopic gauge

Correct Answer:- Option-D

Question14:-The distance between adjacent teeth of hack saw blade is known as

A:-Thickness

B:-Pitch

C:-Length

D:-Coarse

Correct Answer:- Option-B

Question15:-Which type of nut has an internal groove cut in which a fiber or nylon ring is inserted?

A:-Square nut

B:-T nut

C:-Wing nut

D:-Self locking nut

Correct Answer:- Option-D

Question16:-In single cut file, what is the angle of teeth to center line?

A:-90°

B:-30°

C:-60°

D:-20°

Correct Answer:- Option-C

Question17:-Which type of washers have made with serrations, cut and twisted?

A:-Flat washer

B:-Taper washer

C:-Plate washer

D:-Toothed lock washer

Correct Answer:- Option-D

Question18:-Which law states that the pressure of a liquid is transmitted equally in all directions?

A:-Boyle's law

B:-Pascal's law

C:-Charle's law

D:-Ohm's law

Correct Answer:- Option-B

Question19:-Which action of liquid penetrant testing, the liquid penetrant dye seeps into the defects of material?

A:-Over flow

B:-Capillary

C:-Forming

D:-Leveling

Correct Answer:- Option-B

Question20:-How many ports have a 4/2 directional control hydraulic valve?

A:-Four

B:-Five

C:-Two

D:-Six

Correct Answer:- Option-A

Question21:-What is meant by FRL unit in pneumatic system?

A:-Filter rectified lubricator

B:-Filter regeneration lubricator

C:-Filter regulator lubricator

D:-Flow regulator lubricator

Correct Answer:- Option-C

Question22:-Which tool is mainly used to make external threading of a cylindrical component?

A:-Tap

B:-Drill bit

C:-Die nut

D:-Die

Correct Answer:- Option-D

Question23:-Which part of a drill bit is mainly using to determine its diameter?

A:-Point

B:-Lip

C:-Web

D:-Land

Correct Answer:- Option-D

Question24:-Which tool is used for chasing or reconditioning the damaged threads and it is not used for cutting new threads?

A:-Die nut

B:-Circular split die

C:-Half die

D:-Button die

Correct Answer:- Option-A

Question25:-Which vice is used for holding small diameter jobs, having a small collect chuck at one end and it carries a set of jaws which are operated by turning the handle?

A:-Hand vice

B:-pin vice

C:-Toolmaker's vice

D:-Bench vice

Correct Answer:- Option-B

Question26:-What is the name of an amber coloured substance of non-corrosive soldering flux extracted from pine tree sap?

A:-Resin

B:-Tallow

C:-Eutectic alloy

D:-Sal ammoniac

Correct Answer:- Option-A

Question27:-What is the other name of sheet metal seam called pittsburgh seam?

A:-Grooved seam

B:-Locked grooved seam

C:-Hammer lock seam

D:-Knocked up seam

Correct Answer:- Option-C

Question28:-What is the shearing operation of a power press that circular holes are punched in a regular pattern or evenly spaced?

A:-Piercing

B:-Blanking

C:-Punching

D:-Perforating

Correct Answer:- Option-D

Question29:-What is the name of black iron sheet which is coated with lead on it?

A:-Tinned sheet

B:-Duralumin sheet

C:-Terne sheet

D:-PVC sheet

Correct Answer:- Option-C

Question30:-Where does electro-static shielding occur in a charged spherical shell?

A:-When electrical potential outside spherical shell is zero

B:-When electrical potential inside spherical shell is zero

C:-Electrical field outside spherical shell is zero

D:-Electrical field inside spherical shell is zero

Correct Answer:- Option-D

Question31:-Which of the following circuit cannot be analysed using Ohm's law?

A:-Bilateral

B:-Unilateral

C:-Linear

D:-Conductors

Correct Answer:- Option-B

Question32:-Super position theorem is applicable for

A:-Linear bilateral network

B:-Non linear bilateral network

C:-Linear unilateral network

D:-All of the above

Correct Answer:- Option-A

Question33:-Which type of meter is used to test the polarity of battery?

A:-Moving iron ammeter

B:-Moving iron voltmeter

C:-Moving coil voltmeter

D:-Dynamo meter type

Correct Answer:- Option-C

Question34:-An example of non ohmic resistance is

A:-Tungsten wire

B:-Diode

C:-Carbon resistance

D:-Copper wire

Correct Answer:- Option-B

Question35:-In which material if the temperature is increased then the resistance will decreased?

A:-Tungsten

B:-Carbon

C:-Nichrome

D:-Manganese

Correct Answer:- Option-B

Question36:-The SI unit of quantity of electricity is

A:-Volt

B:-Ampere

C:-Coulomb

D:-Whatever

Correct Answer:- Option-C

Question37:-For the same rating which capacitor is physically smaller

A:-Ceramic capacitor

B:-Paper capacitor

C:-Both have same size

D:-None of the above

Correct Answer:- Option-A

Question38:-Two resistors are said to be connected in series when

A:-Total current is equal to the sum of branch current

B:-Both carry the same value of current

C:-Sum of IR drops equals the applied EMF

D:-Same current passes in turn through both

Correct Answer:- Option-D

Question39:-The energy in a lead acid battery is stored in the form of

A:-Electrostatic charge

B:-Chemical energy

C:-Non flowing current

D:-Nuclear energy

Correct Answer:- Option-B

Question40:-Both the inductance and resistance of a coil are doubled the value of

A:-Time constant is halved

B:-Initial rate of rise of current is doubled

C:-Final steady current is doubled

D:-Time constant remains unchanged

Correct Answer:- Option-D

Question41:-The phase difference between the primary and secondary voltage of a transformer is

A:-Zero degree

B:-90 degree

C:-180 degree

D:-Between 30 degree and 60 degree

Correct Answer:- Option-C

Question42:-Choose the correct relation

A:-Potential = charge  $\times$  capacity

B:-Charge = potential/capacity

C:-Potential = charge/capacity

D:-Capacity = potential  $\times$  charge

Correct Answer:- Option-C

Question43:-Which is the advanced version of power electronic component used in the output stage in drives?

A:-FET

B:-UJT

C:-SCR

D:-IGBT

Correct Answer:- Option-C

Question44:-Why most of semi-conductor devices are made by silicon compared to Germanium?

A:-High barrier voltage

B:-High resistance range

C:-High thermal conductivity

D:-High current carrying capacity

Correct Answer:- Option-A

Question45:-Which type of biasing is required to an npn transistor for amplification?



A:-Base ground, emitter and collector positive

B:-Base negative, emitter positive and collector negative

C:-Base positive, emitter negative and collector positive

D:-Base positive, emitter negative and collector negative

Correct Answer:- Option-C

Question46:-Which of the following logic gates gives high output with all its input low

A:-NOT

B:-OR

C:-NOR

D:-AND

Correct Answer:- Option-C

Question47:-The portion of weld joint that is melted by the heat of welding is called

A:-Crater

B:-Puddle

C:-Tack weld

D:-Weld face

Correct Answer:- Option-B

Question48:-The adding of iron powder to the electrode coating causes an increase in

A:-Metal penetration

B:-Metal deposition rate

C:-Weld speed

D:-All of these

Correct Answer:- Option-B

Question49:-Which of the following is a batch furnace?

A:-Salt bath furnace

B:-Fluidized Beds

C:-Pit furnace

D:-None of these

Correct Answer:- Option-C

Question50:-In reverse polarity

A:-More weld penetration

B:-Less weld penetration

C:-Deeper Weld Zone

D:-All of these

Correct Answer:- Option-B

Question51:-Pre-ignition is caused by the burning of the fuel in the combustion chamber before the piston has reached the top dead centre, and is due to

- A:-Overheated spark plug points
- B:-Red hot carbon deposits on cylinder walls
- C:-Cylinder walls being too hot
- D:-Any of the mentioned above

Correct Answer:- Option-D

Question52:-Theoretically correct air fuel mixture in a spark ignition engine

- A:-10:1
- B:-15:1
- C:-20:1
- D:-25:1

Correct Answer:- Option-B

Question53:-The process of breaking up of a liquid into fine droplets by spraying is called

- A:-Vaporisation
- B:-Carburetion
- C:-Atomization
- D:-Ionization

Correct Answer:- Option-C

Question54:-Which engine can be operated both in clock-wise and counter clock-wise direction?

- A:-Two stroke engine
- B:-Four stroke engine
- C:-Both two stroke and four stroke engine
- D:-None of the above

Correct Answer:- Option-A

Question55:-The ignition quality of diesel fuel is indicated by

- A:-Octane number
- B:-Calorific value
- C:-Cetane number
- D:-None of these

Correct Answer:- Option-C

Question56:-The function of the compression ring is that it

- A:-Increases the combustion temperature
- B:-Creates swirling

C:-Maintains a seal and prevents the fuel leakage

D:-Maintains a seal and prevents escape of burned gases from the combustion chamber to sump

Correct Answer:- Option-D

Question57:-A cylinder block is normally made of

A:-Aluminium

B:-High carbon steel

C:-Cast iron

D:-Mild steel

Correct Answer:- Option-C

Question58:-In a four stroke diesel engine, the inlet valve

A:-Opens at T.D.C. and closes at B.D.C.

B:-Opens at  $10^\circ$  before T.D.C and closes at  $35^\circ$  after B.D.C.

C:-Opens at  $10^\circ$  after T.D.C. and closes at  $30^\circ$  before B.D.C

D:-None of the above

Correct Answer:- Option-B

Question59:-The oil pump used in the lubricating system of engine

A:-Gear pump

B:-Rotor pump

C:-Plunger type pump

D:-Any one of the above

Correct Answer:- Option-D

Question60:-The most common firing order in a straight six cylinder engine

A:-1-5-3-6-2-4

B:-1-3-6-5-2-4

C:-1-6-4-2-5-3

D:-None of the above

Correct Answer:- Option-A

Question61:-Clutch works on principle of

A:-Cohesion

B:-Adhesion

C:-Friction

D:-All the above

Correct Answer:- Option-C

Question62:-The specific fuel consumption of diesel engine is

A:-160 gm/bhp/hr

B:-200 gm/bhp/hr

C:-240 gm/bhp/hr

D:-290 gm/bhp/hr

Correct Answer:- Option-B

Question63:-Toe-in provide in tractor is approximately

A:-4-8 mm

B:-10-14 mm

C:-15-18 mm

D:-19-22 mm

Correct Answer:- Option-A

Question64:-Hydraulic brake works on the principle of

A:-Newton's law

B:-Pascal's law

C:-Boyles law

D:-None of these

Correct Answer:- Option-B

Question65:-A power tiller operates most satisfactory with

A:-Reaper

B:-M.B. Plough

C:-Disc harrow

D:-Rotary tillage tool

Correct Answer:- Option-D

Question66:-Weight transfer in a tractor implement system is caused by

A:-Application of pull

B:-Tractive force

C:-Traction coefficient

D:-All are correct

Correct Answer:- Option-A

Question67:-An implement that fully supported by the tractor is

A:-Trailed implement

B:-Mounted implement

C:-Semi mounted implements

D:-All are correct

Correct Answer:- Option-B

Question68:-The capacity of a battery is usually expressed in terms of

A:-Volts

B:-Amperes

C:-Weight

D:-Ampere hours

Correct Answer:- Option-D

Question69:-Relative movement of the wheel in direction of travel for given distance under load and no load condition is

A:-Coefficient of traction

B:-Coefficient of rolling resistance

C:-Wheel slip

D:-Tractive efficiency

Correct Answer:- Option-C

Question70:-The parking brakes employed in vehicles are operated

A:-Mechanically

B:-Hydraulically

C:-Pneumatically

D:-None of these

Correct Answer:- Option-A

Question71:-\_\_\_\_\_ is preferred to make MB plough shares as it can be forged

A:-Cast iron

B:-Chilled cast iron

C:-High carbon steel

D:-All of the above

Correct Answer:- Option-C

Question72:-When a plough works around a strip of ploughed land, the method of ploughing is

A:-Gathering

B:-Casting

C:-Dead furrow

D:-None of the above

Correct Answer:- Option-A

Question73:-Which of the following factors affect the draft of a disc plough?

(i) Speed of operation and soil moisture

(ii) Diameter of disc and disc concavity

(iii) Disc angle and tilt angle

A:-(i) and (ii)

B:-(ii) and (iii)

C:-(i) and (iii)

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

Correct Answer:- Option-D

Question74:-A \_\_\_\_\_ is used for deep ploughing and breaking hard pan at depth of 50 cm or more.

A:-Chisel plough

B:-Sub soiler

C:-Duck foot cultivator

D:-None of the above

Correct Answer:- Option-B

Question75:-Which of the following statement/(s) is true regarding a tractor operated rotovator?

(i) Rotovator combines primary and secondary tillage in one operation

(ii) Rotovator provides negative draft

A:-Only (i)

B:-Only (ii)

C:-Both (i) and (ii)

D:-Neither (i) nor (ii)

Correct Answer:- Option-C

Question76:-The tilt angle of a vertical disc plough is

A:-15-25 degrees

B:-42-45 degrees

C:-0 degree

D:-None of the above

Correct Answer:- Option-C

Question77:-Which of the following affect the penetration of a disc harrow in the field?

(i) Lowering hitch point

(ii) Increasing gang angle

(iii) Using smaller diameter discs with lesser concavity

(iv) Decreasing gang angle

A:-(i), (ii) and (iii)

B:-(i), (ii) and (iv)

C:-(i) and (ii) only

D:-(i) and (iii) only

Correct Answer:- Option-A

Question78:-\_\_\_\_\_ is the flanged tube mounted on gang bolt between every two discs of the disc harrows to prevent their lateral movement

A:-Gang

B:-Spool

C:-Plug

D:-None of the above

Correct Answer:- Option-B

Question79:-The commonly made adjustments on cultivator shovels are

A:-Setting for proper row width

B:-Setting for depth

C:-Turning shovel on tyne to displace required amount of soil

D:-All of the above

Correct Answer:- Option-D

Question80:-Vertical suction of an MBP is

A:-3 to 5 mm

B:-6 to 12 cm

C:-5 to 10 mm

D:-3 to 5 cm

Correct Answer:- Option-A

Question81:-Chemical treatment using \_\_\_\_\_ removes the organic and physical materials that clog the emitters in a drip irrigation system

A:-Acid

B:-Chlorine

C:-Iron

D:-All of the above

Correct Answer:- Option-B

Question82:-Controlling an existing or potential high water table or artesian groundwater condition using shallow or deep tube wells or open wells is called \_\_\_\_\_ drainage

A:-Sub surface

B:-Surface

C:-Vertical

D:-Land

Correct Answer:- Option-C

Question83:-Centrifugal pump is a type of \_\_\_\_\_ pump

A:-Positive displacement

B:-Rotodynamic

C:-Rotary

D:-None of the above

Correct Answer:- Option-B

Question84:-\_\_\_\_\_ starter is used in high rating 3 phase motors

A:-On-off switch

B:-Push button

C:-Direct on-line

D:-Star-Delta

Correct Answer:- Option-D

Question85:-Threshing can be accomplished by

A:-Rubbing action

B:-Impact action

C:-Stripping action

D:-All of the above

Correct Answer:- Option-D

Question86:-The \_\_\_\_\_ type forage harvesters use free swinging chains, hammers or knives to cut the crop

A:-Flail

B:-Cutter bar

C:-Cylinder

D:-All of the above

Correct Answer:- Option-A

Question87:-Find the capacity of a field chopper with throat size 20 cm × 5 cm operating at 50 rpm. The cutter head has two knives with length of cut 3 cm. The bulk density of the material is 500 kg/m<sup>3</sup> and the field efficiency of the chopper is 80%

A:-525 kg/h

B:-500 kg/h

C:-600 kg/h

D:-720 kg/h

Correct Answer:- Option-D

Question88:-The free threshed grain carried over the rack in the straw and discharged from the combine harvester is called

A:-Grain loss

B:-Rack loss

C:-Cylinder loss

D:-Shoe loss

Correct Answer:- Option-B

Question89:-The lead adjustment provided to the outer end of the cutter bar, when the mower is not in operation is

A:-1 cm per meter of cutter bar

B:-2 cm per meter of cutter bar



C:-3 cm per meter of cutter bar

D:-5 cm per meter of cutter bar

Correct Answer:- Option-B

Question90:-The distance of throw of water from a sprinkler depends on

- (i) Operating pressure
- (ii) Size and shape of nozzle
- (iii) Angle of nozzle

A:-(i) only

B:-(i) and (ii) only

C:-(i) and (iii) only

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

Correct Answer:- Option-D

Question91:-\_\_\_\_\_ separator is used based on the difference in aerodynamic properties of various constituents of mixture

A:-Spiral separator

B:-Destoner

C:-Pneumatic separator

D:-Inclined draper

Correct Answer:- Option-C

Question92:-\_\_\_\_\_ refers to the classification of cleaned products into various quality fractions

A:-Cleaning

B:-Grading

C:-Screening

D:-Separation

Correct Answer:- Option-B

Question93:-\_\_\_\_\_ is a machinery used for squeezing or pressing the material unit it breaks

A:-Crusher

B:-Grinder

C:-Cutting machines

D:-Flour mill

Correct Answer:- Option-A

Question94:-Hammer mill works under the force of

A:-Crushing

B:-Grinding

C:-Shearing

D:-Impact

Correct Answer:- Option-D

Question95:- \_\_\_\_\_ are used for lifting vertically between two pulleys to more than 50 m

A:-Bucket elevator

B:-Screw conveyor

C:-Belt conveyor

D:-Pneumatic conveyor

Correct Answer:- Option-A

Question96:-Modern facilities for storing the grains is

A:-Pusa bin

B:-Silo

C:-Brick and cement bin

D:-Bunker storage

Correct Answer:- Option-B

Question97:-EMC gives an idea about

A:-Initial moisture content of the material

B:-Final moisture content of the material

C:-Critical moisture content of the material

D:-Whether the material will loose or gain the moisture at a particular set of atmospheric conditions

Correct Answer:- Option-D

Question98:- \_\_\_\_\_ method of drying is based on the sublimation of frozen moisture from wet product

(i) Fluidized bed

(ii) Spray drying

(iii) Freeze drying

(iv) Vacuum drying

A:-Only (i)

B:-Both (ii) and (iv)

C:-Both (i) and (iii)

D:-Only (iii)

Correct Answer:- Option-D

Question99:- \_\_\_\_\_ is used for fumigating grain in tall sealed silos

(i) Chlorine

(ii) Phosphine

(iii) Carbon dioxide

A:-Only (i)

B:-Only (ii)

C:-Both (i) and (iii)

D:-Both (i) and (ii)

Correct Answer:- Option-B

Question100:-Accuracy of the moisture content determination is obtained from

- (i) Direct method
- (ii) Indirect method
- (iii) Chemical method

A:-Only (i)

B:-Only (ii)

C:-Both (i) and (ii)

D:-Only (iii)

Correct Answer:- Option-A