

## FINAL ANSWER KEY

Question 148/2023/OL

Paper Code:

Category 276/2022

Code:

Exam: AC Plant Operator

Date of Test 08-09-2023

Department Kerala State Film Development Corporation Ltd

Question1:-Which one of the following statement is not include the category of general safety?

- (i) Keep the floor and gang ways clean and clear
- (ii) Move with care in the workshop, do not run
- (iii) Cut the hair short
- (iv) Don't walk under suspended loads

A:-Only (iii)

B:-Only (i) and (ii)

C:-Only (iv)

D:-All of the above

Correct Answer:- Option-A

Question2:-Which one of the following statement is correct about the electrical safety?

- (i) Only qualified persons should do electrical work
- (ii) keep the workshop floor clean, and tools in good condition
- (iii) Do not work on live circuits if unavoidable, Use rubber gloves rubber mats etc
- (iv) All of the above

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

B:-Only (iv)

C:-Only (ii)

D:-Only (ii) and (iii)

Correct Answer:- Option-B

Question3:-Which one of the following statement is not true about the scriber?

- (i) In layout work it is necessary to scribe lines to indicate the dimensions of the workpiece to be filed or machined
- (ii) It is made of high carbon steel and hardened
- (iii) It is used for scribing circles arcs and for transferring and stepping distances
- (iv) For drawing clear and sharplines, the point should be ground and honed frequently for maintaining its sharpness

A:-Only (i)

B:-Only (ii)

C:-Only (iii)

D:-Only (iv)

Correct Answer:- Option-C

Question4:-Which one of the following statement is not correct of an Engineering's hammer?

- (i) Hammer is a hand tool used for striking purposes while punching, bending straightening, chipping forging or rivetting
- (ii) The major parts of a hammer are the head and the handle
- (iii) Hammer is made of drop forged carbon steel
- (iv) An Engineer's hammers are specified by their Length

A:-Only (i) and (ii)

B:-Only (ii) and (iii)

C:-Only (iv)

D:-Only (ii)

Correct Answer:- Option-C

Question5:-Which statement is correct about the outside micrometer

- (i) It is a precision instrument used to measure a job within an accuracy of 0.01 mm
- (ii) The micrometer works on the principle of screw and nut
- (iii) The ratchet stop of a micrometer is to ensure that a uniform pressure between the measuring surfaces
- (iv) All of the above

A:-Only (iv)

B:-Only (i) and (ii)

C:-Only (i)

D:-Only (i) and (iii)

Correct Answer:- Option-A

Question6:-Which one of the following statement is wrong about half moon stake?

- (i) It has a sharp head in the form of an arc of a circle
- (ii) This is used when shaping and seaming funnels and tapered articles
- (iii) This stake has bevelled along one side
- (iv) It is used for turning up flanges on metal discs

A:-Only (i)

B:-Only (i) and (ii)

C:-Only (ii)

D:-Only (ii) and (iv)

Correct Answer:- Option-C

Question7:-Which of the following statement is correct about "Dolly"?

- (i) Used to support the head of the rivet which is already formed
- (ii) Used to form the final shape of the rivet during riveting
- (iii) Used for bringing the sheet metal closely together after inserting the rivet in the hole
- (iv) Used for pressing the surface of the edge of the plate

A:-Only (i)

B:-Only (ii)

C:-Only (iii)

D:-Only (iv)

Correct Answer:- Option-A

Question8:-Which of the following statement is correct for Oxy-acetylene gas flame?

- (i) It is used only for brazing silver soldering and underwater gas cutting of steel
- (ii) Used for welding all ferrous and non ferrous metals and their alloys
- (iii) It has carbon and moisture effect
- (iv) It is used for heating

A:-Only (i) and (ii)

B:-Only (ii)

C:-Only (iv)

D:-Only (i) and (iv)

Correct Answer:- Option-B

Question9:-Which of the following Hand tools are used by welders during welding process?

- (i) Double ended spanner
- (ii) Chipping Hammer
- (iii) Tongs
- (iv) All of the above

A:-Only (iv)

B:-Only (ii) and (iii)

C:-Only (i)

D:-Only (i) and (ii)

Correct Answer:- Option-A

Question10:-What is the effect of opened resistor in series electrical circuit?

A:-No effect in opened resistor

B:-Total supply voltage will appear across the opened resistor

C:-No voltage will appear across the opened resistor

D:-Full circuit current will flow in opened resistor

Correct Answer:- Option-B

Question11:-What is the minimum thickness of copper plate earth electrode?

A:-3.25 mm

B:-6.3 mm

C:-6.5 mm

D:-3.15 mm

Correct Answer:- Option-D

Question12:-Which type of damping method is used in PMMC instruments?

- A:-Air friction damping
  - B:-Gravity control damping
  - C:-Spring control damping
  - D:-Eddy current damping
- Correct Answer:- Option-D

Question13:-Which speed is called as synchronous speed in 3 phase induction motor?

- A:-No load speed
  - B:-Full load speed
  - C:-Rotating magnetic field speed
  - D:-Relative speed between stator and rotor
- Correct Answer:- Option-C

Question14:-Which type of conductor bar is used in the inner cage of double squirrel cage induction motor?

- A:-Steel
  - B:-Copper
  - C:-Brass
  - D:-Aluminium
- Correct Answer:- Option-B

Question15:-What is the application of shaded pole motor?

- A:-Hard disk drive
  - B:-Ceiling fan
  - C:-Wet grinder
  - D:-Hair dryere
- Correct Answer:- Option-D

Question16:-Which type of starter is used to start and run the 3 phase slip ring induction motor?

- A:-Direct on-line starter
  - B:-Rotor resistance starter
  - C:-Auto transformer starter
  - D:-Manual star-delta starter
- Correct Answer:- Option-B

Question17:-What is the function of timer in automatic star delta starter?

- A:-Trip at over load
- B:-Switch ON at pre set time
- C:-Switch OFF at pre set time
- D:-Change from star to delta

Correct Answer:- Option-D

Question18:-Which doping material is used to make P-type semi conductor?

A:-Boron

B:-Arsenic

C:-Antimony

D:-Phosphorous

Correct Answer:- Option-A

Question19:-What is the main application of uni junction transistor?

A:-Rectification

B:-Amplification

C:-Regulator circuits

D:-Triggering circuits

Correct Answer:- Option-D

Question20:-What is the unit of heat in M.K.S.system?

A:-B.T.U

B:-C.H.U

C:-K.Joule

D:-K.Cal

Correct Answer:- Option-D

Question21:-Which special tool is using to measure the size of a capillary tube?

A:-Micrometer

B:-Steel rule

C:-Capillary plug gauge

D:-Torque wrench

Correct Answer:- Option-C

Question22:-Using an anemometer we can measure the air velocity. What is the unit of air velocity in the options given below?

A:-FPM

B:-CFM

C:-CVM

D:-CAV

Correct Answer:- Option-A

Question23:-A \_\_\_\_\_ is used where the tightness of nut and bolts is a crucial parameter of assembly or adjustment

A:-Ring spanner

B:-Torque wrench

C:-Adjustable spanner

D:-Box spanner set

Correct Answer:- Option-B

Question24:-The \_\_\_\_\_ of a substance is the ratio of the density of the substance to the density of water at 4 degree celsius.

A:-Specific volume

B:-Specific heat

C:-Specific gravity

D:-Specific density

Correct Answer:- Option-C

Question25:-Which of the given term is also known as the "total heat content" in the measurement of heat contained in a substance?

A:-Specific heat

B:-Entropy

C:-Enthalpy

D:-Latent heat of fusion

Correct Answer:- Option-C

Question26:-The rate at which heat flows a substance to another is known as

A:-Heat transfer coefficient

B:-Overall conductance factor

C:-U factor of the heat transfer surface

D:-All of the above

Correct Answer:- Option-D

Question27:-Which gas law give us the relation between pressure (P) and Volume (V) when temperature (T) is kept constant?

A:-Boyles Law

B:-Charles Law

C:-Regnaults Law

D:-Gay Lusacs Law

Correct Answer:- Option-A

Question28:-What is the boiling point of pure water in Kelvin scale?

A:-100 degree celcius

B:-212 degree Fahrenheit

C:-273 degree Kelvin

D:-373 degree Kelvin

Correct Answer:- Option-D

Question29:-Which refrigeration system is also known as expandable refrigerant

refrigeration system

A:-Vapour compression system

B:-Liquid gas refrigeration system

C:-Vapour absorption system

D:-Dry Ice refrigeration system

Correct Answer:- Option-B

Question30:-In dry ice refrigeration system, which of the following is used to cool the materials?

A:-Solid carbon dioxide

B:-Liquid Nitrogen

C:-Ammonia

D:-Lithium Bromide solution

Correct Answer:- Option-A

Question31:-In lithium bromide absorption refrigeration system, which of the following is used as refrigerant

A:-R134a

B:-Water

C:-Ammonia

D:-Lithium Bromide salt solution

Correct Answer:- Option-B

Question32:-Which of the following compressor has the least volumetric efficiency?

A:-Reciprocating

B:-Screw

C:-Scroll

D:-Rotary

Correct Answer:- Option-A

Question33:-Why the rotary compressors are used as a vacuum pump?

A:-No clearance volume

B:-Less noise

C:-Less power consumption

D:-Lubrication not required

Correct Answer:- Option-A

Question34:-Which of the following compressor uses whirl vein mechanism for controlling capacity?

A:-Rotary

B:-Screw

C:-Scroll

D:-Centrifugal

Correct Answer:- Option-D

Question35:-The ratio of absolute discharge pressure to absolute suction pressure is known as?

A:-Volumetric efficiency

B:-Mechanical efficiency

C:-Compression ratio

D:-Efficiency ratio

Correct Answer:- Option-C

Question36:-Which valves are used to perform pump down operation in a domestic air conditioning system?

A:-Check valves

B:-Service valves

C:-Solenoid valves

D:-Gate valves

Correct Answer:- Option-B

Question37:-The capacity of a condenser is expressed in

A:-kcal/kg

B:-kg/kcal

C:-kcal/kg<sup>°c</sup>

D:-kcal/hr

Correct Answer:- Option-D

Question38:-What is the reason for scale formation in shell and tube condenser?

A:-Fouling in the condenser

B:-Algae in the water

C:-Power failure

D:-Dissolved chemical and salts in the water

Correct Answer:- Option-D

Question39:-The type of heat removal takes place when changes the refrigerant vapour to liquid in water cooled condenser?

A:-Latent heat of fusion

B:-Latent heat of vaporization

C:-Latent heat of condensation

D:-Sensible heat of fusion

Correct Answer:- Option-C

Question40:-The term indicates the difference in temperatures of inlet and outlet of cooling tower water is known as



A:-Approach

B:-Range

C:-Cooling tower efficiency

D:-Set point

Correct Answer:- Option-B

Question41:-During the operation of a cooling tower, the air takes away the fine droplets of water from cooling tower. Which term is used to denote this?

A:-Blow down loss

B:-Drift loss

C:-Spill loss

D:-Evaporation loss

Correct Answer:- Option-B

Question42:-What is the lowest temperature of water is achieved in cooling tower?

A:-Wet bulb temperature of air

B:-Dew point temperature of air

C:-Dry bulb temperature of air

D:-Dry saturation temperature of air

Correct Answer:- Option-A

Question43:-Which expansion valve's operation is controlled by a microprocessor?

A:-Automatic expansion valve

B:-Thermostatic expansion valve

C:-Electronic expansion valve

D:-Dry saturation temperature of air

Correct Answer:- Option-C

Question44:-Which of the following expansion valve is also known as "constant pressure valve"

A:-Automatic expansion valve

B:-Thermostatic expansion valve

C:-Electronic expansion valve

D:-High side float valve

Correct Answer:- Option-A

Question45:-In which line, the refrigerant control is fitted in the vapour compression cycle?

A:-Discharge line

B:-Suction line

C:-Bypass line

D:-Liquid line

Correct Answer:- Option-D

Question46:-During evaporation the refrigerant absorbs heat from the surroundings. What kind of heat is absorbed during evaporation?

A:-Super heat

B:-Sensible heat

C:-Latent heat

D:-Specific heat

Correct Answer:- Option-C

Question47:-Which of the following operating temperature is true, related to the operating condition of frosting type evaporator?

A:-Above 273°K

B:-Below 32°F

C:-Below 100°C

D:-Below 0°K

Correct Answer:- Option-B

Question48:-In which of the following refrigerant group R-410A belongs to?

A:-CFC

B:-HCFC

C:-HFC Blend

D:-Inorganic group

Correct Answer:- Option-C

Question49:-Which of the following quality of refrigerant should be high?

A:-Specific volume

B:-Boiling point

C:-Freezing point

D:-Thermal conductivity

Correct Answer:- Option-D

Question50:-In which year India aim to completely ban HCFC refrigerant?

A:-2030

B:-2040

C:-2042

D:-2045

Correct Answer:- Option-B

Question51:-The GWP of refrigerant 1234yf is?

A:-4

B:-3

C:-1

D:-0

Correct Answer:- Option-A

Question52:-The cylinder colour code of refrigerant 502 is?

A:-Orange

B:-Orchid

C:-Silver

D:-White

Correct Answer:- Option-B

Question53:-Refrigerator thermostat thermal bulb is clamped with?

A:-Drier

B:-Liquid line

C:-Expansion valve

D:-Evaporator

Correct Answer:- Option-D

Question54:-The function of capillary tube in refrigerator is

A:-Increase the pressure of refrigerant

B:-Meters the refrigerant

C:-Act as a receiver

D:-Pumps the refrigerant

Correct Answer:- Option-B

Question55:-Which type of condenser is equipped with refrigerator?

A:-Plate type

B:-Shell and tube

C:-Shell and coil

D:-Evaporative

Correct Answer:- Option-A

Question56:-The reason for insufficient air throw in frost free refrigerator is

A:-Compressor running in low speed

B:-Thermostat is defective

C:-Air distribution duct is partially choked

D:-Timer is defective

Correct Answer:- Option-C

Question57:-What is the function of defrost timer in frost free refrigerator is?

A:-Compressor running in low speed

B:-Thermostat is defective

C:-Air distribution duct is partially choked

D:-Timer is defective

Correct Answer:- Option-C

Question58:-The frequency range maintained in inverter refrigerator is

A:-40 Hz to 150 Hz

B:-80 Hz to 190 Hz

C:-20 Hz to 50 Hz

D:-50 Hz to 80 Hz

Correct Answer:- Option-A

Question59:-The temperature of water maintained in water cooler is?

A:-60 to 65°F

B:-10 to 20°F

C:-45 to 50°F

D:-30 to 40°F

Correct Answer:- Option-C

Question60:-The recommended vacuum level should be maintained in water cooler before charging is

A:-500 microns

B:-750 microns

C:-1000 microns

D:-150 microns

Correct Answer:- Option-D

Question61:-The temperature range maintained in visible cooler is?

A:-12 to 15°C

B:-0 to 10°C

C:--2 to 4°C

D:--10 to 0°C

Correct Answer:- Option-B

Question62:-Freezers are usually designed to operate a temperature range of?

A:--15 to -35°F

B:-0 to 10°C

C:-0 to 2°C

D:--15 to -34°C

Correct Answer:- Option-D

Question63:-The type of evaporator generally used in deep freezer is?

A:-Fin type

B:-Wire mesh type

C:-Plate type

D:-None of the above

Correct Answer:- Option-C

Question64:-What is the reason to form white milky ice in ice plant?

A:-Presence of air

B:-Presence of CO<sub>2</sub>

C:-Presence of impurities

D:-Presence of salt

Correct Answer:- Option-A

Question65:-The safety device which is used to protect the compressor of window air conditioner is?

A:-Relay

B:-OLP

C:-Thermostat

D:-None of these

Correct Answer:- Option-B

Question66:-In summer air conditioning, the air is

A:-Cooled and humidified

B:-Cooled and dehumidified

C:-Humidified and dehumidified

D:-None of these

Correct Answer:- Option-B

Question67:-What is the HP of a fan motor in window air conditioner of 1 ton?

A:-1/4 HP

B:-1/5 HP

C:-1/6 HP

D:-1/32 HP

Correct Answer:- Option-C

Question68:-The capacity of stabilizer required for 1 ton air conditioner is?

A:-5 KVA

B:-1 KVA

C:-4 KVA

D:-3 KVA

Correct Answer:- Option-D

Question69:-The thermostat sensing bulb of window air conditioner senses which

temperature?

A:-Condenser temperature

B:-Supply air temperature

C:-Return air temperature

D:-Room outside air temperature

Correct Answer:- Option-C

Question70:-What will happen when the thermostat cut down a split AC?

A:-The compressor will stop

B:-The condenser fan will stop

C:-The compressor and condenser fan will stop

D:-The compressor condenser fan and indoor blower will stop

Correct Answer:- Option-C

Question71:-The cooling capacity of 1 Ton Air conditioner is?

A:-18000 BTU/Hr

B:-4500 Kilo calorie/Hr

C:-5.25 KW

D:-All of these

Correct Answer:- Option-D

Question72:-What is the minimum quantity of gas required to be in R 407C charging cylinder while gas charging AC?

A:-20%

B:-30%

C:-40%

D:-50%

Correct Answer:- Option-A

Question73:-The air ducts can be balanced by?

A:-Dampers

B:-Grilles

C:-Duct branches

D:-None of these

Correct Answer:- Option-A

Question74:-The device covert incoming alternating current to direct current in inverter AC?

A:-VRV

B:-VFD

C:-VRF

D:-All of these

Correct Answer:- Option-B

Question75:-What is the reason for excess cooling on ice cubes in an ice candy plant?

A:-More refrigerant charging

B:-Thermostat not working

C:-High atmospheric temperature

D:-High compressor pressure

Correct Answer:- Option-B

Question76:-Which instrument is used to check the specific gravity of brine solution in ice plant?

A:-Humidifier

B:-Hydrometer

C:-Pyrometer

D:-Hygrometer

Correct Answer:- Option-B

Question77:-Why ammonia is used as a common refrigerant in an ice plant?

A:-High vapour density

B:-Low evaporator pressure

C:-Low critical pressure

D:-High latent heat value

Correct Answer:- Option-D

Question78:-Which expansion device is used in walk in coolers?

A:-Thermostatic expansion valve

B:-High side float valve

C:-Capillary tube

D:-Low side float valve

Correct Answer:- Option-A

Question79:-What is the reason for stop the compressor motor due to LP cut out switch in cold storage plant?

A:-High discharge pressure

B:-High evaporator pressure

C:-Low discharge pressure

D:-Low evaporator pressure

Correct Answer:- Option-D

Question80:-Which process will be done during hot gas defrosting?

A:-Heater on

B:-Expansion valve will close

C:-Solenoid valve will close

D:-Condenser fan motor stop

Correct Answer:- Option-C

Question81:-In air blast freezing of food, the velocity of air varies from

A:-30 to 120 m/min

B:-18 to 30 m/min

C:-10 to 25 m/min

D:-6 to 12 m/min

Correct Answer:- Option-A

Question82:-During sensible cooling of air in an air conditioning process, the specific humidity will be

A:-Decreases

B:-Remains constant

C:-Increases

D:-100%

Correct Answer:- Option-B

Question83:-The wet bulb depression indicates \_\_\_\_\_ humidity of the air?

A:-Critical

B:-Specific

C:-Absolute

D:-Relative

Correct Answer:- Option-D

Question84:-During adiabatic saturation process on unsaturated air \_\_\_\_\_ remains constant?

A:-Wet bulb temperature

B:-Dry bulb temperature

C:-Relative humidity

D:-Dew point temperature

Correct Answer:- Option-A

Question85:-The wet-bulb depression is zero when relative humidity is

A:-40%

B:-0%

C:-50%

D:-100%

Correct Answer:- Option-D



Question86:-What is the advantage in central AC plant?

A:-The room temperature is constant

B:-The air supply is centralised

C:-Initial expense in less

D:-Energy efficiency high

Correct Answer:- Option-B

Question87:-The aspect ratio, for rectangular ducts, should not be greater than \_\_\_\_\_ in any case

A:-15

B:-16

C:-8

D:-10

Correct Answer:- Option-C

Question88:-Which sensors measure the moisture level using humidity?

A:-Resistive sensor

B:-Capacitive sensor

C:-Thermal sensor

D:-Conductive sensor

Correct Answer:- Option-B

Question89:-In package Air conditioner HP cut out is controlled by

A:-High pressure of discharge

B:-High pressure of suction

C:-High temperature of suction

D:-Pressure of liquid line

Correct Answer:- Option-A

Question90:-What is the effect on adjusting the thermostat differential too close in package A/C?

A:-Normal cooling effect

B:-Unit runs continuously

C:-Unit does not start

D:-Unit starts and stops frequently

Correct Answer:- Option-D

Question91:-The location of thermostat sensing bulb in split package unit is

A:-Return air duct

B:-Liquid line

C:-Suction line

D:-Before the air filter

Correct Answer:- Option-D

Question92:-A mixing box is an example of which kind of damper

A:-A modulating damper

B:-A manual damper

C:-A two-position damper

D:-A relief damper

Correct Answer:- Option-A

Question93:-Air dampers used for HVAC service are

A:-Parallel blade types only

B:-Opposed blade types only

C:-Single blade types only

D:-Opposed blade, parallel blade, and single blade types

Correct Answer:- Option-D

Question94:-Duct are usually of \_\_\_\_\_ cross-section

A:-Circular

B:-Rectangular

C:-Square

D:-Hexagon

Correct Answer:- Option-B

Question95:-Which of the filter is having lowest contamination?

A:-ULPA filters

B:-HEPA filters

C:-Both 1 and 2

D:-Fiberglass filters

Correct Answer:- Option-C

Question96:-The fibers media of HEPA filters usually have a diameter between

A:-0.5 and 2.0 micrometers

B:-10 and 100 micrometers

C:-5 and 20 micrometers

D:-0.1 and 2 micrometers

Correct Answer:- Option-A

Question97:-Air filter in an A/C is used for cleaning of

A:-Conditioned air blown into the room

B:-Evaporator

C:-Hot air thrown out from condenser side

D:-Return air

Correct Answer:- Option-D

Question98:-In auto mobile A/C operates on \_\_\_\_\_ principles?

A:-Iso thermal

B:-Thermo electric

C:-Electro magnetism

D:-Thermo dynamism

Correct Answer:- Option-C

Question99:-Where the location of pressure operated hot gas BPV?

A:-Between evaporator and suction line

B:-Between compressor suction line and liquid line

C:-Between compressor discharge and suction line

D:-Anywhere

Correct Answer:- Option-C

Question100:-How you can find gas leak by visual inspection in Bus A/C?

A:-Oil trace by the union and connections

B:-Check over bent

C:-Trace the hole

D:-Check gauge pressure

Correct Answer:- Option-A