

PROVISIONAL ANSWER KEY

Question 18/2023/OL

Paper Code:

Category 315/2022

Code:

Exam: Refrigeration Mechanic UIP

Date of Test 04-04-2023

Department Health Services

Question1:-Which one of the following should not be followed inside a workshop, as per the general safety rules ?

A:-Do not clean hands in the coolant fluid

B:-A machine in motion can be left as it is, by the worker

C:-Roll up the sleeves tightly above the elbow

D:-Sweep away the metal cuttings

Correct Answer:- Option-B

Question2:-In first aid CPR stands for

A:-Cardio Pulmonary Resuscitation

B:-Cardio Physio Resuscitation

C:-Cardio Pulmonary Respiration

D:-None of the above

Correct Answer:- Option-A

Question3:-The weight of an Engineer's hammer is stamped at its

A:-Face

B:-Pein

C:-Cheek

D:-Eye hole

Correct Answer:- Option-C

Question4:-The selection of a hacksaw blade depends upon the _____ of the metal to be cut.

A:-Shape and hardness

B:-Thickness and elasticity

C:-Size and toughness

D:-Length and rigidity

Correct Answer:- Option-A

Question5:-_____ is measured by using a vernier height gauge along with a dial indicator.

A:-External dimension

B:-Width of slot

C:-Depth

D:-Pitch dimension

Correct Answer:- Option-D

Question6:-The cutting angle of straight snips is

A:-52°

B:-87°

C:-70°

D:-45°

Correct Answer:- Option-B

Question7:-The joining allowance for knocked-up-joint is

A:- $K = 2W + 2T$

B:- $K = 2W + 4T$

C:- $K = 2W + 5T$

D:- $K = 2W + 3T$

Correct Answer:- Option-D

Question8:-How much pressure you will set on the regulator for oxygen gas for fusion run with filler rod on 3.15 mm thick mild steel sheet ?

A:- 0.15 kgf/cm²

B:-0.18 kgf/cm²

C:-0.19 kgf/cm²

D:-0.17 kgf/cm²

Correct Answer:- Option-A

Question9:-Which of the following is an example of plastic welding ?

A:-Forge welding

B:-Thermit welding

C:-Laser welding

D:-Electron beam welding

Correct Answer:- Option-A

Question10:-Which error if the energy meter disc rotating continuously on no load ?

A:-Speed error

B:-Phase error

C:-Friction error

D:-Creeping error

Correct Answer:- Option-D

Question11:-What happens to the voltmeter if it is connected as an ammeter ?

A:-Low reading

B:-No deflection

C:-Meter burns out

D:-Overshoot deflection

Correct Answer:- Option-A

Question12:-Which conductors are used for distribution lines ?

A:-Insulated conductors

B:-Insulated solid conductors

C:-Bare conductors

D:-Two core cable

Correct Answer:- Option-C

Question13:-What is the advantage of stranded conductor over solid conductor ?

A:-Cost is less

B:-More flexible

C:-Less voltage drop

D:-More insulation resistance

Correct Answer:- Option-B

Question14:-Which principle the earth resistance tester works ?

A:-Self induction

B:-Mutual induction

C:-Fall of potential method

D:-Fleming's left hand rule

Correct Answer:- Option-C

Question15:-Which type of single phase motor is having very high starting torque than any other type of single phase motor ?

A:-Universal motor

B:-Reluctance motor

C:-Repulsion start induction run motor

D:-Capacitor start induction run motor

Correct Answer:- Option-A

Question16:-Which speed is called as synchronous speed in three phase induction motor ?

A:-No load speed

B:-Full load speed

C:-Rotating magnetic field

D:-Relative speed between stator and rotor

Correct Answer:- Option-C

Question17:-What is the purpose of using rotor resistance starter to start three phase slip ring induction motor ?

A:-Reduce rotor voltage

B:-Reduce rotor current

C:-Increase the torque

D:-Reduce the power loss

Correct Answer:- Option-C

Question18:-Which is an active component ?

A:-Inductor

B:-Resistor

C:-Capacitor

D:-Transistor

Correct Answer:- Option-D

Question19:-Which is the main application of SCR ?

A:-Amplifier

B:-Oscillators

C:-Multi vibrators

D:-Speed control of motors

Correct Answer:- Option-D

Question20:-Which material is used to make cutting wheel in a tube cutter ?

A:-Steel

B:-Cast iron

C:-Aluminium alloy

D:-Carbon steel

Correct Answer:- Option-D

Question21:-Which instrument is used to check the clearance between cylinder wall and piston of a reciprocating compressor ?

A:-Screw gauge

B:-Feeler gauge

C:-Radius gauge

D:-Sheet gauge

Correct Answer:- Option-B

Question22:-Which instrument is used to find the relative humidity of air ?

A:-Gauge manifold

B:-Pressure gauge

C:-Sling Psychrometer

D:-Micron gauge

Correct Answer:- Option-C

Question23:-How much degree angle is cut out on the face of each hole in a flare block ?

A:-45°

B:-55°

C:-65°

D:-120°

Correct Answer:- Option-A

Question24:-One calorie, is the amount of heat required to raise the temperature of 1 gram of water through

A:-1°F

B:-5°C

C:-4°C

D:-1°C

Correct Answer:- Option-D

Question25:-The pressure of a gas, which just sufficient to liquefy the gas below its critical temperature is

A:-Vacuum pressure

B:-Discharge pressure

C:-Critical pressure

D:-Absolute pressure

Correct Answer:- Option-C

Question26:-Sub cooling is the process of reducing the temperature of liquid

A:-Refrigerant leaving the evaporator

B:-Refrigerant leaving the compressor at Super heated state

C:-Refrigerant leaving the expansion valve

D:-Refrigerant below its saturation temperature

Correct Answer:- Option-D

Question27:-Super heating is

A:-Cooling of vapour below it's condensing point

B:-Heating of vapour above its boiling point

C:-Heating of liquid up to the boiling point

D:-Heat required to change the state

Correct Answer:- Option-B

Question28:-Which law of thermodynamics states that at constant volume, the

absolute pressure of a given mass of a perfect gas varies directly to its absolute temperature ?

A:-Zeroth law

B:-Boyle's law

C:-Gay-lussac law

D:-Charle's law

Correct Answer:- Option-C

Question29:-Three TR is equivalent to _____ of cooling effect.

A:-10.5 KW

B:-3.5 KJ/second

C:-232.6 KJ/min

D:-7.5 KW

Correct Answer:- Option-A

Question30:-Which refrigeration system called as expandable refrigerant refrigeration system ?

A:-Water vapour system

B:-Liquid gas refrigeration system

C:-Dry ice refrigeration system

D:-Steam jet refrigeration system

Correct Answer:- Option-B

Question31:-What is the name of the process in which dry ice is converted into vapour state ?

A:-Sub cooling

B:-Super heating

C:-Sublimation

D:-Quick freezing

Correct Answer:- Option-C

Question32:-Which compressor dome handles high pressure and high temperature vapour ?

A:-Hermetic rotary compressor

B:-Semi hermetic reciprocating compressor

C:-Open type reciprocating compressor

D:-Hermetic reciprocating compressor

Correct Answer:- Option-A

Question33:-The volumetric efficiency of the compressor is defined as the ratio of

A:-Absolute discharge pressure to the absolute suction pressure

B:-Clearance volume to the piston displacement volume

C:-Theoretically calculated volume to actual volume

D:-The suction volume to the piston displacement volume

Correct Answer:- Option-D

Question34:-Which type of compressor is provided with slide valve mechanism for capacity control ?

A:-Reciprocating

B:-Screw

C:-Centrifugal

D:-Rotary

Correct Answer:- Option-B

Question35:-Which part of a centrifugal compressor converts velocity pressure into static pressure ?

A:-Impeller

B:-Rotor

C:-Diffuser

D:-Whirl vane mechanism

Correct Answer:- Option-C

Question36:-Which compressor is known as turbo compressor in air conditioning systems ?

A:-Rotary

B:-Screw

C:-Centrifugal

D:-Scroll

Correct Answer:- Option-C

Question37:-Leaking tubes of a water cooled condenser are isolated using

A:-Brass plugs

B:-Hard rubber bushes

C:-Mild steel plugs

D:-Wooden plugs

Correct Answer:- Option-A

Question38:-Which type of condenser uses air and water as cooling medium ?

A:-Tube in tube condenser

B:-Evaporative condenser

C:-Shell and tube condenser

D:-Forced convection air cooled condenser

Correct Answer:- Option-B

Question39:-The process of removing accumulated minerals and unwanted

materials from the tubes of a water cooled condenser is called

A:-Defrosting

B:-Deburring

C:-Descaling

D:-Retrofitting

Correct Answer:- Option-C

Question40:-What is the name of the operation used to reduce the salt concentration in cooling tower water ?

A:-Descaling

B:-Blow down

C:-Ozonisation

D:-Bleed off

Correct Answer:- Option-D

Question41:-What will be the approach of a cooling tower if the inlet water temperature is 36°C, outlet water temperature is 30°C and ambient wet bulb temperature is 25°C ?

A:-10°C

B:-5°C

C:-6°C

D:-11°C

Correct Answer:- Option-B

Question42:-The range of a cooling tower is the difference between

A:-Inlet water temperature and Outlet water temperature

B:-Outlet water temperature and Ambient air temperature

C:-Inlet water temperature and Ambient air temperature

D:-Ambient air temperature and temperature of air leaving cooling tower

Correct Answer:- Option-A

Question43:-Equaliser tube is a part of

A:-Level master control

B:-Automatic expansion valve

C:-Thermostatic expansion valve

D:-Electronic expansion valve

Correct Answer:- Option-C

Question44:-Which expansion device controls the refrigerant flow according to evaporator pressure ?

A:-High side float valve

B:-Automatic expansion valve

C:-Thermostatic expansion valve

D:-Electronic expansion valve

Correct Answer:- Option-B

Question45:-Which of the following expansion device cannot change the quantity of refrigerant according to the load ?

A:-High side float valve

B:-Low side float valve

C:-Thermostatic expansion valve

D:-Capillary tube

Correct Answer:- Option-D

Question46:-Operating temperature of frosting type evaporator is

A:-Below 32°F

B:-Above 32°F

C:-Above 0°C

D:-Below 212°F

Correct Answer:- Option-A

Question47:-What is the other name of bare tube coil evaporator ?

A:-Fins evaporator

B:-Tube in tube evaporator

C:-Prime surface evaporator

D:-Shell and coil evaporator

Correct Answer:- Option-C

Question48:-Which type of evaporator is used in direct cool refrigerator ?

A:-Plate type

B:-Bare coil

C:-Fin and tube

D:-Pipe in pipe

Correct Answer:- Option-A

Question49:-Which component provide necessary pumping action to refrigerant in direct cool refrigerator ?

A:-Expansion device

B:-Filter drier

C:-Accumulator

D:-Compressor

Correct Answer:- Option-D

Question50:-Which of the following statement is correct about the desirable property of refrigerant ?

A:-It must have low dielectric strength

B:-It must have high latent heat value

C:-It must not miscible with Lubricant

D:-It must have high freezing point

Correct Answer:- Option-B

Question51:-Which of the following statement is correct about the heat insulating material ?

A:-It must have high heat conductivity

B:-It must have low heat conductivity

C:-It must have high moisture absorbing capacity

D:-It must have capacity to absorb fungus and vermin

Correct Answer:- Option-B

Question52:-Which part meter and regulate the pressure of refrigerant admitted to the evaporator ?

A:-Filter drier

B:-Muffler

C:-Capillary tube

D:-Accumulator

Correct Answer:- Option-C

Question53:-Which part protect the compressor from the damage due to the high current consumption ?

A:-OLP

B:-LMS Relay

C:-Thermostat

D:-Door switch

Correct Answer:- Option-A

Question54:-Which substance is known as heat carrying medium in refrigeration system ?

A:-PUFF

B:-Refrigerant

C:-Silica gel

D:-Activated carbon

Correct Answer:- Option-B

Question55:-Which one is example of primary refrigerant ?

A:-Sodium chloride solute

B:-Calcium chloride

C:-Ammonia

D:-Glycol

Correct Answer:- Option-C

Question56:-What is the chemical name of R134a refrigerant ?

A:-Trifluoromethane

B:-Dichlorodifluoromethane

C:-Dichlorotrifluoromethane

D:-Tetrafluoroethane

Correct Answer:- Option-D

Question57:-What is the boiling point of isobutene refrigerant (R600a) ?

A:--26°C

B:-22°C

C:--12°C

D:-16°C

Correct Answer:- Option-C

Question58:-What is the normal ratio of R600a and R290 refrigerant in HC blend ?

A:-50:50

B:-25:75

C:-75:25

D:-35:65

Correct Answer:- Option-A

Question59:-Which lubricant is used with R134a Refrigerant ?

A:-Mineral oil

B:-Wax oil

C:-Paraffin oil

D:-Polyol ester oil

Correct Answer:- Option-D

Question60:-Which component prevent the liquid refrigerant entering the compressor ?

A:-Filter drier

B:-Muffler

C:-Accumulator

D:-Capillary tube

Correct Answer:- Option-C

Question61:-Which type of Vacuum pump can generate a vacuum of 20 to 50 microns ?

A:-Reciprocating

B:-Double stage rotary

C:-Single stage rotary

D:-Scroll

Correct Answer:- Option-B

Question62:-Which type of relay is used with Capacitor start capacitor run sealed compressor motor ?

A:-LMS relay

B:-Current coil relay

C:-Potential relay

D:-Centrifugal relay

Correct Answer:- Option-C

Question63:-In pump down process in split AC, where did the refrigerant stored ?

A:-Condenser

B:-Evaporator

C:-Accumulator

D:-Metering device

Correct Answer:- Option-A

Question64:-What is the GWP of R 22 Refrigerant ?

A:-500

B:-7300

C:-1300

D:-1700

Correct Answer:- Option-D

Question65:-Which refrigerant is the HFC group Zeotropic Mixture ?

A:-R290a

B:-R502

C:-R407C

D:-R123

Correct Answer:- Option-C

Question66:-What is the purpose of soldering the capillary tube to the suction line in frost free refrigerator ?

A:-Super heating vapour and sub cooling liquid

B:-Sub cooling vapour and liquid

C:-Super heating liquid and sub cooling vapour

D:-Super heating vapour and liquid

Correct Answer:- Option-A

Question67:-What is the use of desiccants in filter drier ?

A:-Absorb refrigerant

B:-Absorb lubricant

C:-Absorb acid

D:-Absorb moisture

Correct Answer:- Option-D

Question68:-Which type of defrosting method is used in frost free refrigerator ?

A:-Electric heater method

B:-Reverse cycle method

C:-Manual method

D:-Water defrost method

Correct Answer:- Option-A

Question69:-What is the normal drinking water temperature maintained in the water cooler ?

A:-18 to 22 °C

B:-10 to 12 °C

C:-0 to 2 °C

D:-4 to 6 °C

Correct Answer:- Option-B

Question70:-In which refrigerating machine perishable foods are stored for long period ?

A:-Water cooler

B:-Visible cooler

C:-Deep freezer

D:-Bottle cooler

Correct Answer:- Option-C

Question71:-The operation of expanding the inside diameter of a pipe to take in the outside diameter of another pipe end of same size is known as

A:-Brazing

B:-Flaring

C:-Swaging

D:-Pinching

Correct Answer:- Option-C

Question72:-Which gas is used for leak testing and flushing the refrigeration systems ?

A:-Oxygen

B:-Hydrogen

C:-Helium

D:-Nitrogen

Correct Answer:- Option-D

Question73:-What is the purpose of providing fins on the tubes of a coil ?

A:-To prevent frost formation

B:-Extended surface for heat transfer

C:-For restricting the air flow

D:-For filtering the air

Correct Answer:- Option-B

Question74:-Which instrument make the use of bourdon tube ?

A:-Thermometer

B:-Multimeter

C:-Barometer

D:-Pressure gauge

Correct Answer:- Option-D

Question75:-The component of Ice candy plant which circulates the brine solution throughout the brine tank is

A:-Compressor

B:-Condenser

C:-Accumulator

D:-Agitator

Correct Answer:- Option-D

Question76:-Refrigerant used in Ice plants is

A:-R12

B:-R134a

C:-R600a

D:-R717

Correct Answer:- Option-D

Question77:-According to the order of priority, which one of the following components should be started first in an Ice plant ?

A:-Compressor

B:-Condenser water pump

C:-Agitator motor

D:-Defrost heater

Correct Answer:- Option-C

Question78:-Which psychrometer uses battery operated small fan ?

- A:-Sling psychrometer
- B:-Aspiring psychrometer
- C:-Wall mounted psychrometer
- D:-Laboratory psychrometer

Correct Answer:- Option-B

Question79:-Dehumidification of air can be done only if the temperature of cooling coil is

- A:-Below the dry bulb temperature of air
- B:-Above the dry bulb temperature of air
- C:-Below the dew point temperature of air
- D:-Between the dry bulb and wet bulb temperature of air

Correct Answer:- Option-C

Question80:-GI sheets used for making ducts, are made resistant to rust by coating with

- A:-Zinc
- B:-Copper
- C:-Aluminium
- D:-Tin

Correct Answer:- Option-A

Question81:-The efficiency of HEPA filter is

- A:-90%
- B:-95%
- C:-99.97%
- D:-92%

Correct Answer:- Option-C

Question82:-In automobile A/C systems the pistons are operated by

- A:-Crank shaft
- B:-Connecting Rod
- C:-Wobble plate
- D:-Electric motor

Correct Answer:- Option-C

Question83:-Defrosting cycle is carried out in

- A:-Car Air conditioning systems
- B:-Package Air conditioning systems
- C:-Split Air conditioning systems
- D:-Walk in coolers

Correct Answer:- Option-D

Question84:-Seasonal Fruits and Vegetables are made available round the year by

A:-Ice Plant

B:-Ice candy Refrigeration

C:-Central AC systems

D:-Cold Storage

Correct Answer:- Option-D

Question85:-The psychrometric process in which air is heated without any change in its specific humidity is known as

A:-Adiabatic saturation

B:-Heating and humidification

C:-Heating and dehumidification

D:-Sensible heating

Correct Answer:- Option-D

Question86:-FCU stands for

A:-Freezer Cabinet Unit

B:-Fan Coil Unit

C:-Freezer Control Unit

D:-Fan Control Unit

Correct Answer:- Option-B

Question87:-Glass wool insulation is avoided in duct because of its

A:-Low strength

B:-Low thermal conductivity

C:-High vapour transmission

D:-Low availability

Correct Answer:- Option-C

Question88:-H.E.P.A. Filter stands for

A:-High Efficiency Particulate Air Filter

B:-High Energy Particle Air Filter

C:-High Emissive Particulate Air Filter

D:-Highly Economic Particle Filter

Correct Answer:- Option-A

Question89:-Magnetic clutch is used in

A:-Walk in Coolers

B:-Package Air Conditioning Systems

C:-Car Air Conditioning Systems

D:-Split Air Conditioning Systems

Correct Answer:- Option-C

Question90:-Insulating materials used for cold storage must have

A:-Low thermal conductivity

B:-High thermal conductivity

C:-High moisture absorption

D:-Heavy weight

Correct Answer:- Option-A

Question91:-The dry bulb temperature lines in psychrometric chart are

A:-Horizontal and uniformly spaced

B:-Horizontal and non uniformly spaced

C:-Vertical and uniformly spaced

D:-Vertical and non uniformly spaced

Correct Answer:- Option-C

Question92:-Desert Cooler or Evaporative Cooler is an application of which of the following psychrometric process ?

A:-Heating and humidification

B:-Cooling and dehumidification

C:-Cooling and humidification

D:-Sensible cooling

Correct Answer:- Option-C

Question93:-In a Package A/C, the sensing bulb of thermostat which cycles the compressor is located at the

A:-Air entry side of the cooling coil

B:-Air exit side of cooling coil

C:-Air entry side of condenser coil

D:-Air exit side of condenser coil

Correct Answer:- Option-A

Question94:-The instrument used to measure total pressure inside the duct is

A:-Hygrometer

B:-Anemometer

C:-Velocimeter

D:-Pitot tube manometer

Correct Answer:- Option-D

Question95:-Air filters are used in

A:-Refrigerators

B:-Ice Plant

C:-Walk in coolers

D:-Air conditioning systems

Correct Answer:- Option-D

Question96:-The excessive dehydration of stored food products inside a cold storage happens if the air inside the cold storage is having

A:-Low relative humidity and high air velocity

B:-High relative humidity and high air velocity

C:-High relative humidity and low air velocity

D:-High relative humidity and low volume

Correct Answer:- Option-A

Question97:-In central air conditioning plants, liquid receiver is located at

A:-Inlet of the compressor

B:-Outlet of condenser

C:-Outlet of compressor

D:-Inlet of condenser

Correct Answer:- Option-B

Question98:-Compressor cut out off by HP cut out in Package AC can be caused due to

A:-Gas leakage

B:-Low refrigerant charge

C:-Dirty condenser

D:-Compressor grounded

Correct Answer:- Option-C

Question99:-Velocity pressure of air inside a duct is the

A:-Sum of static and total pressure

B:-Sum of dynamic and total pressure

C:-Difference between static and total pressure

D:-Difference between dynamic and total pressure

Correct Answer:- Option-C

Question100:-The lubricant oil used with R134a refrigerant is

A:-Mineral oil

B:-POE oil

C:-PUF oil

D:-VAV oil

Correct Answer:- Option-B