

Railway Recruitment Cell

Post Name : 01B - Instrument Mechanic

Exam Code : MASSXANS

Exam Date : 21-06-2024

Exam Time : 11:15AM

Question No. 1

The most common base material used for making ICs is-

- A) Germanium
- B) Silicon
- C) Carbon
- D) Gallium

Answer Key: B

Question No. 2

An electrical joint should provide-

- A) Nearly zero resistance
- B) Low resistance
- C) High resistance
- D) Very high resistance

Answer Key: A

Question No. 3

The best cutting angle of a twist drill is-

- A) 80°
- B) 118°
- C) 150°
- D) 10°

Answer Key: B

Question No. 4

The pin vice is used for-

- A) Holding large tools
- B) Drilling pins
- C) Fixing pins
- D) Holding miniature tools

Answer Key: D

Question No. 5

Which tool is used to put in cross-head screws?

- A) Ball peen hammer
- B) Flat-head screwdriver
- C) Phillips-head screwdriver
- D) Architect ruler

Answer Key: C

Question No. 6

Lock nut in the micrometer is provided to-

- A) Lock the micrometer when it is not in use
- B) Hold the workpiece accurately
- C) Lock the reading after setting it over the workpiece
- D) Control the movement of the spindle

Answer Key: C

Question No. 7

Which flowmeter is used for measurements in LPG, gasoline and other petroleum products?

- A) Oval-shaped gear
- B) Lobed impeller
- C) Oscillating piston
- D) Nutating disc

Answer Key: A

Question No. 8

Which of the following is/are a type of inferential flowmeter?

- A) Area flowmeter
- B) Turbine flowmeter
- C) Thermal mass flowmeter
- D) All of the options

Answer Key: B

Question No. 9

The conductivity of a semiconductor _____ with the increase in temperature.

- A) Decreases
- B) Increases
- C) Does not change
- D) None of the options

Answer Key: B

Question No. 10

_____ is an example of a conductor material.

- A) Germanium
- B) Plastic
- C) Gold
- D) Mica

Answer Key: C

Question No. 11

Which of the following quantities remains the same in any component in a series circuit?

- A) Resistance
- B) Power
- C) Current
- D) Voltage

Answer Key: C

Question No. 12

What is the value of the resistor having color bands Brown, Black, Red, and Gold?

- A) 1 k Ω
- B) 100 Ω
- C) 10 k Ω
- D) 4.7 k Ω

Answer Key: A

Question No. 13

What is the time period for a frequency of 200 Hz?

- A) 0.5 s
- B) 0.05 s
- C) 0.005 s
- D) 0.0005 s

Answer Key: C

Question No. 14

What is the equivalent capacitance of the three capacitors each of 3 pF connected in series?

- A) 3 pF
B) 9 pF
C) 1 pF
D) 1/3 pF

Answer Key: C

Question No. 15

A DC ammeter has a resistance of 0.1 ohm and its current range is 0-100 A. If the range is to be extended to 0-500 A, then the shunt resistance should be-

- A) 0.025 Ω
B) 0.25 Ω
C) 0.05 Ω
D) 0.5 Ω

Answer Key: A

Question No. 16

The deflecting torque in a moving iron meter is-

- A) Directly proportional to the square of the current
B) Inversely proportional to the current
C) Inversely proportional to the square of the current
D) Directly proportional to the square of the voltage

Answer Key: A

Question No. 17

Which of the following are used to convert AC into DC supply?

- A) Tunnel diodes
B) Rectifier diodes
C) Varactor diodes
D) Switching diodes

Answer Key: B

Question No. 18

A CRO gives a visual representation of time-varying signals. The display of the signal is _____ dimensional.

- A) Two
B) One
C) Four
D) Three

Answer Key: A

Question No. 19

All the functions of the ports of 8255 are achieved by programming the bits of an internal register called the-

- A) Register C
B) Control word register
C) Accumulator
D) Register B

Answer Key: B

Question No. 20

In a measuring system, the quantity under measurement is termed as the-

- A) Sensor
- C) Measurand

- B) Indicator
- D) Controller

Answer Key: C

Question No. 21

Dipsticks are used for _____ measurement.

- A) Level
- C) Flow
- B) Displacement
- D) Pressure

Answer Key: A

Question No. 22

In the _____ system, a float whose weight is greater than the liquid to be displaced is used.

- A) Laser-level switch
- C) Displacer
- B) Float-level switch
- D) Capacitance-level sensor

Answer Key: C

Question No. 23

Convert the temperature measurement of 150 °C into Kelvin.

- A) 123.15 K
- C) 323.15 K
- B) 223.15 K
- D) 423.15 K

Answer Key: D

Question No. 24

How many 2 Ω resistors are required in series in a circuit for making a total resistance of 6 Ω?

- A) 3
- C) 6
- B) 2
- D) 4

Answer Key: A

Question No. 25

The rate of flow of electric charge is known as-

- A) Resistance
- C) Conductance
- B) Voltage
- D) Current

Answer Key: D

Question No. 26

What is the unit of potential difference in electricity?

- A) Ampere
- C) Volt
- B) Faraday
- D) Ohm

Answer Key: C

Question No. 27

A car headlight bulb working on a 12 V car battery draws a current of 0.5 A. The resistance of the light bulb is-

- A) 6 Ω
- B) 0.5 Ω
- C) 24 Ω
- D) 12 Ω

Answer Key: C

Question No. 28

What is the total resistance of five resistors each of 50 Ω which are connected in parallel?

- A) 35 Ω
- B) 30 Ω
- C) 25 Ω
- D) 10 Ω

Answer Key: D

Question No. 29

What are the types of variable resistors?

- A) Potentiometers
- B) Rheostats
- C) Trimmers
- D) All of the options

Answer Key: D

Question No. 30

Which of the following is a type of fixed resistor?

- A) Potentiometer
- B) Wire wound resistor
- C) Rheostat
- D) Varistor

Answer Key: B

Question No. 31

What is the value of magnetism at the center of a very large bar magnet?

- A) Maximum
- B) Minimum
- C) Negligible
- D) Negative

Answer Key: C

Question No. 32

Which material is used in the core of an electromagnet?

- A) Magnesium
- B) Soft iron
- C) Steel
- D) Copper

Answer Key: B

Question No. 33

How many poles are there in a magnet?

- A) 4
- B) 3
- C) 2
- D) 1

Answer Key: C

Question No. 34

What is the equivalent capacitance of two capacitors of values 1 F and 2 F connected in series?

- A) 0.67 F
- B) 1.5 F
- C) 2.45 F
- D) 2.75 F

Answer Key: A

Question No. 35

_____ is primarily caused by viewing the object at an oblique angle with respect to the scale, which makes the object appear to be at a different position on the scale.

- A) Absolute error
- B) Systematic error
- C) Parallax error
- D) Constant error

Answer Key: C

Question No. 36

What is the sensitivity of the voltmeter for the given meter movement of 0-12 mA?

- A) 83.33 k Ω /V
- B) 8.333 k Ω /V
- C) 12 k Ω /V
- D) 83.33 Ω /V

Answer Key: D

Question No. 37

A/an _____ measures the amount of oxygen in the water when it is in its dissolved form.

- A) Dissolved oxygen meter
- B) Hydrometer
- C) Hygrometer
- D) Oximeter

Answer Key: A

Question No. 38

Which of the following are used for extending the range of measuring instruments?

- A) Potential transformers
- B) Multipliers
- C) Shunts
- D) All of the options

Answer Key: D

Question No. 39

What is the term used for the duration of one cycle of an AC waveform?

- A) Period
- B) Instantaneous value
- C) RMS value
- D) Peak value

Answer Key: A

Question No. 40

Which of the following voltages is represented in India when we say that the supply voltage is between 220 - 240 V?

- A) Peak value
- B) Average value

C) Instantaneous value

D) RMS value

Answer Key: D

Question No. 41

Which form of shipment is common for transport of hazardous waste?

A) Road

B) Rail

C) Inland water

D) Air

Answer Key: A

Question No. 42

Which of the following is a mechanical means of treating industrial effluents?

A) Recycling of waste

B) Sedimentation

C) Oxidation

D) Chlorination

Answer Key: B

Question No. 43

What is the distance through which a screw thread advances axially in one revolution called?

A) Depth of thread

B) Diameter of thread

C) Pitch of thread

D) Lead of thread

Answer Key: C

Question No. 44

Which of the following is used for checking the pitch diameter of the external screw thread?

A) Screw thread micrometer

B) Vernier caliper

C) Thread ring gauge

D) Screw pitch gauge

Answer Key: D

Question No. 45

What is the purpose of the slot provided in angle plates?

A) For accommodating bolts

B) For reducing weight

C) For hanging with hooks

D) For angling the workpiece

Answer Key: A

Question No. 46

Which of the following operations is carried out to make the hole dimensionally more accurate?

A) Boring

B) Reaming

C) Tapping

D) Sintering

Answer Key: B

Question No. 47

Producing circular hole in a solid metal by means of a revolving tool is known as-

- A) Boring
- C) Drilling

- B) Sintering
- D) Reaming

Answer Key: C

Question No. 48

Which of the following is the advantage of Tubing over Piping Systems?

- A) Economy of Space and Weight
- B) Flexibility
- C) Fewer Fittings
- D) All of the options

Answer Key: D

Question No. 49

Which of the following is a category of tube based on dimensional specifications?

- A) Metric tubes
- B) PVC tubes
- C) Seamless tube
- D) Welded tube

Answer Key: A

Question No. 50

Which flux is used for soldering electronic components?

- A) Organic acid
- B) Mild acid
- C) Rosin
- D) Resin

Answer Key: C

Question No. 51

Which method of soldering is used for electronic circuits?

- A) Brazing
- B) Hot soldering
- C) Hard soldering
- D) Soft soldering

Answer Key: D

Question No. 52

Which of the following is a type of solid state switch?

- A) Bipolar junction transistor
- B) DPDT
- C) Push button Switch
- D) SPDT

Answer Key: A

Question No. 53

The rotor of a stepper motor does NOT have-

- A) Brushes
- B) Windings
- C) Commutator
- D) All of the options

Answer Key: D

Question No. 54

A stepping motor is a/an _____ device.

- A) Chemical
- B) Mechanical
- C) Incremental
- D) Analogue

Answer Key: C

Question No. 55

The primary winding of a Current Transformer has-

- A) A large number of turns
- B) An intermediate number of turns
- C) No turns at all
- D) A few turns

Answer Key: D

Question No. 56

The secondary winding of a Potential Transformer has-

- A) A few turns
- B) No turns at all
- C) An intermediate number of turns
- D) A large number of turns

Answer Key: A

Question No. 57

A/an _____ is an instrument that emits a series of brief, intense flashing lights at specific intervals.

- A) Kaleidoscope
- B) Stroboscope
- C) Voltmeter
- D) Ammeter

Answer Key: B

Question No. 58

A synchronous or rotary converter is a single machine with-

- A) Two armatures and four fields
- B) One armature and two fields
- C) One armature and one field
- D) Two armatures and one field

Answer Key: C

Question No. 59

The optical properties of liquid crystals depend on the direction of-

- A) Solid
- B) Water
- C) Light
- D) Air

Answer Key: C

Question No. 60

How many devices can be connected in a single IEEE-488 bus?

- A) 30
- B) 15
- C) 40
- D) 20

Answer Key: B

Question No. 61

How many flip-flops are there in a flag register of 8085 microprocessor?

- A) 7
- B) 4
- C) 10
- D) 5

Answer Key: D

Question No. 62

A tachometer is an instrument which measures the rotation-

- A) Speed of a shaft
- B) Frequency
- C) Time
- D) Density

Answer Key: A

Question No. 63

What is gauge pressure?

- A) The pressure difference between two points in a system
- B) The total pressure in a system
- C) The pressure relative to a vacuum
- D) The pressure relative to atmospheric pressure

Answer Key: D

Question No. 64

The specific volume of a liquid is the reciprocal of-

- A) Specific weight
- B) Specific gravity
- C) Mass density
- D) Weight density

Answer Key: C

Question No. 65

Which of the following components are found in a pressure switch?

- A) Diaphragm
- B) Spring
- C) Lever
- D) All of the options

Answer Key: D

Question No. 66

Which device is used for the measurement of high pressure with high accuracy?

- A) Bourdon tubes
- B) Dead weight gauge
- C) Manganin wire pressure
- D) Ionization gauge

Answer Key: C

Question No. 67

The diameter of displacer depends on _____ factor.

- A) Density of liquid
- B) Height
- C) Gravity
- D) Weight of the liquid

Answer Key: A

Question No. 68

Which of the following can be used for measuring temperature?

- A) Capsule
- B) Bourdon tube
- C) Fluid expansion system
- D) Metallic diaphragm

Answer Key: C

Question No. 69

Resistance temperature detector is a/an _____ transducer.

- A) Mechanical
- B) Electrical
- C) Biological
- D) Chemical

Answer Key: B

Question No. 70

Which of the following methods is used for programming the PLC?

- A) Function block diagrams
- B) Sequential flow charts
- C) Ladder logic
- D) All of the options

Answer Key: D

Question No. 71

What is the function of HART burst mode?

- A) To provide a secondary communication path
- B) To increase the communication speed
- C) To reduce the power consumption of the device
- D) To allow for continuous real-time updates

Answer Key: B

Question No. 72

What is the function of the flow control valve in Hydraulic systems?

- A) To pump hydraulic oil to the hydraulic circuit
- B) It controls the direction of flow of oil
- C) It controls the rate of flow of oil
- D) It converts the mechanical energy to hydraulic energy

Answer Key: C

Question No. 73

An angle plate is made at an angle of-

- A) 30°
- B) 45°
- C) 60°
- D) 90°

Answer Key: D

Question No. 74

A tachometer is an instrument used for measuring-

- A) Temperature
- B) Flow

C) Pressure

D) Speed

Answer Key: D

Question No. 75

A shunt resistance of $(0.001 \times 27) / 0.009$ is equal to-

A) 3 ohms

B) 4.5 ohms

C) 6 ohms

D) 9 ohms

Answer Key: A