

PROVISIONAL ANSWER KEY

Question 48/2025/OL

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Category 195/2024

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Exam: Operator - By Transfer

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Department Kerala Water Authority

Question1:-From the following material which has nearly zero temperature coefficient ?

A:-Sulphur

B:-Carbon

C:-Manganin

D:-Iron

Correct Answer:- Option-C

Question2:-Heater coils are made from

A:-Copper

B:-Mild steel

C:-Tungsten

D:-Nichrome

Correct Answer:- Option-D

Question3:-The resistance of an insulator on increasing the temperature

A:-Decreases

B:-Increases

C:-Remains constant

D:-Become Zero

Correct Answer:- Option-A

Question4:-One British H.P. equal to

A:-735.5 watts

B:-736 watts

C:-746 watts

D:-100 watts

Correct Answer:- Option-C

Question5:-The unit of reluctance is

A:-Ampere turn

B:-Ampere turn/Weber

C:-Weber/Ampere turn

D:-Henry/Ampere turn

Correct Answer:- Option-B

Question6:-In electrical machines laminated cores are used for reducing

A:-Eddy current loss and hysteresis loss

B:-Hysteresis loss

C:-Eddy current loss

D:-Ohmic loss

Correct Answer:- Option-C

Question7:-In transformer, open circuit test are used to find out

A:-Copper loss

B:-Iron loss

C:-Windage loss

D:-Magnetic loss

Correct Answer:- Option-B

Question8:-Which of the following relay used to find out internal fault in transformer ?

A:-Magnetic relay

B:-Differential relay

C:-Thermal relay

D:-Buchholz relay

Correct Answer:- Option-D

Question9:-Which of the following gives best indication of a fully charged lead acid battery ?

A:-Specific gravity

B:-Level of the electrolyte

C:-Smell of the electrolyte

D:-Resistance of positive plate

Correct Answer:- Option-A

Question10:-What is the benefits of using SMF batteries ?

A:-High cost and less weight

B:-Low chance for plate corrosion

C:-Sulphation

D:-Less maintenance and spill-proof

Correct Answer:- Option-D

Question11:-Shunt is used for the range extension of

A:-DC ammeter

B:-AC voltmeter

C:-DC voltmeter

D:-AC ammeter

Correct Answer:- Option-A

Question12:-Which of the following is a good conductor ?

A:-Glass

B:-Graphite

C:-Asbestos

D:-Porcelain

Correct Answer:- Option-B

Question13:-The transformer oil used in a transformer provides

A:-Cooling

B:-Insulation

C:-Cooling and lubrication

D:-Insulation and cooling

Correct Answer:- Option-D

Question14:-Which of the following is correct ?

1. Megger-for checking insulation resistance
2. Wattmeter-for measuring energy
3. Ampere hour meter-resistance
4. Tachometer-revolution per minute

A:-Both 1 and 2

B:-Both 4 and 1

C:-Both 3 and 4

D:-Both 2 and 3

Correct Answer:- Option-B

Question15:-Which of the following bearing used in measuring instrument ?

A:-Copper bearing

B:-Graphite bearing

C:-Molybdenum bearing

D:-Jewel bearing

Correct Answer:- Option-D

Question16:-Which of the following is a diamagnetic substance ?

A:-Cobalt

B:-Aluminium

C:-Steel

D:-Bismuth

Correct Answer:- Option-D

Question17:-Conductance is analogous to

A:-Permeance

B:-Reluctance

C:-Resistance

D:-Capacitance

Correct Answer:- Option-A

Question18:-Good insulating materials have

A:-High dielectric strength

B:-Low dielectric strength

C:-Medium dielectric strength

D:-Good reluctance

Correct Answer:- Option-A

Question19:-Which of the following shows negative temperature coefficient of resistance ?

A:-Gold

B:-Thermistor

C:-Phosphor bronze

D:-Silver

Correct Answer:- Option-B

Question20:-When the distance between the plates of a capacitor increases its capacitance

A:-Increases

B:-No change

C:-Decreases

D:-Go to infinity

Correct Answer:- Option-C

Question21:-The unit of inductive reactance in AC circuit is

A:-Farad

B:-Watts

C:-Ohms

D:-Seconds

Correct Answer:- Option-C

Question22:-The value of form factor for a sinusoidal alternating current is

A:-1

B:-1.41

C:-1.21

D:-1.11

Correct Answer:- Option-D

Question23:-The reciprocal of impedance in an alternating current circuit is

A:-Resistance

B:-Admittance

C:-Reactance

D:-Capacitance

Correct Answer:- Option-B

Question24:-In three phase supply the reactive power is given by

A:- $\sqrt{3} V_L I_L \sin \theta$

B:- $\sqrt{3} V_L I_L$

C:- $\sqrt{3} V I_{pb}$

D:- $\sqrt{3} V_L I_L \sin \theta \cos \theta$

Correct Answer:- Option-A

Question25:-The relation of current in Delta connection is

A:- $I_L = I_{pb}$

B:- $I_L = \sqrt{3} I_{pb}$

C:- $I_L = V_L$

D:- $I_L = V_{pb}$

Correct Answer:- Option-B

Question26:-The colour used for mandatory sign is

A:-White symbol on blue background

B:-Red border and cross bar

C:-Yellow background with black border

D:-White symbols on green background

Correct Answer:- Option-A

Question27:-The type fire extinguishers use for class 'B' type fire

A:-Foam fire extinguishers

B:-Dry powder extinguishers

C:-Carbon dioxide fire extinguishers

D:-Water filled extinguishers

Correct Answer:- Option-C

Question28:-The electro chemical equivalent of silver is

A:-1.414

B:-1.216

C:-1.561

D:-1.118

Correct Answer:- Option-D

Question29:-The electrolyte used in a lead acid cell is

A:-Sulphuric acid

B:-Lead sulphate

C:-Ammonium chloride

D:-Manganese dioxide

Correct Answer:- Option-A

Question30:-For obtaining a higher output current which connection is suitable for batteries ?

A:-Series connection

B:-Parallel connection

C:-Series-parallel connection

D:-Twisted connection

Correct Answer:- Option-B

Question31:-In two wattmeter method for three phase power measurement one of the wattmeter reading is zero then power factor is

A:-1

B:-0

C:-0.5

D:-0.8

Correct Answer:- Option-C

Question32:-Moving coil instrument is used in which type supply ?

A:-AC

B:-Lamp

C:-Choke

D:-DC

Correct Answer:- Option-D

Question33:-The material used for spiral hair springs in spring control instrument is

A:-Beryllium-copper

B:-Phosphor

C:-Aluminium

D:-Silver

Correct Answer:- Option-A

Question34:-The major cause for creeping in energy meter is

A:-Power

B:-Over friction compensation

C:-Frequency

D:-Intensity of light

Correct Answer:- Option-B

Question35:-Energymeter belongs to which type instruments ?

A:-Indicating Instruments

B:-Recording Instruments

C:-Integrating Instruments

D:-Absolute Instruments

Correct Answer:- Option-C

Question36:-In generating stations and sub stations which type of earthing is preferred ?

A:-Pipe earthing

B:-Earth plate

C:-Earth resistance

D:-Plate earthing

Correct Answer:- Option-D

Question37:-For stair case wiring the type of switch used is

A:-One way switch

B:-Two way switch

C:-Limit switch

D:-Push button switch

Correct Answer:- Option-B

Question38:-The switch which is called as snap switch is

A:-Toggle switch

B:-One way switch

C:-Two way switch

D:-Intermediate switch

Correct Answer:- Option-A

Question39:-The type of MCB used for motor protection is

A:-L series MCB

B:-G series MCB

C:-B series MCB

D:-K series MCB

Correct Answer:- Option-B

Question40:-The type of wiring used for temporary installations is

A:-Concealed wiring

B:-Batten wiring

C:-Cleat wiring

D:-Lead sheathed wiring

Correct Answer:- Option-C

Question41:-How to determine copper loss in a transformer ?

A:-Ratio test

B:-Short circuit test

C:-Impulse test

D:-Open circuit test

Correct Answer:- Option-B

Question42:-Which rule is used to find the direction of induced emf in D.C. generator ?

A:-Right hand palm rule

B:-Cork screw rule

C:-Fleming's right hand rule

D:-Fleming's left-hand rule

Correct Answer:- Option-C

Question43:-How many parallel paths in duplex lap winding of a 4 pole DC generator ?

A:-8

B:-2

C:-4

D:-12

Correct Answer:- Option-A

Question44:-What is the formula to calculate back EMF in a DC motor ?

A:- $E_b = \frac{ZNP}{\Phi 60A}$

B:- $E_b = \frac{NP}{Z\Phi 60A}$

C:- $E_b = \frac{60A\Phi}{ZNP}$

D:- $E_b = \frac{\Phi ZNP}{60A}$

Correct Answer:- Option-D

Question45:-Why the holding coil of a 3 point starter is connected in series with shunt field ?

A:-To limit the load current

B:-To protect the motor from high speed

C:-To run motor at low voltage

D:-To hold the handle plunger firmly

Correct Answer:- Option-B

Question46:-Which speed control system provides a smooth variation of speed from zero to above normal ?

A:-Field diverter control

B:-Armature control

C:-Field control

D:-Ward-Leonard system control

Correct Answer:- Option-C

Question47:-Which loss is determined by no load test of 3 phase induction motor ?

A:-Copper loss

B:-Windage loss

C:-Friction loss

D:-Iron loss

Correct Answer:- Option-D

Question48:-What is the function of centrifugal switch in single phase motors ?

A:-Break the starting winding

B:-Maintain constant speed

C:-Break the running winding

D:-Protect the motor from over loading

Correct Answer:- Option-A

Question49:-What is the formula to calculate emf equation of an alternator ?

A:- $E = 4.44 K_d K_c T \Phi_m$

B:- $E = 4.44 K_d K_c F T \Phi_m$

C:- $E = 1.11 K_d K_c F \Phi_m$

D:- $E = 2.22 K_d K_c F \Phi_m$

Correct Answer:- Option-B

Question50:-What is the function of damper windings in synchronous motor ?

A:-Maintain power factor

B:-Maintain constant speed

C:-Excite the field winding

D:-Start the synchronous motor

Correct Answer:- Option-D

Question51:-What is the number of flip-flops required in a decade counter ?

A:-1

B:-3

C:-10

D:-4

Correct Answer:- Option-D

Question52:-Which IC is used for the function of 4 bit shift register ?

A:-IC 7483

B:-IC 7495

C:-IC 7493

D:-IC 7447

Correct Answer:- Option-B

Question53:-The number of comparisons carried out in a 4-bit flash type A/D converter is

A:-15

B:-16

C:-4

D:-3

Correct Answer:- Option-A

Question54:-An Exclusive OR gate produces high output only when two inputs are

A:-High

B:-Low

C:-Different

D:-Equal

Correct Answer:- Option-C

Question55:-What is the octal equivalent of the Hexadecimal number $(ABCD)_{16}$?

A:-527461

B:-125715

C:-526352

D:-126725

Correct Answer:- Option-B

Question56:-The device commonly used for triggering a TRIAC is

A:-SCR

B:-FET

C:-MOSFET

D:-DIAC

Correct Answer:- Option-D

Question57:-The number of layers in a thyristor (SCR) is

A:-2

B:-3

C:-4

D:-5

Correct Answer:- Option-C

Question58:-If V_m is the peak AC voltage of secondary of the transformer in bridge rectifier then PIV rating per diode is

A:- $\sqrt{2}V_m$

B:- V_m

C:- $2V_m$

D:- $V_m / \sqrt{2}$

Correct Answer:- Option-B

Question59:-Which of the following diode used as voltage regulator in power supply ?

A:-Rectifier diode

B:-Tunnel diode

C:-Zener diode

D:-PIN diode

Correct Answer:- Option-C

Question60:-Which is equal to the ratio of the real power to the apparent power ?

A:-Load factor

B:-Optimise factor

C:-Utility factor

D:-Power factor

Correct Answer:- Option-D

Question61:-Which statement is correct about the classification of pump according to the base on the principle of operation ?

i. Centrifugal pump

ii. Displacement pump

iii. Stem engine pump

iv. Rotary pump

A:-i, ii, iii

B:-i, iv

C:-i, ii

D:-iii, iv

Correct Answer:- Option-C

Question62:-In centrifugal pump, the suction head is generally limited to _____ meter.

- A:-8.90 m
- B:-7.90 m
- C:-6.00 m
- D:-10.00 m

Correct Answer:- Option-B

Question63:-In submersible pump, the bore holes are made for diameters from _____ to _____

- A:-10 to 35 cm
- B:-10 to 45 cm
- C:-20 to 35 cm
- D:-8 to 45 cm

Correct Answer:- Option-A

Question64:-Which type of set screw is used against a shaft that has been spotted to receive it ?

- A:-Flat point set screw
- B:-Cone point set screw
- C:-Oval point set screw
- D:-Full dog point set screw

Correct Answer:- Option-C

Question65:-Which type of lock nut have a slot is cut half way across the nut ?

- A:-Lock nut
- B:-Self locking nut
- C:-Castle nut
- D:-Sawn nut

Correct Answer:- Option-D

Question66:-Choose the correct statement about sheet metal.

- | | |
|--------------------------|--|
| 1. Lead sheet | a. Used in dairies, food processing |
| 2. Stainless sheet | b. Used for making acid tank |
| 3. Aluminium sheet | c. Used for making buckets, furnaces |
| 4. Galvanized iron sheet | d. Used for making house hold appliances |

- A:-1-c, 2-a, 3-d, 4-b
- B:-1-d, 2-b, 3-c, 4-a
- C:-1-b, 2-a, 3-d, 4-c
- D:-1-b, 2-c, 3-d, 4-a

Correct Answer:- Option-C

Question67:-Which type of rivets are used for joining chains in place of pins ?

- A:-Pan head rivets
- B:-Conical rivets

C:-Tinman s rivet

D:-Bifurcated rivet

Correct Answer:- Option-D

Question68:-Which statement is correct about solder ?

- a. Solder has relatively high tensile strength
- b. Soldering is used to join surfaces not under high strength forces
- c. Most soft solders are alloy of tin and zinc
- d. The solder melt at temperature higher than 427°C

A:-a, b

B:-b only

C:-d only

D:-b, c

Correct Answer:- Option-B

Question69:-The minimum distance from a rivet hole centre to the nearest edge of the plate is called

A:-Lag

B:-Pitch

C:-Lead

D:-Margin

Correct Answer:- Option-D

Question70:-What is used for bending and folding edges on a metal ?

A:-Bench stake

B:-Clips

C:-Brake

D:-Fuller

Correct Answer:- Option-C

Question71:-How can we identify a four stroke engine ?

A:-Valves

B:-Ports

C:-Cavities

D:-Passages

Correct Answer:- Option-A

Question72:-What is the volume of the space above the piston at TDC ?

A:-Swept volume

B:-Clearance volume

C:-Total volume

D:-Displace volume

Correct Answer:- Option-B

Question73:-Which is the compression pressure of C.I. engine ?

A:-90 to 160 psi

B:-180 to 280 psi

C:-290 to 390 psi

D:-400 to 550 psi

Correct Answer:- Option-C

Question74:-What is the process of driving exhaust gases in two stroke engine out of cylinder ?

A:-Combustion

B:-Exhausting

C:-Intaking

D:-Scavenging

Correct Answer:- Option-D

Question75:-What is the working cycle of compression ignition engine ?

A:-Diesel cycle

B:-Otto cycle

C:-Sterling cycle

D:-Ranklin cycle

Correct Answer:- Option-A

Question76:-Which is the starting system used in heavy vehicles ?

A:-Hand cranking

B:-Gasoline engine cranking

C:-Compressed air cranking

D:-Electric motor cranking

Correct Answer:- Option-D

Question77:-What is indicated horse power ?

A:-Power developed in the propeller shaft

B:-Power developed in the flywheel

C:-Power developed in the cylinder

D:-Power developed in the wheel

Correct Answer:- Option-C

Question78:-The ratio between BHP and IHP is called

A:-Thermal efficiency

B:-Mechanical efficiency

C:-Power efficiency

D:-Volumetric efficiency

Correct Answer:- Option-B

Question79:-Which type of oil pump takes drive from engine crank shaft ?

A:-Plunger pump

B:-Gear pump

C:-Vane pump

D:-Crescent pump

Correct Answer:- Option-D

Question80:-Which of the following is not a reason for high oil pressure ?

A:-Worn out main bearing

B:-High viscosity of oil

C:-Oil gallery blocked

D:-Blocked relief valve

Correct Answer:- Option-A

Question81:-Why the face of pulley is "Crowned" in power transmission ?

A:-Increase the tension

B:-Decrease the tension

C:-Allow the pulley free rotation

D:-Keep the belt centralised

Correct Answer:- Option-D

Question82:-What is the purpose of jockey pulley in belt drive ?

A:-To maintain the tension

B:-To decrease the tension

C:-Keep the belt centralised

D:-Allow free rotation of pulley

Correct Answer:- Option-A

Question83:-Which starting method is the best method in induction motor ?

A:-Reactance starting

B:-Direct online starting

C:-Star-Delta starting

D:-Autotransformer starting

Correct Answer:- Option-C

Question84:-Which of the following is a positive displacement pump ?

A:-Propeller pump

B:-Reciprocating pump

C:-Centrifugal pump

D:-Jet pump

Correct Answer:- Option-B

Question85:-How to adjust the tension of belt between two fixed pulleys ?

A:-By sliding the pulley

B:-By fixing idler pulley

C:-By adjusting the screw of pulley

D:-By adjusting the length of belt

Correct Answer:- Option-B

Question86:-Which speed is called as synchronous speed in 3 phase induction motor ?

A:-No load speed

B:-Full load speed

C:-Relative speed between stator and rotor

D:-Rotating magnetic field speed

Correct Answer:- Option-D

Question87:-What happens to a 3 phase induction motor if one phase fails during running ?

A:-Motor runs slowly, finally it burns

B:-Motor runs normally

C:-Motor stop instantaneously

D:-Motor runs with irregular speed

Correct Answer:- Option-A

Question88:-Which type of test is conducted using internal growler in AC motor winding ?

A:-Ground test

B:-Short circuit test

C:-Polarity test

D:-Continuity test

Correct Answer:- Option-B

Question89:-What is the primary advantage of using vacuum circuit breakers in certain applications ?

A:-Compact size and space efficiency

B:-Low maintenance requirements

C:-High current interrupting capacity

D:-Cost-effectiveness and affordability

Correct Answer:- Option-C

Question90:-Which of the following method is an example of direct measurement of

pressure ?

A:-Capacitive pressure sensor

B:-Piezoelectric sensor

C:-Strain gauge

D:-Bourdon tube

Correct Answer:- Option-D

Question91:-Which valve block flow in one direction and allow free flow in the other direction ?

A:-Gate valve

B:-4/2 way valve

C:-Non-return valve

D:-Globe valve

Correct Answer:- Option-C

Question92:-Which valve is used for fine control of flow in pipe line ?

A:-Gate valve

B:-Globe valve

C:-Needle valve

D:-Non-return valve

Correct Answer:- Option-C

Question93:-Which part of the single acting cylinder is attached with the load ?

A:-Piston Rod

B:-Seal

C:-Piston

D:-Spring

Correct Answer:- Option-A

Question94:-What is the name of the device used to remove dust, chips and other foreign particles from the fluid ?

A:-Pressure regulating valve

B:-Filter

C:-Accumulator

D:-Regulator

Correct Answer:- Option-B

Question95:-How many number of valves are required for the rotary pump ?

A:-1

B:-2

C:-3

D:-0

Correct Answer:- Option-D

Question96:-Which type of turbine is a Francis Turbine ?

A:-Reaction turbine

B:-Screw turbine

C:-Impulse turbine

D:-Turbo turbine

Correct Answer:- Option-A

Question97:-How many types of turbines can you classify on the basis of direction of flow through runner ?

A:-2

B:-3

C:-4

D:-7

Correct Answer:- Option-C

Question98:-How direction control valves are classified ?

A:-Direction of flow

B:-Number of ports and position

C:-Direction of pressure

D:-Maximum pressure of valve

Correct Answer:- Option-B

Question99:-Which standard pipe fitting is used to close a pipe line having internal thread ?

A:-Plug

B:-Cap

C:-Reducer

D:-Coupling

Correct Answer:- Option-A

Question100:-How pipes are classified ?

A:-Uses

B:-Colour

C:-Shapes

D:-Material

Correct Answer:- Option-D