

FINAL ANSWER KEY

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Question1:-The net electrical charge in an isolated system remains constant. This is known as

- A:-Law of conservation of charge
- B:-Coulomb's first law
- C:-Coulomb's second law
- D:-Law of conservation of energy

Correct Answer:- Option-A

Question2:-Two resistances 4 ohm & 3 ohm are connected in series, the effective resistance is

- A:-4 ohm
- B:-3 ohm
- C:-7 ohm
- D:-7/12 ohm

Correct Answer:- Option-C

Question3:-Kirchoffs voltage law deals with the conservation of

- A:-Momentum
- B:-Mass
- C:-Potential Energy
- D:-Charge

Correct Answer:-**Question Cancelled**

Question4:-A 250 V bulb passes a current of 0.3 A. Calculate the power in the lamp

- A:-75 W
- B:-50 W
- C:-25 W
- D:-90 W

Correct Answer:- Option-A

Question5:-In the certain circuit, having constant resistance the current is tripled, what will happen to power :

- A:-It will remain the same
- B:-It will increase by 9 times
- C:-It will decrease by 9 times
- D:-It will increase by three times

Correct Answer:- Option-B

Question6:-One Newton metre is same as

A:-One watt

B:-1 joule

C:-5 joules

D:-1 joule/sec

Correct Answer:- Option-B

Question7:-Two resistors are set to be connected in series when

A:-Same current passes in turn through body

B:-Both carry the same value of current

C:-Total current equals the sum of branch currents

D:-Some of I.R. drops equal the applied e.m.f.

Correct Answer:-Question Cancelled

Question8:-Specific resistance of a substance is measured in

A:- Ω/m

B:- Ω/m^2

C:- $\Omega - \text{cm}$

D:- m/Ω

Correct Answer:- Option-C

Question9:-Voltage dependent resistors are used

A:-For inductive circuits

B:-To suppress surges

C:-As heating elements

D:-As current stabilizers

Correct Answer:-Question Cancelled

Question10:-The current carrying capacity of a copper wire having twice the diameter of another copper wire is

A:-Twice as great

B:-Half as great

C:-Four times as great

D:-Three times as great

Correct Answer:- Option-C

Question11:-Magnetic moment is a

A:-Pole strength

B:-Scalar quantity

C:-Vector quantity

D:-Universal constant

Correct Answer:- Option-C

Question12:-A direct current is sent through a helical spring. The spring tends to

A:-to get longer

B:-to get shorter

C:-to move eastward

D:-to rotate about axis

Correct Answer:- Option-B

Question13:-The magnetic field required to reduce the residual magnetisation to zero is called

A:-retentivity

B:-coercivity

C:-hysteresis

D:-saturation magnetization

Correct Answer:- Option-B

Question14:-A law establishing the fact that the algebraic sum of the rises and drops of the mmf around a closed loop of a magnetic circuit is equal to zero

A:-Kirchoff's circuital law

B:-Maxwell's circuital law

C:-Ampere's circuital law

D:-Coulomb's circuital law

Correct Answer:- Option-C

Question15:-The point in a magnet where the intensity of magnetic lines of force is maximum

A:-Magnetic pole

B:-South pole

C:-North pole

D:-Unit pole

Correct Answer:- Option-A

Question16:-The total number of magnetic lines of force in a magnetic field is called

A:-Magnetic flux

B:-Magnetic flux density

C:-Magnetic flux intensity

D:-Magnetic potential

Correct Answer:- Option-A

Question17:-Eddy current produced in a core

A:-Increase useful energy

B:-Create loss of useful energy

C:-Strengthen the magnetic field

D:-None of the above

Correct Answer:- Option-B

Question18:-Hysteresis loop least depends on

A:-Magnetic field intensity

B:-Frequency

C:-Ambient temperature

D:-Volume of material

Correct Answer:- Option-C

Question19:-An electromagnet is stronger if it uses

A:-less current

B:-a straight wire instead of a coil

C:-a smaller bar of ferromagnetic material

D:-a ferromagnetic material that is easier to magnetize

Correct Answer:- Option-D

Question20:-The inherent property of all matter is/are

A:-Para magnetism

B:-Diamagnetism

C:-Ferromagnetic

D:-None of these

Correct Answer:- Option-B

Question21:-Select the correct answer :

The magnitude of AC voltage generated depends on :

(i) Number of turns on coil

(ii) Number of poles

(iii) Speed of rotation

(iv) Strength of magnetic field

A:-Only (ii, iii & iv)

B:-Only (i, ii & iii)

C:-Only (i, iii & iv)

D:-All are correct

Correct Answer:- Option-D

Question22:-An AC current is given by $i = I_m \sin(\omega t + \theta)$, then its RMS value is given by

A:- I_m

B:- $0.707 \times I_m$

C:- $0.5 \times I_m$

D:- $1.414 \times I_m$

Correct Answer:- Option-B

Question23:-Consider the voltage equations $V_1 = A \sin (100\pi t + 15^\circ)$ and $V_2 = B \sin (100\pi t - 30^\circ)$. Which of the following statements is correct?

- (i) V_1 leads V_2 by 45°
- (ii) V_2 leads V_1 by 45°
- (iii) Frequency of the voltage waveforms is 100 Hz
- (iv) Frequency of the voltage waveforms is 50 Hz

A:-Only (i & iv)

B:-Only (ii & iii)

C:-Only (i & iii)

D:-Only (ii & iv)

Correct Answer:- Option-A

Question24:-Crest factor of sinusoidal alternating voltage is

A:-1.11

B:-1.414

C:-0.707

D:-0.9

Correct Answer:- Option-B

Question25:-The maximum current of a sinusoidal AC circuit is 10 A. What is the instantaneous current at 60° ?

A:-7.07 A

B:-5 A

C:-10 A

D:-8.66 A

Correct Answer:- Option-D

Question26:-Form factor of a waveform is given by the equation

A:-Maximum value / RMS value

B:-RMS value / Maximum value

C:-RMS value / Average value

D:-Maximum value / Average value

Correct Answer:- Option-C

Question27:-Which of the following statements is / are correct regarding alternating current flowing through a pure inductive circuit?

- (i) Voltage lags behind current by an angle 90°
- (ii) Current lags behind voltage by an angle 90°
- (iii) Average power over one cycle is positive

A:-Only (i & iii)

B:-Only (ii & iii)

C:-Only (i)

D:-Only (ii)

Correct Answer:- Option-D

Question28:-In an AC circuit containing pure capacitance only reactance is

- A:-Directly proportional to frequency
- B:-Inversely proportional to frequency
- C:-Directly proportional to square of frequency
- D:-Independent of frequency

Correct Answer:- Option-B

Question29:-Which of the following is the correct relation between line current and phase current in a star connected system?

- A:-Line current = Phase current
- B:-Line current = $\sqrt{3}$ Phase current
- C:-Line current = $\frac{1}{\sqrt{3}}$ Phase current
- D:-Line current = $3 \times$ Phase current

Correct Answer:- Option-A

Question30:-Which of the following statements are correct for a three-phase delta connected system?

- (i) Line voltage = $\sqrt{3}$ phase voltage
- (ii) Line current = Phase current
- (iii) Line currents are 30° ahead of the respective phase currents
- (iv) Line currents are 30° behind the respective phase currents

- A:-Only (i) & (iii)
- B:-Only (ii) & (iv)
- C:-Only (iii)
- D:-Only (iv)

Correct Answer:- Option-D

Question31:-Which of the following type of instruments may be categorized as transfer instruments?

- A:-Moving coil
- B:-Moving iron
- C:-Hotwire instruments
- D:-Electrodynamic

Correct Answer:-Question Cancelled

Question32:-Which of the following methods is NOT suitable for measuring high resistance?

- A:-Loss of charge
- B:-Megohm bridge
- C:-Wheatstone bridge
- D:-Insulation megger

Correct Answer:- Option-C

Question33:-The Time base circuit in a cathode ray oscilloscope (CRO) generates

- A:-Square waveform

B:-Sawtooth waveform

C:-Sine waveform

D:-PWM square waveform

Correct Answer:- Option-B

Question34:-Consider the following statements about an electrodynamicometer type wattmeter

- (i) The fixed coils/field coils are connected in series with the load.
- (ii) The moving coil/pressure coil is connected across the voltage.
- (iii) The fixed and moving coils are iron cored.
- (iv) The deflecting torque produced not only considers voltage and current but also the power factor of the load.
- (v) The compensating coil in an LPF wattmeter is connected in series with the pressure coil circuit but made identical to the current coil.

Which of the above statements are correct?

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

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

C:-(i), (ii), (iii) and (v)

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

Correct Answer:- Option-B

Question35:-Consider the following statements

- (i) The secondary side is nearly short circuited for current transformer(CT) operation while it is nearly open circuited for potential transformer (PT) operation.
- (ii) The primary current in a potential transformer (PT) is dependent on the secondary burden while it is not in a current transformer (CT).

A:-(i) is correct, (ii) is incorrect

B:-(i) is incorrect, (ii) is correct

C:-(i) and (ii) are incorrect

D:-(i) and (ii) are correct

Correct Answer:- Option-D

Question36:-Match the following.

- (a) Hay's bridge (i) capacitance
- (b) Schering bridge (ii) inductance
- (c) Kelvin double bridge (iii) low resistance
- (d) Maxwell bridge (iv) inductance, high Q factor

A:-(a)-(iv), (b)-(ii), (c)-(iii) - (d)-(i)

B:-(a)-(ii), (b)-(iii), (c)-(i) - (d)-(iv)

C:-(a)-(iv), (b)-(i), (c)-(iii) - (d)-(ii)

D:-(a)-(ii), (b)-(i), (c)-(iv) - (d)-(iii)

Correct Answer:- Option-C

Question37:-A 220 V, 5 A DC energy meter is tested at its rated voltage and current under the following two methods:

- (i) Direct loading
- (ii) Phantom loading, where the current circuit is supplied by a 9 V battery.

The resistance of the pressure coil is $9680\ \Omega$ and the resistance of the current coil is $0.5\ \Omega$. Determine the difference in power consumed between the two testing methods.

A:-1100 W

B:-45 W

C:-162 W

D:-1055 W

Correct Answer:- Option-D

Question38:-A stationary closed Lissajous pattern on an oscilloscope has 2 horizontal tangencies and 3 vertical tangencies for a horizontal input with frequency 12 kHz. The frequency of the vertical input is

A:-8 kHz

B:-18 kHz

C:-24 kHz

D:-6 kHz

Correct Answer:- Option-A

Question39:-When two wattmeter method is used for power measurement in a balanced three phase system, one of the wattmeters reads 800 W while the other reads 400 W. The total power consumption and power factor of the load respectively is

A:-1200 W, 0.5

B:-400 W, 0.5

C:-1200 W, 0.866

D:-400 W, 0.866

Correct Answer:- Option-C

Question40:-A moving coil instrument has a resistance of 15 ohm and gives full scale deflection for 1 mA. To extend its range to 50 mA, _____ may be used.

A:-0.3Ω shunt resistor

B:-0.3Ω series resistor

C:-3.33Ω shunt resistor

D:-3.33Ω series resistor

Correct Answer:- Option-A

Question41:-Human body experiences shock due to:

A:-Flow of current

B:-Voltage level

C:-Power

D:-Resistance

Correct Answer:- Option-A

Question42:-Currents which cannot cause direct physiological harm but can cause involuntary muscular reactions are called

A:-Fault current

B:-Primary Shock current

C:-Secondary Shock current

D:-Leakage current

Correct Answer:- Option-C

Question43:-For a normal healthy person, a current of about 10 to 30 mA can cause

A:-Tingling Sensation

B:-Muscular Contraction

C:-Ventricular Fibrillation

D:-Loss of heart beat

Correct Answer:- Option-B

Question44:-Which of the following is commonly used as the fuse element in an HRC fuse?

A:-Copper

B:-Alloy of Tin and Lead

C:-Aluminium

D:-Silver

Correct Answer:- Option-D

Question45:-Which protective device disconnect the current when leakage current flows to earth?

A:-Fuse

B:-MCB

C:-RCCB

D:-Isolator

Correct Answer:- Option-C

Question46:-Double insulation method in portable electric drill eliminates the need for

A:-Neutral wire

B:-Earthing Connection

C:-Fuse

D:-Switch

Correct Answer:- Option-B

Question47:-A battery consists of three cells each rated 12V,100Ah are connected in series. What is the total capacity of the battery bank?

A:-100Ah

B:-167Ah

C:-300Ah

D:-150Ah

Correct Answer:- Option-A

Question48:-If 12 solar cells, each having a terminal voltage of 1 V are connected in series, what will be the total terminal voltage

A:-3V

B:-9V

C:-12V

D:-24V

Correct Answer:- Option-C

Question49:-A load consumes 100 W at 10 V. If each cell provides 2V and can supply 5A, determine the total number of cells required

A:-10

B:-12

C:-8

D:-6

Correct Answer:- Option-A

Question50:-A UPS system requires 240V and 50A. Each cell provides 2V and can deliver 10A. Determine the total number of cells required.

A:-100

B:-200

C:-400

D:-600

Correct Answer:- Option-D

Question51:-What type of switch is commonly used in staircase wiring to control one lamp from two positions?

A:-SPST

B:-SPDT

C:-TPTT

D:-Limit Switch

Correct Answer:- Option-B

Question52:-What is the fundamental purpose of adding charcoal and salt to an earthing pit?

A:-To insulate the electrode from corrosion

B:-To prevent insect infestation

C:-To generate a chemical voltage

D:-To lower the soil's electrical resistance

Correct Answer:- Option-D

Question53:-What is the purpose of the arc chute found inside a miniature circuit breaker?

A:-To vent ionized gasses safely outside the switchboard enclosure

B:-To divide, cool, and extinguish the high-energy electric arc formed during contact separation

C:-To pre-heat the contacts to reduce contact resistance upon closure

D:-To magnetically pull the contacts back into the closed position

Correct Answer:- Option-B

Question54:-Inside an HRC fuse body, what is the specific role of the packed quartz sand powder?

A:-To quench the electrical arc generated during a fault blowout

B:-To conduct excess current away safely

C:-To keep the metal caps physically glued together

D:-To alert users by changing colour when blown

Correct Answer:- Option-A

Question55:-An industrial facility runs a balanced 3-phase heavy motor supply. Which main switch must be Installed for this purpose?

A:-SPST Switch

B:-ICDP Switch

C:-ICTP Switch

D:-SPDT Switch

Correct Answer:- Option-C

Question56:-What type of fault is an MCB's internal bimetallic strip designed to protect against?

A:-Rapid, high-magnitude dead short circuits

B:-Delayed thermal overload protection

C:-Neutral line disconnects

D:-High-frequency harmonic distortions

Correct Answer:- Option-B

Question57:-A point source of 150 candela (cd) light intensity emits light uniformly in all directions. Determine the total luminous flux emitted by the source.

A:-150 lm

B:-600 lm

C:-1885 lm

D:-4712 lm

Correct Answer:- Option-C

Question58:-An electrical circuit powering a 230 V water pump is protected by a standard 30 mA Residual Current Circuit Breaker (RCCB). If the pump develops an internal insulation fault that results in a leakage current of 0.015 A directly to earth. which of the following statements best describes the outcome?

A:-The RCCB will trip immediately and cut off the power supply to the pump.

B:-The RCCB will not trip, and the water pump will continue to operate normally.

C:-The pump will overheat and burn out without triggering the RCCB.

D:-The RCCB will trip only if the supply voltage drops below 230 V.

Correct Answer:- Option-B

Question59:-A 3-phase 415 V balanced industrial load consumes a total active power of 15 kW at a power factor of 0.82 lagging. Assuming a standard safety multiplier of 1.25 for motor starting currents and continuous operation, what is the ideal nominal current rating for the 3-pole MCB protecting this circuit?

A:-20 A

B:-25 A

C:-32 A

D:-40 A

Correct Answer:- Option-C

Question60:-Why are Type D MCBs chosen for equipment like X-ray machines and heavy industrial motors?

A:-They have less voltage drop

B:-They allow for high startup current surges without causing nuisance trips.

C:-They trip much faster on small overloads than Type B breakers.

D:-They work without an earth connection.

Correct Answer:- Option-B

Question61:-Which of the following statement/s is/are correct regarding the functions of yoke in a DC generator?

- (i) It provides mechanical support for the poles
- (ii) It acts as a protective cover
- (iii) It does not carry the magnetic flux produced by the poles.

A:-Only (i)

B:-Only (ii) & (iii)

C:-Only (i) & (ii)

D:- (i), (ii) & (iii)

Correct Answer:- Option-C

Question62:-Which of the following statement/s is/are correct regarding the working of a DC generator?

- (i) The emf induced in the armature conductors is alternating emf.
- (ii) To obtain unidirectional current in the external circuit, slip rings are used.

A:-Only (i)

B:-Only (ii)

C:-Both (i) & (ii)

D:-Both statements are wrong

Correct Answer:- Option-A

Question63:-Determine the generated EMF of a DC shunt generator delivering an armature current of 20 A at a terminal voltage of 250 V and having an armature resistance of 0.5 ohm.

A:-240 V

B:-260 V

C:-230 V

D:-250 V

Correct Answer:- Option-B

Question64:-A 6-pole wave wound DC shunt generator has an armature resistance of 1 ohm and a shunt field winding resistance of 145 ohm with 500 armature conductors and a useful flux per pole of 0.05 Wb. Which of the following combinations of generated EMF and speed are possible for the above DC generator?

- (i) 750 V, 600 RPM
- (ii) 250 V, 600 RPM
- (iii) 1500 V, 1200 RPM
- (iv) 500 V, 1200 RPM

A:-Only (i) & (iii)

B:-Only (ii) & (iv)

C:-Only (i) & (iv)

D:-Only (ii) & (iii)

Correct Answer:- Option-A

Question65:-Which of the following statement/s is/are NOT correct regarding lap and wave winding?

- (i) For a given number of poles and armature conductors, lap winding gives more EMF than wave winding.
- (ii) Wave winding is suitable for high voltage, low current machines.
- (iii) When large currents are required, it is necessary to use lap winding.

A:-Only (i) & (ii)

B:-Only (ii)

C:-Only (iii)

D:-Only (i)

Correct Answer:- Option-D

Question66:-Which of the following is/are correct with respect to DC generator characteristics?

- (i) Open circuit characteristic shows the relation between no-load generated emf and the field current at a given fixed speed.
- (ii) Internal characteristic gives the relation between emf actually induced in the armature (after allowing for demagnetizing effect of armature reaction) and armature current.
- (iii) External characteristic gives relation between terminal voltage and load current.

A:-Only (i) & (iii)

B:-Only (i)

C:-Only (iii)

D:-(i), (ii) & (iii)

Correct Answer:- Option-D

Question67:-The difference between armature torque and shaft torque in a DC motor is due to :

- (i) Copper loss
- (ii) Iron loss
- (iii) Friction loss

A:-Only (iii)

B:-Only (ii) & (iii)

C:-Only (i)

D:-(i), (ii) & (iii)

Correct Answer:- Option-B

Question68:-Read the following statements: Assertion (I) and Reason (II). Choose one of the correct alternatives given below:

Assertion (I) Back emf in a DC motor acts like a governor, i.e., it makes a motor self-regulating.

:

Reason (II) : If motor speed is high, then back emf is small and hence the armature current is large. If speed is less, then back emf is more and motor draws less current.

A:-Both Assertion (I) and Reason (II) are true and Reason (II) is the correct explanation of Assertion (I)

B:-Both Assertion (I) and Reason (II) are true and Reason (II) is NOT the correct explanation of Assertion (I)

C:-Assertion (I) is true but Reason (II) is False

D:-Assertion (I) is False but Reason (II) is True

Correct Answer:- Option-C

Question69:-Which of the following statement/s is /are NOT correct regarding Swinburne's test of a DC machine?

- (i) It is economical because the power required to test a machine is small.
- (ii) The effect of change in iron loss from no load to full load is considered.
- (iii) The efficiency can be predetermined at any load.

A:-Only (ii)

B:-Only (ii) & (iii)

C:-Only (i)

D:-Only (i) & (iii)

Correct Answer:- Option-A

Question70:-Which of the following statement/s is /are correct regarding armature or rheostatic speed control of a DC shunt motor?

- (i) This method is used when speeds below no-load speed is required.
- (ii) As the controller resistance is increased, speed is decreased.
- (iii) Smaller the resistance in armature circuit, greater is the fall in speed.

A:-Only (i)

B:-Only (i) & (ii)

C:-Only (i) & (iii)

D:- (i), (ii) & (iii)

Correct Answer:- Option-B

Question71:-A 200 KVA transformer has an iron loss of 1 kW and full load copper loss of 2 kW. Its load kVA corresponding to maximum efficiency is

A:-50

B:-100

C:-141.4

D:-400

Correct Answer:- Option-C

Question72:-A 6 pole 50 Hz 3 phase induction motor runs at 950 r.p.m. and has rotor copper loss of 5 kW. The rotor input in kW is

A:-100

B:-10

C:-95

D:-5.3

Correct Answer:- Option-A

Question73:-In an alternator the armature reaction is completely magnetizing when the load power factor is

A:-Unity

B:-0.707

C:-Zero lagging

D:-Zero leading

Correct Answer:- Option-D

Question74:-Consider the statements about a stepper motor

- (1) The rotor has no windings
- (2) The Pull-out torque of a stepper motor refers to minimum torque required for starting
- (3) The resolution of a stepper motor increases with increase in step angle

Which of the statement/s is/are correct?

A:-Only (1)

B:-Only (3)

C:-(2) & (3)

D:-(1) & (2)

Correct Answer:- Option-A

Question75:-Which of the following methods are suitable for speed control of squirrel cage induction motors.

(1) Voltage control

(2) Rotor resistance control

(3) Frequency control

(4) Pole changing

A:-(2), (3) and (4)

B:-(1), (3) and (4)

C:-(1), (2) and (3)

D:-(2) and (4)

Correct Answer:- Option-B

Question76:-A transformer has full load copper loss of 400 W. The copper loss at half full load will be

A:-400 W

B:-200 W

C:-250 W

D:-100 W

Correct Answer:- Option-D

Question77:-Consider the following statements :

(1) The all-day efficiency of a transformer depends on amount and duration of load.

(2) The hysteresis loss in a transformer depends on square of frequency.

(3) In a transformer OC test is conducted on lv side and SC test on hv side

Identify the correct statements?

A:-Only (1)

B:-(1) & (3)

C:-(1) & (2)

D:-Only (3)

Correct Answer:- Option-B

Question78:-The rotor circuit frequency of a 4 pole, 3-phase induction motor connected to a 50 Hz supply under locked rotor condition is

A:-2 Hz

B:-20 Hz

C:-50 Hz

D:-70 Hz

Correct Answer:- Option-C

Question79:-A 50 KVA, 500 V alternator gave the following test results :

Open circuit test : A field current of 12 A produced an emf of 300 V.

Short circuit test : A field current of 12 A caused a current of 175 A to flow in the short-circuited armature.

The synchronous impedance of the alternator (in Ω) is

A:-1.71

B:-2.85

C:-25

D:-41.67

Correct Answer:- Option-A

Question80:-In case of split phase motor, the phase shift between currents in the two windings is around

A:-30°

B:-70°

C:-90°

D:-120°

Correct Answer:- Option-A

Question81:-What is the hexadecimal equivalent of decimal number 568?

A:-1F8

B:-238

C:-2AB

D:-388

Correct Answer:- Option-B

Question82:-Which logic gate acts as an enable or inhibit device?

A:-OR gate

B:-NOT gate

C:-AND gate

D:-XOR gate

Correct Answer:- Option-C

Question83:-Choose the Correct Statement

A:-Boolean multiplication corresponds to OR operation

B:-Boolean addition corresponds to OR operation

C:-Boolean addition corresponds to NOT operation

D:-Boolean multiplication corresponds to XOR operation

Correct Answer:- Option-B

Question84:-Which gate pair is directly related through De Morgan's theorem?

A:-AND and OR

B:-XOR and XNOR

C:-Buffer and NOT

D:-NAND and NOR

Correct Answer:- Option-D

Question85:-Which adder circuit can handle carry input from a previous stage?

A:-Half adder

B:-Full adder

C:-Parallel adder

D:-Serial adder

Correct Answer:- Option-B

Question86:-Select the correct statement:

A:-Edge-triggered flip-flops are bistable devices with synchronous input

B:-States of latches are normally independent of asynchronous inputs

C:-Flip-flops can change state except on the triggering edge of a clock pulse

D:-All are correct

Correct Answer:- Option-A

Question87:-The unique feature of a J-K flip-flop compared to an S-R flip-flop is its:

A:-Asynchronous input

B:-Toggle operation

C:-Clock frequency

D:-Reset terminal

Correct Answer:- Option-B

Question88:-To construct a modulus-18 binary counter, the required number of flip-flops is:

A:-5

B:-4

C:-3

D:-18

Correct Answer:- Option-A

Question89:-A serial in/serial out shift register with 4 flip-flops provides a delay of 20 μ s. The operating clock frequency is:

A:-50 kHz

B:-100 kHz

C:-200 kHz

D:-400 kHz

Correct Answer:- Option-C

Question90:-A 4-bit Digital to Analog converter has a full-scale output voltage of 30 V. What is the output voltage when the input is 1010?

A:-10 V

B:-15 V

C:-20 V

D:-30 V

Correct Answer:- Option-C

Question91:- The maximum efficiency of a full-wave rectifier without filter is _____

A:-40.6 %

B:-81.2 %

C:-50%

D:-100 %

Correct Answer:- Option-B

Question92:-The ripple factor of a half-wave rectifier without filter is _____

A:-0.482

B:-0.812

C:-1.41

D:-1.21

Correct Answer:- Option-D

Question93:-The correct relationship between latching current (I_L) and holding current (I_H) in an SCR is:

A:- $I_L < I_H$

B:- $I_L = I_H$

C:- $I_L > I_H$

D:- $I_L = I_H = 0$

Correct Answer:- Option-C

Question94:-A UJT relaxation oscillator generally produces:

A:-Sine wave

B:-Square wave

C:-DC output

D:-Sawtooth wave

Correct Answer:- Option-D

Question95:-A regulated power supply provides:

A:-Constant DC voltage

B:-Pulsating DC only

C:-Variable output voltage

D:-High-frequency AC

Correct Answer:- Option-A

Question96:-MOSFET is a:

A:-Current-controlled device

B:-Voltage-controlled device

C:-Temperature-controlled device

D:-Resistance-controlled device

Correct Answer:- Option-B

Question97:-IGBT stands for:

A:-Integrated Gate Bipolar Transistor

B:-Insulated Gate Bipolar Transistor

C:-Insulated Gate Base Transistor

D:-Internal Gate Bipolar Transistor

Correct Answer:- Option-B

Question98:-Which battery water should be used in lead-acid inverter batteries?

A:-Salt water

B:-Tap water

C:-Distilled water

D:-Mineral water

Correct Answer:- Option-C

Question99:-A DIAC starts conducting when the applied voltage exceeds:

A:-Breakover voltage

B:-Holding voltage

C:-Cutoff voltage

D:-Threshold current

Correct Answer:- Option-A

Question100:-A TRIAC is equivalent to:

A:-Two SCRs in series

B:-Two SCRs in antiparallel

C:-One diode

D:-One transistor

Correct Answer:- Option-B