

PROVISIONAL ANSWER KEY

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Question1:-Right of minorities to establish and run educational institutions is related to the _____ of the Indian Constitution.

- A:-Article 30
- B:-Article 18
- C:-Article 24
- D:-Article 34

Correct Answer:- Option-A

Question2:-Fundamental rights of Indian Constitution is indebted to

- A:-Britain
- B:-Japan
- C:-USA
- D:-Iyerland

Correct Answer:- Option-C

Question3:- _____ provides for free and compulsory education to all children between 6 and 14 years of age.

- A:-`52^(nd)` amendment
- B:-`86^(th)` amendment
- C:-`74^(th)` amendment
- D:-`97^(th)` amendment

Correct Answer:- Option-B

Question4:-Election and Election Commission is mentioned in the _____ of Indian Constitution.

- A:-Article 356
- B:-Article 370
- C:-Article 343
- D:-Article 324

Correct Answer:- Option-D

Question5:-Govt of India introduced a new plan for the differently abled

- A:-Sugama Bharath Abhiyan
- B:-Green India Mission
- C:-Swajal Dhara
- D:-Nirmal Bharath Abhiyan

Correct Answer:- Option-A

Question6:-First Woman Judge of Supreme Court

- A:-K K Usha
- B:-Sujatha Manohar
- C:-Fathima Beevi
- D:-Leelaseth

Correct Answer:- Option-C

Question7:-Panchayathraj System is introduced at first in

- A:-Rajasthan
- B:-Kerala
- C:-Tamil Nadu
- D:-Madhya Pradesh

Correct Answer:- Option-A

Question8:-Who wrote the book "Onnekalkodi Malayalikal" ?

- A:-Sir C Sankaran Nair
- B:-K P Kesavamenon
- C:-C Kesavan
- D:-E M S Namboodirippad

Correct Answer:- Option-D

Question9:-The poem "Navamanjari" is the work of

A:-Sree Narayana Guru
B:-Chattambi Swamikal
C:-Sivayogi
D:-Sahodaran Ayyappan
Correct Answer:- Option-A

Question10:-Who published an Arabic-Malayalam monthly called 'Al-Islam' ?

A:-K M Seethi Sahib
B:-Vakkam Abdul Khadar Maulavi
C:-Seethi Muhammed
D:-Kunju Muhammed
Correct Answer:- Option-B

Question11:-Savarnajatha procession set out from Vaikom under the leadership of

A:-A.K. Gopalan
B:-Dr. Palpu
C:-C.V. Kunjiraman
D:-Mannathu Padmanabhan
Correct Answer:- Option-D

Question12:-Author of "Jathikummi"

A:-Ayyankali
B:-Anandathirdha
C:-Pandit Karuppan
D:-A G Velayudhan
Correct Answer:- Option-C

Question13:-The printing press set by father Chavara Kuriakose at

A:-Kainakari
B:-Mannanam
C:-Kannoor
D:-Mavelikkara
Correct Answer:- Option-B

Question14:-Who founded Samathwasamajam ?

A:-Vaikunda Swamikal
B:-V T Bhattathirippad
C:-Vagbhadanandan
D:-Thycaud Ayya
Correct Answer:- Option-A

Question15:-O N V Kurup won the Jnanapith Samman in

A:-2001
B:-2005
C:-2009
D:-2007
Correct Answer:- Option-D

Question16:-Who is the Present Union Minister for commerce and industry ?

A:-Smriti Irani
B:-Nirmala Sitaraman
C:-Sumitra Mahajan
D:-Umabharathi
Correct Answer:- Option-B

Question17:-The proposed capital of Andhra Pradesh

A:-Amaravathi
B:-Madurai
C:-Dindigal
D:-Bangalore
Correct Answer:- Option-A

Question18:-The novel "The Name of the Rose" written by

A:-Ian Thomson
B:-Antonio Gramsci
C:-Umberto Eco
D:-Mare Block
Correct Answer:- Option-C

Question19:-Rhododendron is the national flower of

- A:-Japan
- B:-Nepal
- C:-China
- D:-Taiwan

Correct Answer:- Option-B

Question20:-The Southernmost point of India is

- A:-Indira point
- B:-Sreelanka
- C:-Kanyakumari
- D:-Nicobar island

Correct Answer:- Option-A

Question21:-A 150Ω resistance AB is connected across 240 V DC supply. Calculate the value of the resistance which when connected between the midpoint of AB and end A, will carry a current of 0.8 A.

- A:- 100Ω
- B:- 125Ω
- C:- 90Ω
- D:- 112.5Ω

Correct Answer:- Option-D

Question22:-The force experienced by a unit north pole at any point is called the

- A:-MMF
- B:-Magnetic field strength
- C:-Magnetic flux density
- D:-Magnetic potential

Correct Answer:- Option-B

Question23:-The principle of statically induced EMF is utilized in

- A:-Transformer
- B:-Motor
- C:-Generator
- D:-Battery

Correct Answer:- Option-A

Question24:-The form factor of sinusoidal wave is

- A:-1.414
- B:-1.11
- C:-2
- D:-1.5

Correct Answer:- Option-B

Question25:-In an AC circuit, the ratio of kW/kVA represents

- A:-Power factor
- B:-Load factor
- C:-Form factor
- D:-Diversity factor

Correct Answer:- Option-A

Question26:-Which of the following is not expressed in ohms ?

- A:-Resistance
- B:-Inductance
- C:-Inductive reactance
- D:-Capacitive reactance

Correct Answer:- Option-B

Question27:-Which of the following statements associated with three phase delta connected circuits is true ?

- A:-Line voltage is equal to phase voltage
- B:-Line current is equal to phase current
- C:-Line voltage is $\sqrt{3}$ times of phase voltage
- D:-Line currents are 60 degree apart

Correct Answer:- Option-A

Question28:-A transformer having 1000 primary turns is connected to a 250 V AC supply. For a secondary voltage of 400 V the number of secondary turns should be

- A:-1600
- B:-250

C:-400

D:-1250

Correct Answer:- Option-A

Question29:-The induced emf in the armature conductors of a DC motor is

A:-Sinusoidal

B:-Trapezoidal

C:-Rectangular

D:-DC

Correct Answer:- Option-A

Question30:-A 4 pole wave wound armature of a DC generator has 720 conductors and is rotated at 1000 RPM. If the useful flux is 20 m Wb. Calculate the generated voltage

A:-240 V

B:-480 V

C:-960 V

D:-None of the above

Correct Answer:- Option-B

Question31:-The pointer of an indicating instrument is in the final deflected position, when

A:-The deflecting torque is zero

B:-The controlling torque is zero

C:-The damping torque is zero

D:-Both deflecting and controlling torques are zero

Correct Answer:- Option-C

Question32:-PMMC instrument can be used for

A:-AC only

B:-Both AC and DC

C:-DC only

D:-None of the above

Correct Answer:- Option-C

Question33:-The Watt hour meter is _____ instrument.

A:-An integrating

B:-An indicating

C:-A recording

D:-A transfer

Correct Answer:- Option-A

Question34:-In a household single phase induction type energy meter, the meter can be reversed by

A:-Reversing the supply terminals

B:-Reversing the load terminals

C:-Opening the meter connections and reversing either the potential coil terminals or current coil terminals

D:-Opening the meter and reversing connections of both current and potential coil circuits

Correct Answer:- Option-C

Question35:-A voltmeter has resistance of 2000Ω when it is connected across a DC circuit and its power consumption is 2 mW. Suppose this voltmeter is replaced by voltmeter of 4000Ω resistance in the circuit, the power consumption will be

A:-4 mW

B:-2 mW

C:-1 mW

D:-0.5 mW

Correct Answer:- Option-C

Question36:-The power in a three phase circuit is measured using two watt meter method. The reading of one of the watt meters is positive and that of the other is negative. The magnitude of the reading is different. It can be concluded that the power factor of the circuit is

A:-Unity

B:-Zero (lagging)

C:-0.5 (lagging)

D:-Less than 0.5 (lagging)

Correct Answer:- Option-D

Question37:-Creeping in a single phase induction type energy meter may be due to

A:-Overcompensation for friction

B:-Overvoltage

C:-Vibration

D:-All of the above

Correct Answer:- Option-D

Question38:-A 250 V moving iron voltmeter takes a current of 0.05 A when connected to a 250 V DC supply. The coil has an inductance of 1 H. Determine the percentage error when the meter is connected to a 250 V, 100 Hz AC supply.

- A:-1%
- B:-0.8%
- C:-10%
- D:-0.5%

Correct Answer:- Option-B

Question39:-Which of the following instrument is equally accurate in DC as well as AC circuits ?

- A:-Dynamometer type watt meter
- B:-Moving iron ammeter
- C:-PMMC voltmeter
- D:-Induction type watt meter

Correct Answer:- Option-A

Question40:-The scale of PMMC instrument is uniform because

- A:-Of eddy current damping
- B:-External magnetic fields have no effect
- C:-It is spring controlled
- D:-It has no hysteresis loss

Correct Answer:- Option-C

Question41:-The donor concentration of Si crystal is $1.9 \times 10^{24} / m^3$ and the intrinsic concentration is $1.4 \times 10^{18} / m^3$. Estimate the concentration of holes

- A:- $1.0 \times 10^{12} / m^3$
- B:- $1.0 \times 10^6 / m^3$
- C:- $0.7 \times 10^6 / m^3$
- D:- $1.4 \times 10^{12} / m^3$

Correct Answer:- Option-A

Question42:-The Fermi level of intrinsic semiconductor is

- A:-Above the conduction band
- B:-Below the valance band
- C:-Midway between conduction band and valance band
- D:-None of the above

Correct Answer:- Option-C

Question43:-Diode in reverse bias is equivalent to

- A:-Resistor of low resistance
- B:-Resistor of high resistance
- C:-Capacitor of high time constant
- D:-Capacitor of low time constant

Correct Answer:- Option-B

Question44:-Give the relation between α and β of a transistor

- A:- $\alpha = \beta / (1 - \beta)$
- B:- $\alpha = (\beta + 1) / \beta$
- C:- $\beta = (\alpha + 1) / \alpha$
- D:- $\beta = \alpha / (1 - \alpha)$

Correct Answer:- Option-D

Question45:-The diode that can be used as a voltage regulator is

- A:-Photo Diode
- B:-Zener Diode
- C:-PIN Diode
- D:-Varactor Diode

Correct Answer:- Option-B

Question46:-When the collector voltage in a NPN transistor increases, the effective base width decreases. This phenomenon is called

- A:-Schottky Effect
- B:-Punch Through Effect
- C:-Eber's Moll Effect
- D:-Early Effect

Correct Answer:- Option-D

Question47:-Find the amplification factor of a JFET having drain resistance 39 K Ω and transconductance 3 mS

- A:-13

B:-39

C:-117

D:-42

Correct Answer:- Option-C

Question48:-Peak inverse voltage of a diode in centre tap full wave rectifier is

A:- $2V_m$

B:- V_m

C:- $V_m/2$

D:- V_m^2

Correct Answer:- Option-A

Question49:-The various colours of LED can be obtained by varying the

A:-Material of the diode

B:-Cut in voltage of the diode

C:-Breakdown voltage of the diode

D:-Doping concentration of the diode

Correct Answer:- Option-A

Question50:-Determine the stability factor of a transistor with $\beta = 100$ with fixed bias is

A:-100

B:-78

C:-150

D:-101

Correct Answer:- Option-D

Question51:-The voltage buffer has

A:-Low input impedance and high output impedance

B:-High input impedance and low output impedance

C:-Low input impedance and low output impedance

D:-High input impedance and high output impedance

Correct Answer:- Option-B

Question52:-The gain of the RC coupled amplifier gets reduced at high frequencies due to

A:-Transistor

B:-Coupling capacitor

C:-Bypass capacitor

D:-Interelectrode capacitance

Correct Answer:- Option-D

Question53:-Give the output signal of a common emitter amplifier having a gain of 100 for an input signal $0.3 \cos(200t)$

A:- $3 \cos(200t)$

B:- $30 \cos(200t + 90^\circ)$

C:- $30 \cos(200t + 180^\circ)$

D:- $100 \cos(200t + 90^\circ)$

Correct Answer:- Option-C

Question54:-Heat sinks are used in power amplifier circuits to

A:-Decrease output power

B:-Increase output power

C:-Increase collector dissipation rating of the transistor

D:-Reduce the heat losses in the transistor

Correct Answer:- Option-C

Question55:-The main advantage of crystal oscillator is

A:-High output voltage

B:-High frequency stability

C:-High efficiency

D:-High gain

Correct Answer:- Option-B

Question56:-Which of the given characteristics are false in case of ideal OPAMP ?

A:-Infinite output impedance

B:-Infinite input impedance

C:-Infinite CMRR

D:-Infinite bandwidth

Correct Answer:- Option-A

Question57:-Find the signal to noise ratio for diode current $I_D = 1 \mu A$ over a 2 MHz bandwidth.

A:-20 dB

B:-45 dB

C:-72 dB

D:-37 dB

Correct Answer:- Option-C

Question58:-Which of the following causes the drain current to increase with V_{DS} in the saturation region ?

A:-Channel length modulation

B:-Inversion charge in the channel

C:-Body effect

D:-Hole mobility

Correct Answer:- Option-A

Question59:-Why is polysilicon, rather than metal, used for the gate in modern MOS transistors ?

A:-Better channel inversion

B:-It simplifies the fabrication process

C:-Lower resistance

D:-Makes a better contact to sources and drains

Correct Answer:- Option-B

Question60:-What is the level of roll off in most OPAMPs ?

A:--6 dB/decade

B:--20 dB/octave

C:--6 dB/decade or -20 dB/octave

D:--6 dB/octave or -20 dB/decade

Correct Answer:- Option-D

Question61:-Choose the open thermodynamic system

A:-Manual ice cream freezer

B:-Centrifugal pump

C:-Pressure cooker

D:-Automobile battery

Correct Answer:- Option-B

Question62:-Choose the specific property of a thermodynamic system

A:-Density

B:-Viscosity

C:-Temperature

D:-Pressure

Correct Answer:- Option-A

Question63:-One ton of refrigeration is equivalent to

A:-1 kW

B:-2 kW

C:-3.5 kW

D:-100 kW

Correct Answer:- Option-C

Question64:-What is mounted on the crankshaft to transform rotary motion into back and forth motion for actuating the valves ?

A:-Fly wheel

B:-Slider and crank

C:-Crank

D:-Cam shaft

Correct Answer:- Option-D

Question65:-Which is not a part of petrol engine ?

A:-Valve mechanism

B:-Fuel injector

C:-Induction coil

D:-Air filter

Correct Answer:- Option-B

Question66:-A pelton wheel is ideally suited for

A:-High head/Low discharge

B:-High head/High discharge

C:-Low head/Low discharge

D:-Medium head/Medium discharge

Correct Answer:- Option-A

Question67:-Which of the following water turbines does not require a draft tube ?

- A:-Propeller turbine
- B:-Kaplan turbine
- C:-Francis turbine
- D:-Pelton turbine

Correct Answer:- Option-D

Question68:-For transferring power through 90° the suitable gear is

- A:-Helical
- B:-Spur
- C:-Bevel
- D:-Herringbone

Correct Answer:- Option-C

Question69:-Cavitation in centrifugal pumps can be reduced by

- A:-Reducing the discharge
- B:-Reducing suction head
- C:-Throttling the discharge
- D:-Increase the flow velocity

Correct Answer:- Option-B

Question70:-The pump is to pumping high viscous fluid belongs the category of

- A:-Screw pump
- B:-Turbine pump
- C:-Plunger pump
- D:-Centrifugal pump

Correct Answer:- Option-A

Question71:-Identify the hardest tool material

- A:-Steel
- B:-Ceramics
- C:-Tungston carbide
- D:-Diamond

Correct Answer:- Option-D

Question72:-The essential constituent of any hardened steel is

- A:-Austenite
- B:-Cementite
- C:-Martensite
- D:-Pearlite

Correct Answer:- Option-C

Question73:-The collapsible tooth paste tube are made by

- A:-Drawing
- B:-Deep drawing
- C:-Rolling
- D:-Extrusion

Correct Answer:- Option-D

Question74:-The vertical passage for bringing molten metal to mould cavity is called

- A:-Sprue
- B:-Riser
- C:-Gate
- D:-Chaplet

Correct Answer:- Option-A

Question75:-In investment casting the mould is usually made of

- A:-Aluminium
- B:-Bronze
- C:-Wax
- D:-Steel

Correct Answer:- Option-C

Question76:-Electronic components are usually joined by

- A:-Brazing
- B:-Sintering
- C:-Soldering

D:-Welding

Correct Answer:- Option-C

Question77:-Which of the following is a single point cutting tool ?

A:-Parting tool

B:-Milling cutter

C:-Grinding wheel

D:-Broach

Correct Answer:- Option-A

Question78:-Enlarging an existing circular hole with a rotating single point tool is called

A:-Drilling

B:-Boring

C:-Reaming

D:-Countering

Correct Answer:- Option-B

Question79:-Which of the following aspect would lead to interchangeability ?

A:-Process planning

B:-Operator training

C:-Quality control

D:-Product design

Correct Answer:- Option-C

Question80:-Twist drills are made by

A:-Stainless steel

B:-Carbide steel

C:-Diamond

D:-High speed steel

Correct Answer:- Option-D

Question81:-Newtons I law of motion gives the concept of

A:-Work

B:-Inertia

C:-Force

D:-Energy

Correct Answer:- Option-B

Question82:-Which of the following physical quantity is not a vector ?

A:-Mass

B:-Momentum

C:-Impulse

D:-Acceleration

Correct Answer:- Option-A

Question83:-When a bullet is fired from a gun, it is recoiled in backward direction due to

A:-Impulse

B:-Inertia

C:-Acceleration

D:-Conservation of momentum

Correct Answer:- Option-D

Question84:-Which one of the following surface in contact has minimum coefficient of friction ?

A:-Wood on wood

B:-Steel on steel

C:-Tyre on dry concrete

D:-Tyre on wet concrete

Correct Answer:- Option-B

Question85:-An increase in load at the free end of a cantilever is likely to cause failure

A:-At fixed support end

B:-Free end

C:-Mid of its length

D:-Any where

Correct Answer:- Option-A

Question86:-A beam 10 m long is simply supported at the ends, carries a load of 1000 N at the mid of span, the bending moment under the load is

A:-500 Nm

B:-1000 Nm

C:-2500 Nm

D:-5000 Nm

Correct Answer:- Option-D

Question87:-Which among the following substance is most elastic ?

A:-Steel

B:-Rubber

C:-Brass

D:-Aluminium

Correct Answer:- Option-A

Question88:-When a body executes simple harmonic motion there is always a constant ratio between the displacement of mass and

A:-Velocity

B:-Acceleration

C:-Frequency

D:-Time period

Correct Answer:- Option-B

Question89:-A closed coil helical spring of stiffness 30 N/mm is arranged in series with another such spring of stiffness 60 N/mm. The stiffness of composite unit is

A:-30 N/mm

B:-45 N/mm

C:-10 N/mm

D:-20 N/mm

Correct Answer:- Option-D

Question90:-The diameter of a shaft is increased from 30 mm to 60 mm and other conditions remain same, how many times its torque carrying capacity increases

A:-2 times

B:-4 times

C:-8 times

D:-16 times

Correct Answer:- Option-C

Question91:-The back staff reading on a B.M. of R.L. 100.000 is 2.685 m. If foresight reading on a point is 1.345 m, the RL of the point is

A:-102.685

B:-101.345

C:-101.340

D:-104.030

Correct Answer:- Option-C

Question92:-An imaging line joining the points of equal elevation on the surface of the earth is called

A:-Contour gradient

B:-Level line

C:-Contour surface

D:-Contour line

Correct Answer:- Option-D

Question93:-Bulking of sand is caused due to

A:-Surface moisture

B:-Air voids

C:-Clay contents

D:-All the above

Correct Answer:- Option-A

Question94:-Long column is one which has ratio of effective length and least lateral dimension

A:-Less than 15

B:-Greater than 15

C:-Less than 20

D:-Greater than 20

Correct Answer:- Option-B

Question95:-Apparatus used to test soundness of cement is

A:-Vicat's apparatus

B:-Vee bee consistometer

C:-Lechatelier apparatus

D:-Compressive strength testing apparatus

Correct Answer:- Option-C

Question96:-According to Indian Road Congress, width of carriage way is

A:-3.75 m for single lane

B:-7.0 m for two lanes without raised kerbs

C:-10.5 m for three lanes

D:-All the above

Correct Answer:- Option-D

Question97:-Piece of brick cut with its one corner equivalent to half the length and half the width of a full brick is known as

A:-Queen closer

B:-King closer

C:-Bevelled closer

D:-Half bat

Correct Answer:- Option-B

Question98:-The standard BOD of water is taken for

A:-5 days at 20°C

B:-3 days at 20°C

C:-5 days at 27°C

D:-2 days at 27°C

Correct Answer:- Option-A

Question99:-Acid rains are caused due to atmospheric pollution of

A:-Carbon dioxide

B:-Chlorofluorocarbon

C:-Ozone

D:-Sulphur dioxide

Correct Answer:- Option-D

Question100:-Chlorine available in water after chlorination process is called

A:-Available chlorine

B:-Free chlorine

C:-Combined chlorine

D:-Residual chlorine

Correct Answer:- Option-D