Notations:
1. Options shown in green color and with ✔ icon are correct.
2. Options shown in red color and with ✗ icon are incorrect.

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Junior Engineer
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Sub-Section Number: 1
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Question Shuffling Allowed: Yes

Question Number: 1  Question Id: 1951  Question Type: MCQ  Option Shuffling: No
Correct: 1.0  Wrong: 0.33
In which of the following processes, the heat is fully converted into work?

a. Reversible adiabatic process
b. Reversible isobaric process
c. Reversible isometric process
d. Reversible isothermal process

Options:
1. a
2. b
3. c
4. d

Which one of the following represents open thermodynamic system?

a. Manual ice cream freezer
b. Centrifugal pump
c. Pressure cooker
d. Bomb calorimeter

Options:
1. a
2. b
3. c
4. d

Pistons of diesel engine are usually cooled by

a. Air
b. Water
c. Lubricating oil
d. Fuel oil

Options:
1. a
2. b
3. c
4. ** d

Air injection in IC engine refers to injection of

a. Air only
b. Liquid fuel only
c. Liquid fuel and air
d. Supercharging air

Options :
1. ** a
2. ** b
3. ✔ c
4. ** d

Question Number : 5  Question Id : 1955  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

By higher octane number of SI fuel, it is meant that the fuel has

a. Higher heating value
b. Higher flash point
c. Lower volatility
d. Longer ignition delay

Options :
1. ** a
2. ** b
3. ** c
4. ✔ d

Question Number : 6  Question Id : 1956  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
In which one of the following materials is the heat propagation minimum due to conduction heat transfer?

a. Lead  
b. Copper  
c. Water  
d. Air  

Options:
1. ✗ a  
2. ✗ b  
3. ✗ c  
4. ✓ d

A satellite floats in deep space with very high velocity. It will continuously lose heat by

a. Convection  
b. Conduction and convection  
c. Radiation  
d. Radiation and convection  

Options:
1. ✗ a  
2. ✗ b  
3. ✓ c  
4. ✗ d
Which one of the following is the correct statement?

Gate is provided in moulds to

a. Feed the casting at constant rate
b. Give passage to gases
c. Compensate for shrinkage
d. Avoid cavities

The method of casting for producing ornamental pieces are

a. Slush and gravity casting
b. Pressed and slush casting
c. Gravity and semi-permanent mould casting
d. Semi-permanent mould and pressed casting

Which one of following lubricants is most suitable for drawing mild steel wires?

a. Sodium stearate
b. Water
c. Lime-water
d. Kerosene
What is the major problem in hot extrusion?

a. Design of punch  
b. Design of die  
c. Wear and tear of die  
d. Wear of punch

Arc blow is more common in

a. A.C. welding  
b. D.C. welding with straight polarity  
c. D.C. welding with bare electrodes  
d. A.C. welding with bare electrodes

What is the major problem in hot extrusion?
In MIG welding, the metal is transferred into the form of which one of the following?

a. A fine spray of metal
b. Molten drops
c. Weld pool
d. Molecules

Options:
1. ✗ a
2. ☑ b
3. ✗ c
4. ✗ d

Soft material cannot be economically grounded due to

a. The high temperature involved
b. Frequent wheel clogging
c. Rapid wheel wear
d. Low work piece stiffness

Options:
1. ✗ a
2. ☑ b
3. ✗ c
4. ✗ d

Another name for the coal used in power plant is

a. Charcoal
b. Coke
c. Steam coal
d. Wet coal

Options:
1. ✗ a
Question Number : 16  Question Id : 1966  Question Type : MCQ  Option Shuffling : No  
Correct : 1.0  Wrong : 0.33

In a fluorescent tube circuit, choke is used as a

a. Starter  
b. Power factor improving device  
c. Source of heat  
d. Current limiting device

Options :
1. ** a  
2. ** b  
3. ** c  
4. ** d

Question Number : 17  Question Id : 1967  Question Type : MCQ  Option Shuffling : No  
Correct : 1.0  Wrong : 0.33

When a dynamo converts electrical energy into mechanical energy, it is called

a. motor  
b. generator  
c. productor  
d. inverter

Options :
1. ** a  
2. ** b  
3. ** c  
4. ** d

Question Number : 18  Question Id : 1968  Question Type : MCQ  Option Shuffling : No  
Correct : 1.0  Wrong : 0.33
The terminal voltage of a DC shunt generator on loading

a. increases slightly
b. increases sharply
c. remains constant
d. decreases slightly

Question Number : 19  Question Id : 1969  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

The value of flux involved in the emf equation of transformer is

a. instantaneous
b. maximum
c. average
d. rms

Question Number : 20  Question Id : 1970  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
For maximum efficiency operation of a transformer, iron losses equals

- a. copper losses
- b. hysteresis losses
- c. eddy current losses
- d. humming losses

Options:

1. a
2. b
3. c
4. d

Question Number : 21  Question Id : 1971  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

Nodal analysis is based on

- a. Kirchhoff’s Current Law
- b. Kirchhoff’s Voltage Law
- c. Law of Conservation of Energy
- d. Law of Conservation of Momentum

Options:

1. a
2. b
3. c
4. d

Question Number : 22  Question Id : 1972  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
Which of the following is an active element in a circuit

a. current source  
b. resistance  
c. inductance  
d. capacitance

Options :
1. a  
2. b  
3. c  
4. d

The generator which gives DC supply to the rotor is called

a. Convertor  
b. Exciter  
c. Rectifier  
d. Inverter

Options :
1. a  
2. b  
3. c  
4. d

Question Number : 23  Question Id : 1973  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

Question Number : 24  Question Id : 1974  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
Which of the following is an example of a non-ohmic resistance

a. Copper wire  
b. Carbon resistance  
c. Diode  
d. Tungsten wire

Which of the following Boolean expression is NOT TRUE?

a. A+1=A  
b. A+A’=1  
c. A.A=A  
d. A.A’=0

Question Number : 25  Question Id : 1975  Question Type : MCQ  Option Shuffling : No  
Correct : 1.0  Wrong : 0.33

Question Number : 26  Question Id : 1976  Question Type : MCQ  Option Shuffling : No  
Correct : 1.0  Wrong : 0.33
The octal equivalent of decimal number 66 is

a. 102
b. 104
c. 84
d. 82

Which of the following is a universal gate

a. NOR
b. AND
c. OR
d. NOT
The transistor configuration producing highest output resistance is

a. CE  
b. CB  
c. CC  
d. CE and CB both

Options:
1. a  
2. b  
3. c  
4. d

The Schottky-barrier diode has

a. no PN junction  
b. one PN junction  
c. two PN junctions  
d. three PN junction

Options:
1. a  
2. b  
3. c  
4. d

Question Number : 29  Question Id : 1979  Question Type : MCQ  Option Shuffling : No  
Correct : 1.0  Wrong : 0.33

Question Number : 30  Question Id : 1980  Question Type : MCQ  Option Shuffling : No  
Correct : 1.0  Wrong : 0.33
The diode that can be used for harmonic generation is

a. backward diode
b. PN junction diode
c. tunnel diode
d. varactor diode

Options :

1. a
2. b
3. c
4. d

The temperature coefficient of intrinsic semiconductors is

a. zero
b. positive
c. negative
d. same as that of metals

Options :

1. a
2. b
3. c
4. d

Question Number : 31  Question Id : 1981  Question Type : MCQ  Option Shuffling : No  Correct : 1.0  Wrong : 0.33

Question Number : 32  Question Id : 1982  Question Type : MCQ  Option Shuffling : No  Correct : 1.0  Wrong : 0.33
Mobility of electrons is highest in

a. Si
b. GeAs
c. C
d. Ge

Options:
1. a
2. b
3. c
4. d

Question Number: 33 Question Id: 1983 Question Type: MCQ Option Shuffling: No
Correct: 1.0 Wrong: 0.33

Tunnel diode is made of the semiconductors which are

a. highly doped
b. sparsely doped
c. intrinsic
d. normally doped

Options:
1. a
2. b
3. c
4. d

Question Number: 34 Question Id: 1984 Question Type: MCQ Option Shuffling: No
Correct: 1.0 Wrong: 0.33
A + A' has the logic value

a. 0
b. 1
c. A
d. A'

Options:

1. a
2. b
3. c
4. d

The specific gravity of water is taken as

a. 0.001
b. 0.01
c. 0.1
d. 1

Options:

1. a
2. b
3. c
4. d

Question Number : 35  Question Id : 1985  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

Question Number : 36  Question Id : 1986  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
Falling drops of water become spheres due to the property of

a. Surface tension of water
b. Compressibility of water
c. Capillarity of water
d. Viscosity of water

The liquid used in manometer should have

a. Low density
b. High density
c. Low surface tension
d. High surface tension
A soil has a liquid limit of 40% and plasticity index of 20%. The plastic limit of the soil will be

a. 20%
b. 30%
c. 40%
d. 60%

Options:

In a particular soil sample, laboratory analysis has yielded the following results:

A. Sand - 20%
B. Silt - 30%
C. Clay - 50%

Without using the textural chart, the correct textural classification of the soil would be

a. Loam
b. Sandy soil
c. Silty loam
d. Clay

Options:
4. d

Question Number: 40  Question Id: 1990  Question Type: MCQ  Option Shuffling: No
Correct: 1.0  Wrong: 0.33
Permissible shear stress in concrete is a function of

a. Grade of concrete
b. Grade of steel
c. Percentage of steel reinforcement
d. Percentage of steel reinforcement and grade of concrete

Options:
1. a
2. b
3. c
4. d

Question Number: 41  Question Id: 1991  Question Type: MCQ  Option Shuffling: No
Correct: 1.0  Wrong: 0.33
In which of the following cases we avoid bolted connection

a. Connection subjected to fire
b. Connection subjected to frequent earthquake load
c. Connection subjected to snow load
d. Connection subjected to corrosion problem

Options:
1. a
2. b
3. c
4. d

Question Number: 42  Question Id: 1992  Question Type: MCQ  Option Shuffling: No
Correct: 1.0  Wrong: 0.33
For a well conditional triangle, no angle should be less than

a. 20°

b. 30°

c. 45°

d. 60°

Options:
1. a
2. b
3. c
4. d

What is the magnetic declination at a place if the magnetic bearing of the sun at noon is 184°?

a. 4°W

b. 4°E

c. 176°W

d. 176°E

Options:
1. a
2. b
3. c
4. d

Question Number : 43  Question Id : 1993  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

Question Number : 44  Question Id : 1994  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
Slack represents the difference between the

- Earliest completion time and latest allowable time
- Latest allowable time and earliest completion time
- Earliest completion time and normal expected time
- Latest allowable time and normal allowable time

Options:

1. a
2. b
3. c
4. d

The setting and hardening of cement after addition of water is due to

- The presence of gypsum
- Binding action of water
- Hydration of some of the constituent compounds of cement
- Evaporation of water

Options:

1. a
2. b
3. c
4. d
Grading of aggregate in a concrete mix is necessary to achieve

a. Adequate workability
b. Higher density
c. Reduction in voids
d. Better durability

Options:

1. a
2. b
3. c
4. d

Question Number : 47  Question Id : 1997  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

LVDT is a

a. pressure transducer
b. displacement transducer
c. velocity transducer
d. acceleration transducer

Options:

1. a
2. b
3. c
4. d

Question Number : 48  Question Id : 1998  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
The dimensions of EMF are

a. $ML^2T^{-1}T^{-3}$

b. $M^{-1}T^{-3}$

c. $ML^2T^{-2}T^{-3}$

d. $ML^3T^{-1}T^{-3}$

Options:

1. a
2. b
3. c
4. d

Magnetic field intensity has the dimensions

a. $IL$

b. $I^2L$

c. $IL^{-1}$

d. $IL^{-2}$

Options:

1. a
2. b
3. c
4. d
When measuring phase angle between two waves using a CRO, the time base generator is connected to

a. X plate
b. Y plate
c. both X and Y plate
d. neither X nor Y plates

Which of the following is not correct?

a. Voltmeter should have a very high resistance
b. An ammeter should have a very low resistance
c. A shunt should have a very low resistance
d. An electronic voltmeter draws appreciable current from source
The prescribed per capita water demand for small towns and city is

a. 135 lpcd
b. 100 lpcd
c. 200 lpcd
d. 180 lpcd

The spacing between two bars in fine screen is

a. 20 mm
b. 30 mm
c. 10 mm
d. 5 mm
In villages, to disinfect the well water, the most common disinfectant used is
   a. silver and bromine
   b. potassium permanganate
   c. iodine solution
   d. chlorine and bromine

Options :
   1. a
   2. b
   3. c
   4. d

The carbon monoxide causes
   a. coughing and choking problem in respiratory system
   b. broncho-constriction
   c. headache, vomiting, slurring of speech, convulsions, coma and death
   d. chronic bronchitis followed by asthma

Options :
   1. a
   2. b
   3. c
   4. d
An octave band is a frequency band with upper and lower cut-off frequencies having a ratio of

a. 3
b. 4
c. 2
d. 5

Options:

1. a
2. b
3. c
4. d

Question Number : 57  Question Id : 2007  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

The CO₂ concentration in the atmosphere was 355 ppm in 1990 that is increasing at a rate of
a. 1.00 ppm
b. 1.5 ppm
c. 0.50 ppm
d. 0.20 ppm

Options:

1. a
2. b
3. c
4. d

Question Number : 58  Question Id : 2008  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
The person who gave the stored program concept in which program and data to be processed are stored in the same memory is:

a. John Von Neumann  
b. Alan Turing  
c. Charles Babbage  
d. Bill Gates

---

Which of the following is the most simple, intuitive, and easiest to use of all input devices?

a. Mouse  
b. Trackball  
c. Keyboard  
d. Touch screen

---
Both RAM and ROM are

a. Random access memory
b. Sequential access memory
c. Read and write memory
d. Read only memory

Options:

1. a
2. b
3. c
4. d

Question Number: 61  Question Id: 2011  Question Type: MCQ  Option Shuffling: No
Correct: 1.0  Wrong: 0.33

Unix is a ____________ operating system.

a. Single-user and time-sharing
b. Multi-user and time-sharing
c. Multi-user and distributed
d. Real-time

Options:

1. a
2. b
3. c
4. d

Question Number: 62  Question Id: 2012  Question Type: MCQ  Option Shuffling: No
Correct: 1.0  Wrong: 0.33

The decimal representation of the binary number \(101010.011\) is

a. 42.25
b. 24.25
c. 24.375
d. 42.375

Options:
Question Number: 63  Question Id: 2013  Question Type: MCQ  Option Shuffling: No
Correct: 1.0  Wrong: 0.33

Considering X and Y as binary variables, the Boolean expression X.Y.0 is equivalent to

a. X  
b. 1  
c. 0  
d. Y

Options:
1. a  
2. b  
3. c  
4. d

Question Number: 64  Question Id: 2014  Question Type: MCQ  Option Shuffling: No
Correct: 1.0  Wrong: 0.33

Assembly language is a

a. Machine independent language  
b. Machine dependent language  
c. High-level language  
d. Language which requires interpreter

Options:
1. a  
2. b  
3. c
Question Number : 65  Question Id : 2015  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

Mail-merge is a component of

a. MS-Word
b. WordPress
c. MS-Excel
d. MS-Access

Options :
1. a
2. b
3. c
4. d

Question Number : 66  Question Id : 2016  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

Internet is a

a. Local Area Network (LAN)
b. Metropolitan Area Network (MAN)
c. Wide Area Network (WAN)
d. Storage Area Network (SAN)

Options :
1. a
2. b
3. c
4. d

Question Number : 67  Question Id : 2017  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
Google Chrome is a

- Application layer protocol
- Web search engine
- Web browser
- Web data store

Options:
1. a
2. b
3. c
4. d

Question Number: 68  Question Id: 2018  Question Type: MCQ  Option Shuffling: No
Correct: 1.0  Wrong: 0.33

The “front view” and “top view” of a line are represented below and above the XY line respectively. The projections are drawn in:

- First angle
- Second angle
- Third angle
- It’s an orthographic projection

Options:
1. a
2. b
3. c
4. d

Question Number: 69  Question Id: 2019  Question Type: MCQ  Option Shuffling: No
Correct: 1.0  Wrong: 0.33
Which of the following is not a type of bearing:

a. Thrust bearing  
b. Journal Bearing  
c. Ball bearing  
d. Pulley.

Options:

1. a
2. b
3. c
4. d

Which of the following is not a type of bearing:

a. Thrust bearing  
b. Journal Bearing  
c. Ball bearing  
d. Pulley.

Options:

1. a
2. b
3. c
4. d

Very small parts of a wrist watch are to be represented on drawings. Which type of scale do you suggest?

a. Reducing scales  
b. Full size scales  
c. Enlarging scales.  
d. Scales with R.F.=1:1

Options:

1. a
2. b
3. c
4. d

Very small parts of a wrist watch are to be represented on drawings. Which type of scale do you suggest?

a. Reducing scales  
b. Full size scales  
c. Enlarging scales.  
d. Scales with R.F.=1:1

Options:

1. a
2. b
3. c
4. d
Major axis and Minor Axis are found in:

a. Circle  
b. Ellipse  
c. Cycloid  
d. Involute.

Options:

1. a  
2. b  
3. c  
4. d

The size of vertical and horizontal edges on an object appear in its isometric projection as

a. shortened by 81%  
b. shortened by 30%  
c. shortened by 19%  
d. shortened by 29%

Options:

1. a  
2. b  
3. c  
4. d

Question Number: 72  Question Id: 2022  Question Type: MCQ  Option Shuffling: No  Correct: 1.0  Wrong: 0.33

Question Number: 73  Question Id: 2023  Question Type: MCQ  Option Shuffling: No  Correct: 1.0  Wrong: 0.33
A ball is rolled on a floor. Moving in straight line, it stops after some time due to frictional force exerted by the floor. Which of the following statements about acceleration and force during the motion of the ball is correct?

a. Both acceleration and force are positive
b. Both acceleration and force are negative
c. Acceleration is positive but force is negative
d. Acceleration is negative but force is positive.

Let $g$ be the acceleration due to gravity at a place on earth (mass $M$ and radius $R$). The ratio $g/G$ at the place is given by ($G$ - Universal gravitational constant)

a. $M/R$
b. $M/R^2$
c. $MR$
d. $MR^2$. 
A ball of mass $m$ is raised to height $h$ and then dropped to the ground. When the ball has fallen half of the height, the velocity of the ball is (neglecting air resistance), where $g$ is the acceleration due to gravity.

\[
\begin{align*}
\text{a. } & \sqrt{gh} \\
\text{b. } & \sqrt{2gh} \\
\text{c. } & \sqrt{gh/2} \\
\text{d. } & 2\sqrt{gh}.
\end{align*}
\]

Three tuning forks (of different frequencies) are used to produce sound in a science laboratory. Which of the following statements is correct?

\[
\begin{align*}
\text{a. } & \text{The wavelength of sound produced by the tuning fork of highest frequency is smallest} \\
\text{b. } & \text{The wavelength of sound produced by the tuning fork of highest frequency is largest} \\
\text{c. } & \text{The velocities of sound produced by the three tuning forks are different} \\
\text{d. } & \text{The pitch of sound produced by the tuning fork of lowest frequency is highest.}
\end{align*}
\]
An image of an object is seen in a plane mirror. The image is

a. real and inverted
b. real and erect
c. virtual and inverted
d. virtual and erect

Options:

Question Number : 78  Question Id : 2028  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

A current of 1A flows towards right in a conductor. The number of electrons passing per second through any cross section of the conductor and their direction is about

a. $6 \times 10^{18}$ towards right
b. $6 \times 10^{18}$ towards left
c. $6 \times 10^{16}$ towards right
d. $6 \times 10^{16}$ towards left.

Options:

Question Number : 79  Question Id : 2029  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
The oxide of an element ‘A’ can react separately with an acid and a base to produce salt and water.

a. The element ‘A’ is metallic and the oxide is amphoteric.
b. The element ‘A’ is metallic and the oxide is basic.
c. The element ‘A’ is non metallic and the oxide is acidic.
d. The element ‘A’ is non metallic and the oxide is amphoteric.

Options:
1. a
2. b
3. c
4. d

Which one of the following sets of conditions favours the liquefaction of gases?

a. Low pressure and low temperature
b. High pressure and high temperature
c. High pressure and low temperature
d. Low pressure and high temperature

Options:
1. a
2. b
3. c
4. d
What is the value of the coefficient ‘A’ in the following chemical equation?

\[ 2\text{Al} + \ 'A' \text{ HCl} \quad ----> \quad 2\text{AlCl}_3 + 3\text{H}_2 \]

a. 3  
b. 4  
c. 5  
d. 6

Options:
1. a
2. b
3. c
4. d

On hydration, a hydrocarbon ‘X’ produces a compound ‘Y’ with molecular formula C\(_2\)H\(_6\)O. ‘X’ forms a dibromo compound with bromine. The compound ‘Y’ produces a carboxylic acid on oxidation with acidified K\(_2\)Cr\(_2\)O\(_7\). The hydrocarbon ‘X’ is

a. Ethene  
b. Ethane  
c. Propane  
d. Propene

Options:
1. a
2. b
3. c
4. d
Which one of the following is the greatest in atomic size?

a. Aluminum  
b. Magnesium  
c. Sodium  
d. Potassium

Options:

1. a
2. b
3. c
4. d

An acid solution is completely neutralized by a base. The pH of the salt solution so produced is

a. 14  
b. 7  
c. 5  
d. 0

Options:

1. a
2. b
3. c
4. d

Question Number : 84  Question Id : 2034  Question Type : MCQ  Option Shuffling : No  
Correct : 1.0  Wrong : 0.33

Question Number : 85  Question Id : 2035  Question Type : MCQ  Option Shuffling : No  
Correct : 1.0  Wrong : 0.33
Cousins were discussing amongst themselves as to whose features resemble those of which elder in the family. Which subject can explain their conclusions?

a. Evolution
b. Genetics
c. Adaptation
d. Physiology

Options:
1. a
2. b
3. c
4. d

Question Number: 86  Question Id: 2036  Question Type: MCQ  Option Shuffling: No
Correct: 1.0  Wrong: 0.33

Roots absorb water from soil but which plant tissue reaches the water to the leaves for Photosynthesis?

a. Xylem
b. Phloem
c. Parenchyma
d. Collenchyma

Options:
1. a
2. b
3. c
4. d

Question Number: 87  Question Id: 2037  Question Type: MCQ  Option Shuffling: No
Correct: 1.0  Wrong: 0.33
Which human activity alone has caused many wild animals to become extinct?

a. Hunting  
b. Mining  
c. Electrification  
d. Deforestation

Options :
1. a  
2. b  
3. c  
4. d

---

A plant and an animal cell were focused under the microscope. Which features helped students to differentiate the two

a. Plant cell and animal cell both had nuclei  
b. Plant cell had a cell wall but animal cell did not.  
c. Animal cell had a cell membrane but plant cell did not  
d. Animal cell had a large vacuole but plant cell did not

Options :
1. a  
2. b  
3. c  
4. d

---

Question Number : 88  Question Id : 2038  Question Type : MCQ  Option Shuffling : No  
Correct : 1.0  Wrong : 0.33

Question Number : 89  Question Id : 2039  Question Type : MCQ  Option Shuffling : No  
Correct : 1.0  Wrong : 0.33
If both kidneys of a patient fail, an artificial kidney can help the patient live on through the process of

a. Electrolysis
b. Dialysis
c. Blood Transfusion
d. Gene therapy

The term “Biodiversity” means

a. all kinds of plants and animals in the forests
b. all the various species of organisms living on earth
c. various types of animals living on earth
d. the five kingdoms of life except thermo bacteria
Let \( x \) be the greatest number that divides 952, 1165 and 1591 leaving the same remainder in each case. The sum of digits of \( x \) is

- a. 4
- b. 5
- c. 6
- d. 7

Question Number : 92  Question Id : 2042  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

Let \( x = 5^4 \times 7^3 \times 19^3 \), \( y = 5^3 \times 7^4 \times 19^3 \), \( z = 5^5 \times 7^5 \times 19^3 \) and \( w = 5^3 \times 7^5 \times 19^4 \)

The LCM of \( x, y, z \) and \( w \) is

- a. \( 5^3 \times 7^4 \times 19^4 \)
- b. \( (35)^5 \times 19^4 \)
- c. \( (35)^4 \times 19 \)
- d. \( 5^4 \times 7^5 \times 19^4 \)

Question Number : 93  Question Id : 2043  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
A’s income is 10% below C’s income and B’s income is 20% above C’s income. What percent is B’s income of A’s income.

a. 75
b. $109\frac{1}{11}$
c. 130
d. $133\frac{1}{3}$

If A : B = 2 : 3, 7B = 9C and 15C = 14D, then A : D is

a. 5 : 4
b. 4 : 5
c. 12 : 35
d. 1 : 7
The ratio of two numbers is 15:13. If each number is increase by 3, then their ratio becomes 8:7. The sum of the numbers is

a. 28
b. 42
c. 56
d. 84

In one alloy the ratio of zinc and copper is 2:11 whereas in the other one, this ratio is 5:21. In what ratio the two be mixed so that the ratio of zinc and copper in the new alloy is 1:5?

a. 2:1
b. 3:2
c. 4:3
d. 5:3
A jar was full of a mixture containing 40% spirit. A part of this mixture was replaced by another mixture containing 19% spirit. If the percentage of spirit was found to be 26, what part of the jar was replaced by another mixture?

a. \( \frac{1}{3} \)

b. \( \frac{2}{3} \)

c. \( \frac{2}{5} \)

d. \( \frac{3}{5} \)

A loan of Rs.25500 is to be paid back in two equal annual instalments. If the rate of interest charged is 4% per annum, compounded annually. Then each instalment will be of Rs.

a. 12750

b. 13250

c. 13320

d. 13520
A sum of Rs. 20000 is lent partly at 8% and remaining at 10% per annum. If the average yearly rate of interest is 9.4%, then the sum lent at 10% is

a. Rs.6000
b. Rs.8000
c. Rs.12000
d. Rs.14000

A trader marks his goods 20% above the cost price but allows the customer a discount of 5% on it. If he further gives 5% discount for cash payment, then his profit percent in this case is

a. 10
b. 9.2
c. 8.3
d. 8.1

A trader marks his goods 20% above the cost price but allows the customer a discount of 5% on it. If he further gives 5% discount for cash payment, then his profit percent in this case is

a. 10
b. 9.2
c. 8.3
d. 8.1
A person buys goods for Rs. 96000. He sells $\frac{2}{5}$ of it at a loss of 6%. At what gain percent should he sell the remaining part to gain 10% on the whole?

a. $20\frac{2}{3}$
b. $19\frac{1}{3}$
c. 15
d. 16

Options:
1. a
2. b
3. c
4. d

A Scooterist travels for 10 hours, the first half distance at 21 km/hour and the rest at 24 km/hour. The distance (in km) travelled is

a. 225
b. 224
c. 220
d. 180

Options:
1. a
2. b
3. c
4. d
A man rows upstream 13 km and downstream 28 km taking 5 hours each time. The speed (in km per hour) of the current is

a. $\frac{1}{4}$  
b. $\frac{1}{2}$  
c. $\frac{3}{4}$  
d. 3

Options:

1. a
2. b
3. c
4. d

A can do a piece of work in 40 days. He worked for 5 days, then B finished it in 21 days. A and B together can finish the work in

a. 24 days  
b. 20 days  
c. 15 days  
d. 12 days

Options:

1. a
2. b
3. c
4. d
A certain number of persons can do a piece of work in 40 days, but if there were 8 persons more, it would have been finished 10 days earlier. How many persons were there in the beginning?

a. 28  
b. 24  
c. 20  
d. 18

Question Number: 106  Question Id: 2056  Question Type: MCQ  Option Shuffling: No  
Correct: 1.0  Wrong: 0.33

Five years ago, the average age of A and B was 18 years. The average age of A, B, C and D today is 24 years. The average age of D and C after 8 years from today will be

a. 21  
b. 29  
c. 30  
d. 33

Options:

1. a  
2. b  
3. c  
4. d

Question Number: 107  Question Id: 2057  Question Type: MCQ  Option Shuffling: No  
Correct: 1.0  Wrong: 0.33

The average of five consecutive odd numbers is 27. The average of first three of them, when arranged in ascending order, is

a. 25  
b. 26  
c. 27  
d. 23

Options:
Question Number : 108  Question Id : 2058  Question Type : MCQ  Option Shuffling : No  
Correct : 1.0  Wrong : 0.33

If \( \alpha \) and \( \beta \) are the roots of the equation \( ax^2+bx+c=0 \), then the roots of the equation \( cx^2+bx+a=0 \) are

a. \(-\alpha, -\beta\)
b. \(\frac{-1}{\alpha}, \frac{1}{\beta}\)
c. \(\frac{1}{\alpha}, \alpha\)
d. \(\frac{1}{\beta}, \alpha\)

Question Number : 109  Question Id : 2059  Question Type : MCQ  Option Shuffling : No  
Correct : 1.0  Wrong : 0.33

If the equation \((n+1)x^2 - 4(n+2)x + 25 = 0\) has equal roots, then the values of \(n\) are

a. \(-\frac{3}{4}, \frac{3}{4}\)
b. \(3, -3\)
c. \(3, -\frac{3}{4}\)
d. \(-3, \frac{4}{3}\)
Question Number : 110  Question Id : 2060  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

One of the factors of \((x+1)(x+3)(x+5)(x+7)-9\) is

a. \(x^2 + 8x + 6\)
b. \(x^2 + 8x + 10\)
c. \(x^2 + 8x + 9\)
d. \(x^2 + 8x + 8\)

Options :
1. a
2. b
3. c
4. d

Question Number : 111  Question Id : 2061  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

Factorisation of \(x^4 - 9x^2 + 20\) is

a. \((x-4)(x+1)(x^2-5)\)
b. \((x-2)(x+2)(x^2+5)\)
c. \((x+4)(x+1)(x^2-5)\)
d. \((x-2)(x+2)(x^2-5)\)

Options :
1. a
2. b
3. c
4. d

Question Number : 112  Question Id : 2062  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
If \((p+2)\)th term of an arithmetic series is \(5p+6\), then the sum of its first five terms is
a. 44
b. 49
c. 54
d. 55

Options:
1. a
2. b
3. c
4. d

If the sum of an infinite number of terms of a geometric series is 20, and sum of their squares is 100, then the common ratio of the original series is
a. \(\frac{3}{5}\)
b. \(\frac{2}{5}\)
c. \(\frac{3}{4}\)
d. \(\frac{1}{4}\)

Options:
1. a
2. b
3. c
4. d

Question Number : 113  Question Id : 2063  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

Question Number : 114  Question Id : 2064  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
The value of \( \cos \theta \cot \theta \left[ \frac{1}{\csc \theta - 1} + \frac{1}{\csc \theta + 1} \right] \) is

a. \( \frac{1}{2} \)
b. 1
c. \( \frac{3}{2} \)
d. 2

Options:

1. a
2. b
3. c
4. d

A tower of height 40m stands vertically on the ground. From a point on the ground which is \( x \) m away from the foot of the tower, the angle of elevation of its top is found to be 60°. If \( y \) is the distance (in m) of the point from the top of the tower, then the value of \( (x+y) \) is

a. \( 40\sqrt{3} \) m
b. \( \frac{80\sqrt{3}}{3} \) m
(c. \( 80\sqrt{3} \) m
d. \( 120\sqrt{3} \) m

Options:

1. a
2. b
3. c
4. d
With which of the following centres of learning, Chanakya, the famous teacher of Chandragupta Maurya was associated?

a. Takshashila  
b. Nalanda  
c. Vikramasila  
d. Vaishali

Options:
1. a
2. b
3. c
4. d

The famous battle of Takkolam of South India was fought between

a. Cholas and North Chalukyas  
b. Cholas and Rashtrakutas  
c. Cholas and Hoyasals  
d. Cholas and Pandyas

Options:
1. a
2. b
3. c
4. d
Which Congress President negotiated with both Cripps Mission and Lord Wavell?

- a. Abul Kalam Azad
- b. Jawahar Lal Nehru
- c. J.B. Kriplani
- d. C. Rajgopalachari

Question Number : 120  Question Id : 2070  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

Because of which one of the following reasons, clouds do not precipitate in deserts?

- a. Low Pressure
- b. Low Humidity
- c. High wind velocity
- d. High temperature

The atmospheric layer which reflects radio waves is called

- a. Exosphere
- b. Stratosphere
- c. Ionosphere
- d. Thermosphere
In the interior of Earth,

a. temperature falls with increasing depth
b. pressure falls with increasing depth
c. temperature rises with increasing depth
d. both temperature and pressure fall with increasing depth

If an object is placed at the centre of curvature of a concave mirror, the position of image is

a. at the principal focus
b. between the principal focus and the centre of curvature
c. at centre of curvature
d. beyond centre of curvature
Question Number : 123  Question Id : 2073  Question Type : MCQ  Option Shuffling : No  
Correct : 1.0  Wrong : 0.33

In which of the following, speed of sound is maximum

a. air at 0°C  
b. air at 100°C  
c. in the water  
d. in the wood

Options :
1. a  
2. b  
3. c  
4. d

Question Number : 124  Question Id : 2074  Question Type : MCQ  Option Shuffling : No  
Correct : 1.0  Wrong : 0.33

Microwave oven consumes less power due to

a. small frequency of radiation  
b. short wavelength of radiation  
c. large frequency as well as wavelength of radiation  
d. small frequency as well as wavelength of radiation

Options :
1. a  
2. b  
3. c  
4. d

Question Number : 125  Question Id : 2075  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

Which Amendment to the Constitution inserted a new Article 21A providing rights to education in the Constitution?

a. 86th Amendment  
b. 87th Amendment  
c. 88th Amendment  
d. 89th Amendment

Options :
1. [ ] a  
2. [ ] b  
3. [ ] c  
4. [ ] d

Which one of the following subjects comes under the common jurisdiction of the Supreme Court and the high court?

a. Mutual disputes among states  
b. Dispute between centre and states  
c. Protection of the fundamental rights  
d. protection from the violation of the constitution.

Options :
1. [ ] a  
2. [ ] b  
3. [ ] c  
4. [ ] d

Correct : 1.0  Wrong : 0.33
Which of the following is the name of the organisation, created to provide full employment and self-reliance to the women folk in India

a. OECD  
b. ROSCA  
c. USO  
d. SEWA

Options:

1. a  
2. b  
3. c  
4. d

Question Number : 128  Question Id : 2078  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

Which one of the following committees recommended the abolition of reservation of items for small scale sector in industry

a. Abid Hussain Committee  
b. Narasimhan Committee  
c. Nayak Committee  
d. Rakesh Mohan Committee

Options:

1. a  
2. b  
3. c  
4. d

Question Number : 129  Question Id : 2079  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
Shilling is the currency of

a. Kenya
b. South Korea
c. Israel
d. Ghana

Which one of the following is the oldest Grand Slam of the World

a. Wimbledon
b. French Open
c. Australian Open
d. US Open

The Dronacharya award for sports coaches was instituted in the year _______.

a. 1984
b. 1985
c. 1987
d. 1988
Number of chamber found in the heart of whale is

a. 2  
b. 3  
c. 4  
d. 1

Question Number : 133  Question Id : 2083  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
Match the hormone in list 1 with list 2 and select the correct answer using codes given below

<table>
<thead>
<tr>
<th>list-1</th>
<th>list-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Adrenaline</td>
<td>1. Anger, fear, danger</td>
</tr>
<tr>
<td>B. Estrogen</td>
<td>2. Attracting partners through sense of smell</td>
</tr>
<tr>
<td>C. Insulin</td>
<td>3. Females</td>
</tr>
<tr>
<td>D. Pheromones</td>
<td>4. Glucose</td>
</tr>
</tbody>
</table>

a. A-3          
  B-1          
  C-4          
  D-2

b. A-1          
  B-3          
  C-2          
  D-4

c. A-1          
  B-3          
  C-4          
  D-2

d. A-3          
  B-1          
  C-2          
  D-4

Question Number : 134  Question Id : 2084  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

For a colour blind person, red colour appears as

a. Yellow
b. Blue
c. Green
d. Violet

Options :
1. a
The catalyst used in the manufacture of the sulphuric acid by contact process is

a. $\text{Al}_2\text{O}_3$
b. $\text{Cr}_2\text{O}_3$
c. $\text{V}_2\text{O}_5$
d. $\text{MnO}_2$

Which one of the following pairs of materials serves as electrodes in chargeable batteries commonly used in devices such as torch lights, electric shavers etc?

a. Nickel and cadmium
b. Zinc and carbon
c. Lead peroxide and lead
d. Iron and cadmium
Question Number : 137  Question Id : 2087  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

Which one of the following vitamins is essential for coagulation of blood?

a. Vitamin A  
b. Vitamin $B_{12}$  
c. Vitamin K  
d. Vitamin D

Options :
1. a  
2. b  
3. c  
4. d

Question Number : 138  Question Id : 2088  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

Which three districts have been included into the national capital Region on June 09, 2015?

a. Jind, Karnal, Muzaffarnagar  
b. Jind, Karnal, Rohtak  
c. Palwal, Karnal, Muzaffarnagar  
d. Bhiwani, Rohtak, Karnal

Options :
1. a  
2. b  
3. c  
4. d

Question Number : 139  Question Id : 2089  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
The sixth Petersberg climate dialogue to decide on a negotiation draft for the UN Climate change conference in Paris held in which city on may 18-19, 2015

a. Tokyo
b. Shanghai
c. Kyoto
d. Berlin

Options :

1. 
2. 
3. 
4. 

The state which signed $400 million loan pact with WTO on june 4, 2015 is ……

a. Andhra pradesh
b. Telangana
c. kerala
d. Tamil nadu

Options :

1. 
2. 
3. 
4. 

Correct : 1.0  Wrong : 0.33
Pointing to a photograph, a lady said, “He is the husband of my husband’s father’s daughter.” How is the person in the photograph related to the lady?

a. Brother
b. Brother-in-Law
c. Cousin
d. Son-in-Law

Three of the four number-pairs in the alternatives have numbers which hold the same relationship as the numbers in the number-pair given below. Find out the number-pair in which the two numbers do not hold the same relationship as the two numbers in the number-pair below.

63 : 8

a. 48 : 7
b. 35 : 6
c. 15 : 4
d. 79 : 9
‘Book’ is related to ‘Chapter’ in the same way as ‘School’ is related to

a. Classrooms
b. Village
c. Education
d. Boundary

Options :

1. a
2. b
3. c
4. d

In a six member panel sitting in a row, R is to the right of Q and O is to the right of P. S is not sitting close to P. N is between Q and O.

Which two persons are sitting in the middle?

a. NO
b. QR
c. QN
d. RS

Options :

1. a
2. b
3. c
4. d
Arrange the following words in a meaningful logical sequence and choose the appropriate number sequence from the alternatives.

1. Child  
2. Income  
3. Birth  
4. Employment  
5. Education  
6. Infant

a. 3, 6, 1, 5, 2, 4
b. 2, 4, 5, 1, 3, 6
c. 1, 3, 6, 5, 4, 2
d. 3, 6, 1, 5, 4, 2

Options:

1. a
2. b
3. c
4. d

One term in the following number series is wrong. Find out the wrong term.

2, 4, 6, 10, 14, 20, 26

a. 6
b. 10
c. 14
d. 20

Options:

1. a
2. b
3. c
4. d
In a certain code, ‘327’ means ‘girls are beautiful’, ‘952’ means ‘leaves are green’ and ‘639’ means ‘green is beautiful’. Which digit means ‘leaves’ in that code?

a. 9
b. 6
c. 5
d. 2

In a certain language, ‘POPULAR’ is coded as ‘RPAOLPU’, then in that language, ‘CENTRAL’ would be coded as:

a. LCARTNE
b. LCEARNT
c. CLEANRT
d. LCAERNT

Question Number : 148  Question Id : 2098  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33

Question Number : 149  Question Id : 2099  Question Type : MCQ  Option Shuffling : No
Correct : 1.0  Wrong : 0.33
Ravi cycled 7 km Southwards, then he turned right and covered 4 km. Then he turned right again and moved 10 km. How far is he from the starting point by shortest distance?

a. 5 km  
b. 4 km  
c. 6 km  
d. 7 km

Options:

The numbers in the following figures follow a pattern. Find the number which will replace the question mark.

```
4
6 36 3
5

7
5 44 4
6

9
4 ? 3
7
```

a. 66  
b. 69  
c. 52  
d. 112

Options: