



Rrb Group D CBT - 1 Previous Year Question Paper Overview

Here, you can solve all the questions asked in Rrb Group D CBT - 1 Previous Year Question Paper on 2018-10-01 in the Evening exam. The detailed solutions are also provided for every previous year question and some of these questions can be asked again in your Rrb Group D CBT - 1 exam. There are 100 questions in the exam and 90 minutes are provided for the Rrb Group D CBT - 1 exam. The Cutoff of the exam was 77 marks hence you should try to score at least 87 marks.

Rrb Group D CBT - 1 Previous Year Question Paper : Questions and Solutions

Question 1 :

In 2017, the Government of India announced which of the following schemes to help replace incandescent bulbs with LED bulbs?

Difficulty : Moderate

Average Time : 45 Seconds

Options :

1. Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)
2. Vidyut Shakti Samakshan Yojana (VSSY)
3. Integrated Power Development Scheme (IPDS)
4. Unnat Jyoti by Affordable LEDs for All (UJALA)

Solution :

The correct answer is **option 4** i.e. **Unnat Jyoti by Affordable LEDs for All (UJALA)**.



- **Unnat Jyoti by Affordable LEDs for All (UJALA)** was launched by Prime Minister of India Narendra Modi on 1 May 2015, replacing the "Bachat Lamp Yojana". The project is spearheaded by the Energy Efficiency Services Limited. In non-subsidized **LED** lamp distribution projects, this program is considered the world's largest.
- As of January 2017, 21 crore LED bulbs have been distributed across the country under this initiative which saves 25.8 crore every day in cost and a reduction of 52,728 ton of CO₂

Question 2 :

The capital of Jharkhand is

Difficulty : Moderate

Average Time : 65 Seconds

Options :

1. Hattia
2. Patna
3. Ranchi
4. Jamshedpur

Solution :

The correct answer is **option 3** i.e. **Ranchi**.

- **The capital of Jharkhand is Ranchi**, a beautiful city located 620 meters above sea level. It is the administrative capital of Jharkhand, the new state of India, carved out of certain regions of Chhota Nagpur plateau with a predominantly tribal population.
- The capital of Bihar is Patna.
- Jamshedpur is a large city set between the Subarnarekha and Kharkai rivers in the East Indian state of Jharkhand. It's known for huge, tree-lined Jubilee Park, where the Tata Steel Zoological Park has resident species including tigers and leopards.

Question 3 :

The substances whose odour changes in acidic or basic media are called



Difficulty : Moderate

Average Time : 60 Seconds

Options :

1. Natural indicators
2. Synthetic indicators
3. Acid-base indicators
4. Olfactory indicators

Solution :

The correct answer is **option 4** i.e. **Olfactory indicators**.

- An **Olfactory indicator** is a substance whose smell varies depending on whether it is mixed with an **acidic or basic solution**. Olfactory indicators can be used in the laboratory to test whether a solution is a base or an acid, a process called olfactory titration. Onion, clove oil and vanilla extract are examples.
- Natural Indicator is a type of indicator that can be found naturally and can determine whether the substance is an acidic substance or a basic substance.
- A **synthetic indicator** is a man-made chemical substance used to determine pH.
- **Acid-base indicators** are chemicals used to determine whether an aqueous solution is acidic, neutral, or alkaline.

Question 4 :

Which of the following statements is/are true/false about the speed of sound in different media at 25°C? A. In oxygen gas, speed of sound is 316 m/s. B. In water (distilled), the speed of sound is 1498 m/s.

Difficulty : Moderate

Average Time : 80 Seconds

Options :

1. Only A is true
2. Neither A nor B are true

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Both A and B are true

4. Only B is true

Solution :

The correct answer is **option 3** i.e. **Both A and B are true.**

Substance	Speed in m/s
Sea Water	1531
Distilled Water	1498
Air	346
Oxygen	316

Question 5 :

Transpiration takes place through the

Difficulty : Moderate

Average Time : 49 Seconds

Options :

1. vascular bundles
2. cortex
3. stomata
4. epidermis

Solution :

The correct answer is **option 3** i.e. **Stomata.**

- In botany, a **stoma** (also stomate; plural **stomata**) is a tiny opening or pore that is used for gas exchange. They are mostly found on the under-surface of plant leaves. Almost all land plants have stomata. Stomata have two main functions. First is gaseous exchange i.e. intake of carbon dioxide and release of oxygen.
- *Transpiration occurs through the stomatal apertures* and can be thought of as a necessary "cost" associated with the opening of the *stomata* to allow the diffusion of carbon dioxide gas from the air for photosynthesis.
- The **epidermis** is the outermost of the three layers that make up the skin, the inner layers being the dermis and hypodermis.
- In anatomy and zoology, the **cortex** (plural cortices) is the outermost (or superficial) layer of an organ.
- A **vascular bundle** is a part of the transport system in vascular plants. The transport itself happens in vascular tissue, which exists in two forms: xylem and phloem.

Question 6 :

Name the shuttler who represents the Olympic committee in the Badminton World Federation.

Difficulty : Moderate

Average Time : 88 Seconds

Options :

1. Saina Nehwal
2. K Srikanth
3. P Gopichand
4. B Sai Praneeth

Solution :

The correct answer is **option 1** i.e. **Saina Nehwal**.



- Saina Nehwal is an Indian professional badminton singles player. A former world no. 1, she has won over 24 international titles, which includes eleven Superseries titles.
- **Saina Nehwal represented Olympic Committee in Badminton World Federation in 2017.**
- Krishnamachari Srikkanth also known as Kris Srikkanth is a former captain of the Indian cricket team and former chairman of the selection committee.
- Pullela Gopichand is a former Indian badminton player. Presently, he is the Chief National Coach for the Indian Badminton team.
- Bhamidipati Sai Praneeth is an Indian badminton player. He became the first Indian male shuttler in 36 years to win a bronze medal in the BWF World Championships in 2019 after Prakash Padukone in 1983.

Question 7 :

Which of the following states that "properties of elements are a periodic function of their atomic number"?

Difficulty : Moderate**Average Time : 72 Seconds****Options :**

1. Dobereiner's triads
2. Modern periodic law
3. Newlands's law of octaves
4. Mendeleev's periodic law

Solution :

The correct answer is **option 2** i.e. **Modern periodic law**.

- **The modern periodic law states that the physical and chemical properties of the elements are the periodic functions of their atomic numbers.**
Scientists arranged elements in increasing order of their atomic numbers from left to right across each row.
- **Dobereiner's triads** were groups of elements with similar properties that were identified by the German chemist Johann Wolfgang Dobereiner. He observed that groups of three elements (triads) could be formed in which all the elements shared similar physical and chemical properties.
- **Newland's Law of Octaves** states that every eighth element has similar properties when the elements are arranged in the increasing order of their atomic masses.
- The law that the properties of the elements are periodic functions of their atomic numbers also called **Mendeleev's law** (originally) the statement that the chemical and physical properties of the elements recur periodically when the elements are arranged in the order of their atomic weights.

Question 8 :

The relation between the potential difference (V) and current (I) was discovered by:

Difficulty : Moderate

Average Time : 86 Seconds

Options :

1. Pascal
2. Tesla
3. Newton
4. Ohm

Solution :

The correct answer is **option 4** i.e. **Ohm**.

- **Ohm's law**, given by Georg Ohm, states that the current through a conductor between two points is directly proportional to the voltage across the two points, introducing the constant of the proportionality constant, the resistance.
- According to ohm's law $V=IR$

Question 9 :

A car, while moving, is facing a wind from the opposite direction. The work done by the wind on the car will be

Difficulty : Moderate

Average Time : 56 Seconds

Options :

1. Infinity
2. Positive
3. Zero
4. Negative

Solution :

The correct answer is **option 4** i.e. **Negative**.

- Work done by a force acting on an object is equal to the magnitude of the force multiplied by the distance moved in the direction of the force.
- **Work done is negative when the force acts opposite to the direction of displacement.** Work done is positive when the force is in the direction of displacement.

Question 10 :

The SI unit of power is

Difficulty : Moderate

Average Time : 50 Seconds

Options :

- Erg
2. Kilowatt
3. Joule
4. Watt

Solution :

The correct answer is **option 4** i.e. **Watt**.

- The dimension of power is energy divided by time. **In the International System of Units (SI), the unit of power is the watt (W)**, which is equal to one joule per second.
- The erg is a unit of energy equal to 10^{-7} joules. It originated in the centimeter–gram–second system of units.
- The joule is a derived unit of energy in the International System of Units.

Question 11 :

There are 10 protons and 17 neutrons in the nucleus of an element. What is its mass number?

Difficulty : Moderate

Average Time : 59 Seconds

Options :

1. 27
2. 7
3. 17
4. 10

Solution :

The correct answer is **option 1** i.e. **27**.



- The mass number, also called atomic mass number or nucleon number, is the total number of protons and neutrons in an atomic nucleus. It is approximately equal to the atomic mass of the atom expressed in atomic mass units.
- 10 protons and 17 neutrons equals 27.

Question 12 :

The British made English the medium of instruction in India in

Difficulty : Moderate

Average Time : 47 Seconds

Options :

1. 1835
2. 1857
3. 1855
4. 1833

Solution :

The correct answer is **option 1** i.e. **1835**.

The English Education Act was a legislative Act of the Council of India in 1835 giving effect to a decision in 1835 by William Bentinck, the Governor-General of British India to reallocate funds the East India Company was required by the British Parliament to spend on education and literature in India

Question 13 :

Which of the following statements is/are true/false? A. An acid that is completely ionized into ions and produces a large number of H⁺ ions. For example HCl, H₂SO₄, HNO₃ B. An acid that is partially ionized in water and produces less number of H⁺ ions. For example. CH₃COOH, H₂CO₃, H₂S0₃

Difficulty : Moderate

Average Time : 63 Seconds

Options :

Both A and B are true

2. Only B is true
3. Both A and B are false
4. Only A is true

Solution :

The correct answer is **option 1** i.e. **Both A and B are true.**

Acids are classified as either strong or weak, based on their ionization in water.

1. A **strong acid** is an acid that is completely ionized in an aqueous solution. Hydrogen chloride (HCl) ionizes completely into hydrogen ions and chloride ions in water. For example HCl, H₂SO₄, HNO₃
2. A **weak acid** is an acid that ionizes only slightly in an aqueous solution. Acetic acid (found in vinegar) is a very common weak acid. For example. CH₃COOH, H₂CO₃, H₂S03

Question 14 :

Who received the prestigious Florence Nightingale Award from the former President Pranab Mukherjee in 2017?

Difficulty : Moderate

Average Time : 67 Seconds

Options :

1. Krishna Kumari
2. Jaya Lakshmi
3. Devi Kumari
4. Kavitha

Solution :

The correct answer is **option 1** i.e. **Krishna Kumari.**



- **Krishna Kumari, a health worker from Ganjam district, has bagged the prestigious Florence Nightingale Award 2017 on the occasion of International Nurses Day.**
- She has been working in the community health center (CHC), K . Kukudakhandi, in the district.
- She was awarded for her 18-year service in the field of immunization, female welfare programmes, management of labour room and operation theatre.

Question 15 :

The SI unit of pressure is.....

Difficulty : Moderate

Average Time : 53 Seconds

Options :

1. Newton
2. Ohm
3. Pascal
4. Dyne

Solution :

The correct answer is **option 3** i.e. **Pascal**.

<u>QUANTITY</u>	<u>SI UNITS</u>
Force	Newton
Electric resistance	Ohm
Pressure	Pascal
	<u>CGS unit</u>
Force	Dyne

Question 16 :



..... was the founder of the Lodi Dynasty.

Difficulty : Moderate

Average Time : 50 Seconds

Options :

1. Sultan Ibrahim
2. Ala-ud-din Lodi
3. Ibrahim Lodi
4. Bahlul Lodi

Solution :

The correct answer is **option 4** i.e. **Bahlul Lodi**.

- **The Lodi dynasty** was an Afghan dynasty that ruled the Delhi Sultanate from 1451 to 1526.
- It was the last dynasty of the Delhi Sultanate and was founded by **Bahlul Khan Lodi** when he replaced the Sayyid dynasty.

Question 17 :

The Indian Women's hockey team won the Asia Cup 2017 by defeating which country?

Difficulty : Moderate

Average Time : 52 Seconds

Options :

1. Germany
2. South Korea
3. China
4. Japan

Solution :

The correct answer is **option 3** i.e. **China**.



- **Indian women's hockey team won the 2017 Asia Cup hockey title.**
- In the final match held at Kakamigahara in Japan, **India defeated China** by 5-4 goals in the penalty shootout.
- With this victory, India qualified for 2018 World Cup and women's hockey team win closely follows the victory of men's side in October 2017

Question 18 :

Who won the Best Actress Award at the 64th National Film Awards in 2017?

Difficulty : Moderate

Average Time : 56 Seconds

Options :

1. Sonam Kapoor
2. Taapsee Pannu
3. Anushka Sharma
4. Surabhi Lakshmi

Solution :

The correct answer is **option 4** i.e. **Surabhi Lakshmi**.

- Surabhi C. M., also known as Surabhi Lakshmi is an Indian film, television, and stage actress who appears in Malayalam films and television.
- She won the Best Actress at the 64th National Film Awards 2017 for portraying the role of a struggling middle-aged mother in the Malayalam film Minnaminungu.

Question 19 :

India's first World Heritage City Status was accorded to which of the following city by UNESCO?

Difficulty : Moderate

Average Time : 52 Seconds

Options :

1. Hyderabad
2. Hampi
3. Jaipur
4. Ahmedabad

Solution :

The correct answer is **option 4** i.e. **Ahmedabad**.

- The commercial capital of Gujarat, Ahmedabad, has been formally accorded the status of India's first World Heritage City by UNESCO.
- UNESCO Director-General Irina Bokova handed over the certificate declaring Ahmedabad as a 'World Heritage City' to Gujarat Chief Minister Vijay Rupani in 2017.

Question 20 :

Which of the following pairs do not have the same SI unit?

Difficulty : Moderate

Average Time : 49 Seconds

Options :

1. Displacement and distance
2. Force and pressure
3. Work and energy
4. Speed and velocity

Solution :

The correct answer is **option 2** i.e. **Force and pressure**.

<u>QUANTITIES</u>	<u>SI UNITS</u>
Force	Newton
Pressure	Pascal

Displacement and distance	m
Work and energy	Joule
Speed and velocity	ms ⁻¹

Question 21 :

The atomic mass of aluminum is 27. The number of moles present in 81 grams of aluminum is

Difficulty : Moderate**Average Time : 55 Seconds****Options :**

1. 4

2. 5

3. 2

4. 3

Solution :

The correct answer is **option 4** i.e. **3**

$$\begin{aligned}\text{no. of moles}(m) &= \frac{\text{sample weight}(g)}{\text{atomic weight}(u)} \\ &= \frac{81}{27} \\ &= 3\end{aligned}$$

Question 22 :

What is the SI unit of speed?

Difficulty : Moderate**Average Time : 39 Seconds****Options :**

1. m/s

2. km/h

m/minute

4. km/s

Solution :

The correct answer is **option 1** i.e. **m/s**

- The speed of an object is the magnitude of the change of its position.
- SI Unit: m/s, m s⁻¹

Question 23 :

An object moving with a uniform velocity of 4ms⁻¹ possesses kinetic energy of 120 J. Find the mass of the object.

Difficulty : Moderate

Average Time : 47 Seconds

Options :

1. 15 N
2. 15 W
3. 15 kg
4. 15 Pa

Solution :

The correct answer is **option 3** i.e. **15 kg**.

<u>CONCEPT</u>	<u>UNDERSTANDING</u>	<u>APPLICATION</u>
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<p>The kinetic energy of an object is the energy that it possesses due to its motion.</p> <p>Following is the formula of kinetic energy:</p>		
$KE = \frac{1}{2}mv^2$	To find: Mass	$KE = \frac{1}{2}mv^2$
Where,	Given:	$m = \frac{KE \times 2}{v^2}$
<ul style="list-style-type: none">• KE is the kinetic energy of the object• m is the mass of an object• v is the velocity of an	<ul style="list-style-type: none">• KE = 120 J• v = 4 ms⁻¹	$= \frac{120 \times 2}{4^2}$
		$= \frac{240}{16}$
		$= 15 \text{ kg}$

Question 24 :

Which of the following is not a noble gas?

Difficulty : Moderate

Average Time : 73 Seconds

Options :

1. oganesson
2. Argon
3. Xenon
4. Chlorine

Solution :

The correct answer is **option 4** i.e. **Chlorine**.

- The noble gases make up a group of chemical elements with similar properties; under standard conditions, they are all odorless, colorless, monatomic gases with very low chemical reactivity.
- The six naturally occurring noble gases are helium, neon, argon, krypton, xenon, and radioactive radon.
- Oganesson is a radioactive, artificially produced element about which little is known. It is expected to be a gas and is classified as a non-metal. It is a member of the noble gas group.

Question 25 :

Who was conferred with the Best Director Award in the 64th National Film Awards?

Difficulty : Moderate

Average Time : 58 Seconds

Options :

1. Rajesh Mapuskar
2. Srijit Mukherji
3. Anurag Basu
4. Nitesh Tiwari

Solution :

The correct answer is **option 1** i.e. **Rajesh Mapuskar**.

- Rajesh Mapuskar won the Best Director Award in the 64th National Film Awards for the Marathi film Ventilator.
- Rajesh Mapuskar is an Indian film writer, director, and producer. He got involved in the world of films at a very young age, as his family owned a cinema hall. He made his writing and directional debut with Ferrari Ki Sawaari.

Question 26 :

When light travels from a denser medium to a rarer medium, what is the effect on its speed?



Difficulty : Moderate

Average Time : 55 Seconds

Options :

1. Increases
2. No change
3. Decreases
4. Decreases and then increases

Solution :

The correct answer is **option 1** i.e. **Increases**.

- When a ray of light goes from a rarer medium to a denser medium, its speed decreases or it slows down.
- On the other hand, **when a ray of light goes from a denser medium to a rarer medium, its speed increases or it speeds up.**
- So, we can say that a ray of light traveling from a rarer medium to a denser medium slows down and bends towards the normal but when a ray of light travels from a denser medium to a rarer medium, speeds up and bends away from the normal

Question 27 :

..... is the state flower of Jharkhand.

Difficulty : Moderate

Average Time : 62 Seconds

Options :

1. Lotus
2. Rohira
3. Orchid
4. Palash

Solution :

The correct answer is **option 4** i.e. **Palash**.



- **Butea monosperma or Palash** is a species of Butea native to tropical and sub-tropical parts of the Indian and Southeast Asia, ranging across India, Bangladesh, Nepal, Sri Lanka, Myanmar, Thailand, Laos, Cambodia, Vietnam, Malaysia, and western Indonesia.
- **Palash is the State Flower of Jharkhand.** It is said that the tree is a form of Agni, the God of fire and war.

Question 28 :

In which of the following phenomena can many plants be grown from one parent in disease-free conditions?

Difficulty : Moderate

Average Time : 57 Seconds

Options :

1. Sexual reproduction
2. Tissue culture
3. Spore formation
4. Regeneration

Solution :

The correct answer is **option 2** i.e. **Tissue culture**.



- **Sexual reproduction in flowering plants** involves the production of male and female gametes, the transfer of the male gametes to the female ovules in a process called pollination. After pollination occurs, fertilization happens and the ovules grow into seeds within a fruit
- In biology, **regeneration** is the process of renewal, restoration, and growth that makes genomes, cells, organisms, and ecosystems resilient to natural fluctuations or events that cause disturbance or damage. Every species is capable of regeneration, from bacteria to humans.
- **Spore formation** is a method in asexual reproduction, it generally happens in non-flowering plants such as fungi and bacteria. In this, the parent plant generates thousands of spores that individually grow in a plant. these spores are microscopic and round in shape and grow in a suitable condition.
- **Tissue culture** is the growth of tissues or cells in an artificial medium separate from the organism. This is typically facilitated via the use of a liquid, semi-solid, or solid growth media, such as broth or agar. In this many plants be grown from one parent in disease-free conditions.

Question 29 :

Which mobile application has N. Chandrababu Naidu, the Andhra Pradesh Chief Minister, launched at the Collectors' Conference in Vijayawada?

Difficulty : Moderate

Average Time : 92 Seconds

Options :

1. 'People First' mobile application
2. 'People Safe' mobile application
3. 'People Friend' mobile application
4. 'People Help' mobile application

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Solution :

The correct answer is **option 1** i.e. **'People First'** mobile application.

- **Andhra Pradesh Chief Minister N. Chandrababu Naidu released 'People First' mobile application for grievance redressal at the Collectors' conference in Vijayawada.**
- Charring a Collectors' Conference, Chandrababu Naidu said that under this application, people of Andhra Pradesh can dial 1100 to register complaints about government services and schemes.
- Naidu said that the citizens of Andhra Pradesh can now ride the wave of technology and use the medium of mobile to register their complaints.

Question 30 :

The system transports fluids from one place to another.

Difficulty : Moderate

Average Time : 61 Seconds

Options :

1. respiratory
2. vascular
3. nervous
4. excretory

Solution :

The correct answer is **option 2** i.e. **vascular**.



- The **vascular system**, also called the **circulatory system**, is made up of the vessels that carry blood and lymph through the body. The arteries and veins carry blood throughout the body, delivering oxygen and nutrients to the body tissues and taking away tissue waste matter
- The **respiratory system** is a biological system consisting of specific organs and structures used for gas exchange in animals and plants.
- The **nervous system** is a highly complex part of an animal that coordinates its actions and sensory information by transmitting signals to and from different parts of its body.
- The **excretory system** is a passive biological system that removes excess, unnecessary materials from the body fluids of an organism, so as to help maintain internal chemical homeostasis and prevent damage to the body.

Question 31 :

Which of the following tissues is composed of mainly dead cells?

Difficulty : Moderate

Average Time : 78 Seconds

Options :

1. Parenchyma
2. Collenchyma
3. Aerenchyma
4. Xylem

Solution :

The correct answer is **option 4** i.e. **Xylem**.

- The basic function of xylem is to transport water from roots to stems and leaves, but it also transports nutrients.
- **There are two types of cells that make up the xylem: tracheids and vessel elements. Both of these cell types are dead when they are used in the xylem.** Using dead cells, which don't have organelles filling them up, allows more capacity for transporting water.
- **Aerenchyma** is a spongy tissue that forms spaces or air channels in the leaves, stems, and roots of some plants, which allows the exchange of gases between the shoot and the root.
- **Parenchyma** is the cellular tissue, typically soft and succulent, found chiefly in the softer parts of leaves, the pulp of fruits, bark, and pith of stems, etc
- **Collenchyma tissue** is composed of elongated cells with irregularly thickened walls. They provide structural support, particularly in growing shoots and leaves.

Question 32 :

Who is the Chief Minister of Uttarakhand who was elected in 2017?

Difficulty : Moderate

Average Time : 82 Seconds

Options :

1. Satpal Maharaj
2. Harak Singh Rawat
3. Trivendra Singh Rawat
4. Prakash Pant

Solution :

The correct answer is **option 3** i.e. **Trivendra Singh Rawat**.



- **Trivendra Singh Rawat is an Indian politician and is the eighth and current Chief Minister of Uttarakhand**. Rawat was a member of the Rashtriya Swayamsevak Sangh from 1979 to 2002 and held the post of organising secretary of the Uttarakhand region, and later the Uttarakhand state, after the state's formation in 2000.
- **Satpal Maharaj**, also known as Shri Satpal Ji Maharaj, is a spiritual master and an Indian politician, serving as the current tourism, cultural and irrigation minister in the cabinet of Government of Uttarakhand.
- **Harak Singh Rawat** is a member of the Legislative assembly of the Uttarakhand Legislative Assembly in India.
- **Prakash Pant** was a Bharatiya Janata Party leader and member of the Uttarakhand Legislative Assembly in India.

Question 33 :

Aluminium metal is extracted only by:

Difficulty : Moderate

Average Time : 71 Seconds

Options :

1. **Electrolysis**
2. Calcination
3. Reduction
4. Oxidation

Solution :

The correct answer is **option 1** i.e. **Electrolysis**.

- **Electrolysis** is a technique that uses a direct electric current to drive an otherwise non-spontaneous chemical reaction.
- **Aluminium ore is called bauxite.** The bauxite is purified to produce aluminium oxide, a white powder form which aluminium can be extracted. **The extraction is done by electrolysis.** The ions in the aluminium oxide must be free to move so that electricity can pass through it.
- The IUPAC defines **calcination** as "heating to high temperatures in air or oxygen".
- **Redox** is a type of chemical reaction in which the oxidation states of atoms are changed.

Question 34 :

Halogens contain.....

Difficulty : Moderate**Average Time : 64 Seconds****Options :**

1. 2 gases,two liquids and 1 solid
2. 2 gases and 3 solids
3. 2 gases,one liquid and 2 solids
4. 3 gases and 3 solids

Solution :The correct answer is **option 3** i.e. **2 gases, one liquid, and 2 solids.**



The halogens are five non-metallic elements found in group 17 of the periodic table. The term "halogen" means "salt-former" and compounds containing halogens are called "salts". All halogens have 7 electrons in their outer shells, giving them an oxidation number of -1. The halogens exist, at room temperature, in all three states of matter:

- **Solid-** Iodine, Astatine
- **Liquid-** Bromine
- **Gas-** Fluorine, Chlorine

Question 35 :

A solution contains 32 g of common salt in 320 g of water. Calculate the concentration in terms of mass by the mass percentage of the solution.

Difficulty : Moderate**Average Time : 65 Seconds****Options :**

1. 9.09 %
2. 13.05 %
3. 9.09 g
4. 8.84%

Solution :

The correct answer is **option 1** i.e. **9.09 %**



Mass of solute - NaCl = 32gm
Mass of solvent - water = 320gm
Mass of solution = (32+320) gm
= 352gm

Concentration in terms of Mass by mass percentage

$$\begin{aligned} &= \frac{\text{mass of solute}}{\text{mass of solution}} \times 100 \\ &= \frac{32}{352} \times 100 \\ &= 9.09\% \end{aligned}$$

Question 36 :

In a diamond, each carbon atom is bonded to:

Difficulty : Moderate

Average Time : 50 Seconds

Options :

1. two other carbon atoms
2. three other carbon atoms
3. four other carbon atoms
4. five other carbon atoms

Solution :

The correct answer is **option 3** i.e. **four other carbon atoms**.

In **diamond**, each carbon atom is bonded to four other carbon atoms tetrahedrally.

Or

In diamond 4 carbon-carbon covalent bonds are present. Each carbon shares electron with four other carbon atoms forming four single bonds.

Question 37 :



India's first bullet train is proposed to run between

Difficulty : Moderate

Average Time : 52 Seconds

Options :

1. Surat and Mumbai
2. Ahmedabad and Mumbai
3. Vadodara and Mumbai
4. Vapi and Mumbai

Solution :

The correct answer is **option 2** i.e. **Ahmedabad and Mumbai**.

- The **bullet train** will run at a speed of 320 kmph and is expected to cover the **Mumbai-Ahmedabad** distance in three hours.
- The route will have 12 stations including Mumbai, Thane, Virar, Boisar, Vapi, Bilimora, Surat, Bharuch, Vadodara, Anand, Ahmedabad, and Sabarmati.

Question 38 :

Amoeba, Paramecium, and Bacteria undergo:

Difficulty : Moderate

Average Time : 53 Seconds

Options :

1. sexual reproduction
2. budding
3. binary fission
4. multiple fission

Solution :

The correct answer is **option 3** i.e. **binary fission**.



- Fission, in biology, is the division of a single entity into two or more parts and the regeneration of those parts to separate entities resembling the original.
- The object experiencing fission is usually a cell, but the term may also refer to how organisms, bodies, populations, or species split into discrete parts.
- For simple organisms like bacteria, cell division (for propagation) is dependent on a form of asexual reproduction known as binary fission.
- Some eukaryotes like paramecium and amoebae can use binary fission as a means of propagation.

Question 39 :

The Asia-Africa-Europe (AAE-1) submarine cable system, the world's longest 100-Gbps submarine cable system was launched by

Difficulty : Moderate**Average Time : 63 Seconds****Options :**

1. Bharti Airtel
2. Reliance Jio
3. Idea Cellular
4. Vodafone

Solution :

The correct answer is **option 2** i.e. **Reliance Jio**.

Reliance Jio Infocomm has launched the Asia-Africa-Europe (AAE-1) submarine cable system, which is the longest 100Gbps technology-based submarine system.

It will stretch over 25,000 km from Marseille, France to Hong Kong, with 21 cable landings across Asia and Europe.

Question 40 :



In January 2018, who was appointed as the official brand ambassador of Sikkim?

Difficulty : Moderate

Average Time : 51 Seconds

Options :

1. A. R. Rahman
2. Sania Mirza
3. Bhaichung Bhutia
4. Mary Kom

Solution :

The correct answer is **option 1** i.e. **A. R. Rahman**.

- **Music maestro AR Rahman was named the official brand ambassador of Sikkim.**
- A.R.Rahman was invited to Sikkim Red Panda Winter Carnival 2018 by Chief Minister Pawan Kumar.
- Sikkim Red Panda Winter Carnival 2018 was organized by the state tourism and civil aviation department and it lasts for 10 days where renowned singers and bands from different parts of the country performed and entertain the visitors

Question 41 :

Which country had hosted the FIFA under 19 world cup in the year 2017?

Difficulty : Moderate

Average Time : 57 Seconds

Options :

1. India
2. England
3. Australia
4. Pakistan

Solution :

The correct answer is **option 1** i.e. **India**.

The 2017 FIFA U-17 World Cup was the 17th FIFA U-17 World Cup, a biennial international football tournament contested by men's under-17 national teams.

Tournament details	
Host country	India
Dates	6–28 October
Teams	24 (from 6 confederations)

Question 42 :

Which Indian city was included in the UNESCO Creative Cities Network in 2017 for its rich musical tradition?

Difficulty : Moderate

Average Time : 54 Seconds

Options :

1. Bengaluru
2. Chennai
3. New Delhi
4. Lucknow

Solution :

The correct answer is **option 2** i.e. **Chennai**.

- **Chennai** was on 31 October 2017 included in the Creative Cities Network list of United Nations Educational, Scientific and Cultural Organisation (UNESCO) for its rich musical tradition.
- With this, Chennai became the third Indian city on the list of UNESCO Creative Cities list after Jaipur and Varanasi.

Question 43 :

Who won the 2017 Discovery Education 3M Young Scientist Challenge for inventing a quick, low-cost test to detect lead-



contaminated water?

Difficulty : Moderate

Average Time : 52 Seconds

Options :

1. Koushik Chakraborty
2. Divya Sharma
3. Gitanjali Rao
4. Shiv Prakash Singh

Solution :

The correct answer is **option 3** i.e. **Gitanjali Rao**.

- **Indian-American Gitanjali Rao won the 2017 Discovery Education 3M Young Scientist Challenge for inventing a quick, low-cost test to detect lead-contaminated water.**
- She was selected from 10 finalists who had spent three months collaborating with scientists to develop their ideas.

Question 44 :

Which one of the following is the equation for Position - Time relation?

Difficulty : Moderate

Average Time : 53 Seconds

Options :

1. $S = ut + \frac{1}{2}at^2$
2. $V = U + at$
3. $U = V + at$
4. $2as = v^2 - u^2$

Solution :

The correct answer is **option 1** i.e. $S = ut + \frac{1}{2}at^2$



- In the case of uniform acceleration, there are three equations of motion which are also known as the laws of constant acceleration.
- Hence, these equations are used to derive the components like displacement(s), velocity (initial and final), time(t), and acceleration(a). Therefore they can only be applied when acceleration is constant and motion is a straight line.

- The three equations are,

1. $v = u + at$

2. $v^2 = u^2 + 2as$

3. $s = ut + \frac{1}{2}at^2$

- **$S = ut + \frac{1}{2}at^2$ is the second equation of motion. It is also called the position-time relation.**

Question 45 :

The potential difference between the terminals of an electric heater is 60 V when it draws a current of 4 A from the 3 sources. What current will the heater draw if the potential difference is increased to 172.5 V?

Difficulty : Moderate**Average Time : 79 Seconds****Options :**

1. 10 A
2. 24 A
3. 8.5 A
4. 11.5 A

Solution :

The correct answer is **option 1** i.e. **11.5 A**



Given :

Potential Difference in heater = 60v

current $I=4A$

Resistance = ?

By Ohm's law :

$$V=IR$$

$$R=V/I$$

$$=60/4=15 \text{ ohms}$$

Now if the potential is increased to 172.5 V

$I= ?$

$$V=IR$$

$$I=V/R$$

$$=172.5/15$$

$$=11.5 \text{ A}$$

Hence current drawn by the electric heater is 11.5 A

Question 46 :

5% population of a town died of some epidemic and 8% of the remaining population left in panic. The population of the town now is 88274. find the population of the town at the beginning.

Difficulty : Moderate

Average Time : 58 Seconds

Options :

1. 99,800
2. 1,21,1600
3. 1,01,000
4. 84,500

Solution :

The correct answer is **option 3** i.e. **1,01,000**

Understanding

Let,

The total population of the town = 100

$$5\% \text{ Died} = 100 - (100/100)5 = 100 - 5 = 95$$

Now,

$$8\% \text{ left due to panic} = 95 - (95/100)8 = 95 - 7.6 = 87.4$$

Application

Here,

$$87.4\% = 88274 \text{ (A/q)}$$

$$100\% = (88274/87.4)100 = 1010 \times 100 = 101000$$

Question 47 :

Which of the following has the highest value?

Difficulty : Moderate

Average Time : 46 Seconds

Options :

1. 10^{11}
2. 12^9
3. 5^5
4. 11^{10}

Solution :

The correct answer is option 1 i.e. 10^{11}

Understanding

- (i) $10^{11} = 1000^9$
(ii) $12^9 = 12^9$
(iii) 5^5
(iv) $11^{10} = 121^9$
 $1000^9 = 10^{11}$ is highest number.

Question 48 :

The following pie chart shows information on sales of a toy making company "XYZ" for 2017-18 financial year. The total revenue made by sales of the toys is ₹ 38,72,000/- Which type of toys made least revenue for the company?

Difficulty : Moderate**Average Time : 55 Seconds****Options :**

1. Musical toys
2. Activity toys
3. Learning blocks
4. Soft toys

Solution :

The correct answer is option 2 i.e. Activity toys.

Understanding

For least revenue toys

See the pie chart and go with smaller arc.

which is 5, Activity toys.

Question 49 :

Divide 1,380 among A, B and C, so that A gets 5 times of C and 3 times of B.



Difficulty : Moderate

Average Time : 46 Seconds

Options :

1. A = 980; B = 300; C = 100
2. A = 880; B = 200; C = 300
3. A = 900; B = 300; C = 180
4. A = 800; B = 300; C = 280

Solution :

The correct answer is **option 3** i.e. **A = 900; B = 300; C = 180**

Understanding

Let,

$$A = x$$

$$C = x/5$$

$$B = x/3$$

A/q,

$$A + B + C = 1380$$

Application

Put the value

$$x + x/5 + x/3 = 1380$$

$$(15x + 3x + 5x) = 1380 \times 15$$

$$23x = 20700$$

$$x = 20700/23 = 900$$

$$\text{So, } A = x = 900$$

$$B = x/3 = 900/3 = 300$$

$$C = x/5 = 900/5 = 180$$

Question 50 :



€1156 was divided between two people in the ratio 13 : 21. The one who got the larger share received €

Difficulty : Moderate

Average Time : 58 Seconds

Options :

1. 782
2. 714
3. 680
4. 748

Solution :

The correct answer is **option 2** i.e. **714**

Understanding

Given,

Total amount = 1156

A : B = 13 : 21

So,

Share of A = 13x

and Share of B = 21x

Application

Now,

$$13x + 21x = 1156$$

$$34x = 1156$$

$$x = 1156/34 = 34$$

$$\text{Share of A} = 34 \times 13 = 442$$

$$\text{Share of B} = 34 \times 21 = 714$$

Hence, largest share is 714

Question 51 :

If $x = a(\sin \theta + \cos \theta)$ and $y = b(\sin \theta - \cos \theta)$ then $(x^2/a^2) + (y^2/b^2) = ?$

Difficulty : Moderate**Average Time : 57 Seconds****Options :**

1. 3

2. 1

3. 4

4. 2

Solution :

The correct answer is option 4 i.e. 2

Understanding

$$x = a(\sin \theta + \cos \theta)$$

squaring both sides

$$x^2/a^2 = 1 + 2\sin \theta \cos \theta \quad \dots(i)$$

Now,

$$y = b(\sin \theta - \cos \theta)$$

squaring both sides

$$y^2/b^2 = 1 - 2\sin \theta \cos \theta \quad \dots(ii)$$

Add equation (i) and (ii), we get

$$(x^2/a^2) + (y^2/b^2) = 2$$

Question 52 :

20 men can finish a certain work in 10 days, where as it takes 12 women to finish it in 10 days. If 15 men and 6 women undertake to complete the work, how many days will they take to complete it?

Difficulty : Moderate**Average Time : 63 Seconds****Options :**

1. 8 days

10 days

3. 6 days

4. 4 days

Solution :

The correct answer is **option 1** i.e. **8 Days**

Understanding

$$20M \times 10D \times x = 12W \times 10D \times y$$

$$x/y = 120/200 = 3/5$$

So,

$$\text{Efficiency of man} = 3$$

$$\text{Efficiency of woman} = 5$$

$$\text{Total work} = 20 \times 10 \times 3 = 600$$

Application

Now,

$$15 M \times 3 = 45 \text{ unit per day}$$

$$6 W \times 5 = 30 \text{ units per day}$$

$$\text{No. of required days} = 600 / (45 + 30)$$

$$= 600 / 75 = 8 \text{ days}$$

Question 53 :

Which of the fractions given below is not equal to $5/9$?

Difficulty : Moderate

Average Time : 55 Seconds

Options :

1. $105/198$

2. $80/144$

3. $40/72$

25/45

Solution :

The correct answer is option 1 i.e. 105/198

Understanding

(i) $105/198 = 35/66$

(ii) $80/144 = 10/18 = 5/9$

(iii) $40/72 = 10/18 = 5/9$

(iv) $25/45 = 5/9$

Here, Only 105/198 is not equaled to 5/9.

Question 54 :

A person walks 2/5th of the total distance and covers one-third of the remaining distance by bus. What is the fraction of the remaining distance to be covered?

Difficulty : Moderate

Average Time : 43 Seconds

Options :

1. 3/5
2. 2/5
3. 7/15
4. 1/5

Solution :

The correct answer is option 2 i.e. 2/5

Understanding

Let,

Total distance = 1

Covered by Waking = 2/5

Remaining distance = $1 - 2/5 = 3/5$



Application

Now,

Covered by Bus = $\frac{1}{3}$ of remaining

$$= \frac{3}{5} \times \frac{1}{3}$$

$$= \frac{1}{5}$$

Remaining distance to cover = $\frac{3}{5} - \frac{1}{5}$

$$= \frac{2}{5}\text{th part}$$

Question 55 :

In a class there were 18 boys and some girls. In a test the mean score obtained by the boys was 12 while that obtained by the girls was 14. If the overall average was 13.1, what was the total number of students in the class?

Difficulty : Moderate**Average Time : 55 Seconds****Options :**

1. 38

2. 44

3. 42

4. 40

Solution :

The correct answer is option 4 i.e. 40

Understanding

Given,

No. of boys = 18

No. of girl = x (let)

Mean of score of boys = 12

Mean of score of girl = 14

Boys and girls together mean = 13.1



Application

$$18 \times 12 + x \times 14 = 13.1 \times (18 + x)$$

$$216 + 14x = 235.8 + 13.1x$$

$$2160 + 140x = 2358 + 131x$$

$$9x = 198$$

$$x = 198/9 = 22$$

So, no. of girls = 22

$$\text{Total number of students} = 18 + 22 = 40$$

Question 56 :

In triangle ABC ADBC and AO is the bisector of BAC. If $\angle ABC = 65^\circ$ and $\angle ACB = 23.5^\circ$, then $\angle DAO$ is(in degrees).

Difficulty : Moderate**Average Time : 60 Seconds****Options :**

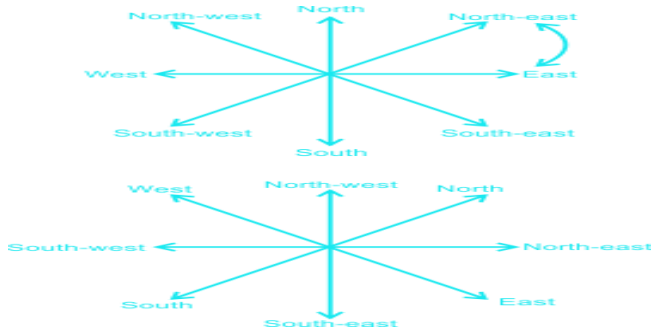
1. 28.75°
2. 16.25°
3. 25°
4. 20.75°

Solution :

The correct answer is **option 4** i.e. **20.75°**

Understanding/Application

Figure:



Given,

$$ABC = 65^\circ$$

$$ACB = 23.5^\circ$$

$$\text{So, } BAC = 180^\circ - (65^\circ + 23.5^\circ) = 91.5^\circ$$

$$ADB = ADC = 90^\circ$$

$$A/q - BAO = CAO = BAC/2 = 91.5^\circ/2 = 45.75^\circ \text{ (AO is a bisector of angle A)}$$

Now,

$$ADC + ADB = 90^\circ$$

$$DAC = 90^\circ - 23.5^\circ = 66.5^\circ$$

In triangle AOD

$$OAD = DAC - OAC = 66.5^\circ - 45.75^\circ = 20.75^\circ$$

Question 57 :

Let α, β be the roots of $ax^2 + bx + c = 0$, γ, δ be the roots of $px^2 + qx + r = 0$ & D_1, D_2 the respective discriminants of these equations. If $\alpha, \gamma, \beta, \delta$ are in A.P. Then find the value of $D_1 : D_2$.

Difficulty : Moderate

Average Time : 79 Seconds

Options :

1. a^2/p^2

2. a^2/b^2



$$b^2/q^2$$

4. c^2/r^2

Solution :

The correct answer is option 1 i.e. a^2/p^2

Understanding

$$+ = -(b/a)$$

$$= c/a$$

$$+ = -(q/p)$$

$$= r/p$$

$$D_1 = b^2 - 4ac$$

$$D_2 = q^2 - 4pr$$

Now,

$$= -b + [(b^2 - 4ac)/2a] \dots\dots(i)$$

$$= -b - [(b^2 - 4ac)/2a] \dots\dots(ii)$$

$$= -q + [(q^2 - 4pr)/2p] \dots\dots(iii)$$

$$= -q - [(q^2 - 4pr)/2p] \dots\dots(iv)$$

Now,

$$(ii) - (i) = (iv) - (iii) \text{ and we get}$$

$$b^2 - 4ac/a^2 = q^2 - 4pr/p^2$$

$$b^2 - 4ac/q^2 - 4pr = a^2/p^2$$

Question 58 :

A fraction when added to $17/3$ gives 4. what is the said fraction?

Difficulty : Moderate

Average Time : 89 Seconds

Options :



-1/1

2. -5/3

3. 9/2

4. 2/3

Solution :

The correct answer is option 2 i.e. -5/3

Understanding

Let,

Fraction = x

A/q-

$$x + 17/3 = 4$$

$$x = 4 - 17/3$$

$$x = (12 - 17)/3 = -5/3$$

**Question 59 :**

Bratin is now 18 years old, whereas his cousin is 7 years old. After how many years will Bratin's age be 1.5 times that of his cousin?

Difficulty : Moderate

Average Time : 46 Seconds

Options :

1. 15

2. 16

3. 13

4. 14

Solution :

The correct answer is option 1 i.e. 15 years

Understanding

Bratin's age = 18

Cousin's age = 7

A/q-

$$18 + x = 1.5 (7 + x)$$

$$18 + x = 10.5 + 1.5x$$

$$180 + 10x = 105 + 15x$$

$$5x = 75$$

$$x = 75/5 = 15 \text{ years}$$

After 15 years Bratin age is 1.5 times of his cousin.

Question 60 :

Persons A, B and C can complete a task together in 81 days. A and B can complete the same task together in 97.2 days. B and C can complete the same task together in 162 days. In how many days can B alone complete the task?

Difficulty : Moderate

Average Time : 53 Seconds

Options :

1. 243
2. 225
3. 261
4. 234

Solution :

The correct answer is option 1 i.e. 243 days

Understanding

$$A + B + C = 81 \text{ days}$$

$$A + B = 97.2 \text{ days}$$

$$B + C = 162 \text{ days}$$

$$\text{Total work} = \text{LCM of } 81, 97.2, 162 \text{ i.e} = 486$$

Now,

$$\text{Efficiency of } (A + B + C) = 486/81 = 6$$

$$\text{Efficiency of } (A + B) = 486/97.2 = 5$$

$$\text{Efficiency of } (B + C) = 486/162 = 3$$

So,

$$\text{Efficiency of } C = \text{Efficiency of } (A + B + C) - \text{Efficiency of } (A + B) = 6 - 5 = 1$$

and

$$\text{Efficiency of } B = \text{Efficiency of } (B + C) - \text{Efficiency of } C = 3 - 1 = 2$$

Application

$$\text{Time taken by } B = \text{T.work/Efffi. of } B = 486/2 = 243 \text{ days}$$

Question 61 :

A person borrowed Rs 32,000 at a yearly 9% simple interest and deposited the same amount in a bank at a yearly compound interest of 10%. What is the gain in rupees at the end of 3 years?

Difficulty : Moderate

Average Time : 70 Seconds

Options :

1. ? 926
2. ? 1,940
3. ? 2,904
4. ? 1,952

Solution :

The correct answer is option4 i.e. 1952

Understanding

$$P = 32000$$

$$\text{ROI on SI} = r = 9\%$$

$$\text{ROI on CI} = R = 10\%$$

$$\text{Time} = n = 3 \text{ years}$$

We have to find CI - SI

Formula:

$$\begin{aligned} P_{CI} - P_{SI} &= P[(1 + R/100)^n - (1 + nr/100)] \\ &= 32000 [(1 + 10/100)^3 - (1 + 27/100)] \\ &= 32000 [(110/100)^3 - (127/100)] \\ &= 32000 [1.331 - 1.27] \\ &= 32000 (.061) \\ &= 1952 \end{aligned}$$

Question 62 :

Find the square root of the perfect square made by multiplying 4050 with a least positive integer.

Difficulty : Moderate

Average Time : 55 Seconds

Options :

1. 80
2. 90
3. 85
4. 95

Solution :

The correct answer is option 2 i.e. 90

Understanding

$$4050 = 2 \times 3^2 \times 3^2 \times 5^2$$

So, the number 4050 must be multiplied by 2 to made it a perfect square

Then,

$$4050 \times 2 = 8100$$

So, square root of 8100 is 90

Question 63 :

Rathin & Bratin together can complete a piece of work in 12 days. They start the work together but Rathin had to leave 5 days before the work got over. As a result it took a total of 15 days to complete the work. How many days would it have taken Bratin to complete the work by himself?

Difficulty : Moderate**Average Time : 56 Seconds****Options :**

1. 20
2. 24
3. 30
4. 28

Solution :

The correct answer is option 3 i.e. 30 days

Understanding



Rathin + Bratin = 12 days.

Rathin left before = 5 days

Total work = LCM of 12, 5, 15 i.e 60

(R + B)'s efficiency = $60/12 = 5$

(R + B) work (15 - 5) = 10 days,

so, Remaining work = $60 - (10 \times 5) = 60 - 50 = 10$

and A/q-

Bratin's efficiency = Remaining work / (15 - 5) = $10/5 = 2$

Bratin complete alone whole work = total work / Bratin's efficiency
= $60/2 = 30$ days

Question 64 :

16 men can finish a work in 8 days. 8 men and 9 women working together can finish the same work in 10 days. In how many days will 20 women finish the same work?

Difficulty : Moderate**Average Time : 57 Seconds****Options :**

1. 13

2. 12

3. 9

4. 11

Solution :

The correct answer is **Option 2** i.e 12.

Understanding/Application

Total work = man/woman \times time

Work is same so,

$$16m(8) = (8m + 9w) 10$$

$$128m = 80m + 90w$$

$$48m = 90w$$

$$8m = 15w$$

Let the work be completed by 20 women be x days.

$$\text{Total work} = 20w(x)$$

$$(8m + 9w)10 = 20w(x)$$

$$(15w + 9w)10 = 20w(x)$$

$$240w = 20w(x)$$

$$x = 12 \text{ days}$$

Question 65 :

If the simple interest on a certain sum for 1.5 years at 8% p.a. is. ? 360. Find the compound interest on the same sum for the same rate of interest but double the time?

Difficulty : Moderate**Average Time : 61 Seconds****Options :**

1. ? 778
2. ? 778.13
3. ? 779
4. ? 779.13

Solution :

The correct answer is option 4 i.e. 3779.13

Understanding

For SI

$$\text{ROI} = 8\%$$

$$\text{Time} = 1.5 \text{ years}$$

$$\text{Intrest amount} = 360$$

So,

$$8 \times 1.5 = 360$$

$$12\% = 360$$

$$100\% = (360/12) 100 = 3000$$

$$P = 3000$$

Now For CI

$$\text{ROI} = 8\%$$

$$\text{Time} = 2 \times 1.5 = 3 \text{ years}$$

$$P = 3000$$

$$\text{Amount} = P + (1 + r/n)^{nt}$$

$$= 3000 + (1 + 8/100)^3$$

$$= 3000 + (27/25)(27/25)(27/25)$$

$$= 3000 (1.25)$$

$$= 3779.13$$

$$\text{Intrest amount} = \text{Amount} - P$$

$$= 3779.13 - 3000$$

$$= 3779.13$$

**Question 66 :**

Sindhu can cover a distance of $62/3$ km in $31/4$ hours on foot. How many km per hour does she walk?

Difficulty : Moderate

Average Time : 57 Seconds

Options :



4 km

2. $\frac{2}{3}$ km

3. $\frac{8}{3}$ km

4. $11\frac{1}{3}$ km

Solution :

The correct answer is **option 3** i.e. **$\frac{8}{3}$ km**

Application

Formula:

Speed = Distance/time

Given.

Time = $31\frac{1}{4}$ hours

Distance = $62\frac{2}{3}$ km

Speed = $(62\frac{2}{3}) / (31\frac{1}{4})$

= $\frac{8}{3}$ km

Question 67 :

The data shows the information on the number of children vaccinated in the year 2016 in different cities: If the total number of children vaccinated in the year 2016 is 1,20,000, then how many kids from city 'B' were vaccinated?

Difficulty : Moderate

Average Time : 49 Seconds

Options :

1. 24,000

2. 48,000

3. 12,000

4. 36,000

Solution :

The correct answer is option 4 i.e. 36000

Understanding



B city = Green = 30%
Total no. of kids = 120000
No. of kids in B city = $(120000/100)30$
= $1200 \times 30 = 36000$

Question 68 :

Diksha obtained 58% marks in an exam where the maximum marks was 450. She obtained marks.

Difficulty : Moderate**Average Time : 39 Seconds****Options :**

1. 290
2. 276
3. 261
4. 275.5

Solution :

The correct answer is option 3 i.e. 261

Understanding

total number of marks = 450

percent = 58%

A/q-

$58\% \text{ of } 450 = (450/100)58 = 4.5 \times 58 = 261$

Question 69 :

Kalyan is twice as old as his sister and five times younger than his father. After two years their combined age will be 58. How old is Kalyan's sister now?

Difficulty : Moderate**Average Time : 44 Seconds****Options :**



5

2. 4

3. 6

4. 3

Solution :

The correct answer is option 2 i.e. 4 years

Understanding

Let,

Sister age = x

so,

Kalyan's age = $2x$ Father's age = $5(2x) = 10x$

A/q

$$(x + 2) + (2x + 2) + (10x + 2) = 58$$

$$13x + 6 = 58$$

$$13x = 52$$

$$x = 4$$

hence, age of Kalyan's sister age = $x = 4$ years

Question 70 :

What is the third proportional to 9 and 12?

Difficulty : Moderate**Average Time :** 45 Seconds**Options :**

1. 19

2. 16

3. 18

17

Solution :

The correct answer is option 2 i.e. 16

Understanding

$$9:12:: 12:x$$

product of mean = product extreme

$$12 \times 12 = 9x$$

$$x = 144/9 = 16$$

Question 71 :If $10 \sec 2x - 9 \tan 2x = 13$ and $0^\circ < x < 90^\circ$, then $x = \dots\dots\dots$ **Difficulty :** Moderate**Average Time :** 39 Seconds**Options :**1. 30° 2. 45° 3. 60° 4. 90° **Solution :**The correct answer is option 3 i.e. 60°

Understanding



Use hit and trial method from option and 90° eliminate due to not according to question

So,

Take 60°

$$\sec^2 60^\circ = 4$$

$$\tan^2 60^\circ = 3$$

Now, Put the value

$$10 \times 4 - 9 \times 3 = 13$$

$$13 = 13$$

Hence, $x = 60^\circ$

Or,

$$\sec^2 x + 9 \sec^2 x - 9 \tan^2 x = 13$$

$$\sec^2 x + 9 (\sec^2 x - \tan^2 x) = 13$$

$$\sec^2 x + 9 = 13$$

$$\sec^2 x = 4$$

$$\sec x = 2 \quad (\sec 60^\circ = 2)$$

$$\sec x = \sec 60^\circ$$

$$x = 60^\circ$$

Question 72 :

Choose the correct picture that fit the blank place

Difficulty : Moderate

Average Time : 71 Seconds

Options :

1. D



C

3. A

4. B

Solution :

The correct answer is **option 2** i.e. C.

Understanding

In 1st row, we see that one square, one circle, and one triangle. A cross is in all of them.

In the same ways, in 2nd row, one Circle, one triangle and one square but all have Plus(+) sign.

Similarly in 3rd row, One triangle, one square is present but one is missing. So from the above pattern, we say that the missing is One circle and all of them have one line.

Hence, **option 2** is the answer.

Question 73 :

A statement is followed by two arguments. Decide which of the arguments is/are strong with respect to the statement.
Statement: Should income tax be abolished in developed countries? Arguments: 1. Yes, it will motivate to earn more. 2. No, people must learn to share their wealth for the betterment of other people.

Difficulty : Moderate

Average Time : 70 Seconds

Options :

1. Either argument 1 or 2 is strong
2. Only argument 1 is strong
3. Neither argument 1 nor 2 is strong
4. Only argument 2 is strong

Solution :

The correct answer is **option 4** i.e. **Only argument 2 is strong.**

Understanding

Arguments:

1. Yes, it will motivate to earn more. **It is not strong** (It is necessary that if the income tax will get abolished then people will be motivated to earn more)

2. No, people must learn to share their wealth for the betterment of other people. **Strong** (In developed country, there are people who are not living well and there is need to share the wealth for the betterment of other people)

Hence, only argument 2 is strong.

Question 74 :

Fill the missing number for the series from the given options: 8, 11, 16, 23, 32, ?

Difficulty : Moderate

Average Time : 67 Seconds

Options :

1. 40
2. 43
3. 46
4. 42

Solution :

The correct answer is **option 2 i.e. 43.**

Understanding

Add odd numbers in the increasing order: 3, 5, 7,...

$$8 + 3 = 11$$

$$11 + 5 = 16$$

$$16 + 7 = 23$$

$$23 + 9 = 32$$

$$32 + 11 = 43$$

Hence, the complete series is 8, 11, 16, 23, 32, **43**.

Question 75 :

Choose the best suitable Venn diagram for the following. words: Amphibians, Tortoise, Crocodile

Difficulty : Moderate

Average Time : 49 Seconds

Options :



Solution :



The correct answer is **option 3** i.e.

Understanding

Amphibians are small vertebrates that need water, or a moist environment, to survive.

Tortoise and Crocodile both are **Amphibians**.



Hence, the above figure in **option 3** is the best suitable Venn diagram for the words Amphibians, Tortoise, Crocodile.

Question 76 :

Direction: In the following question statements are given and they are followed by conclusions. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read the conclusions and decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

Statements: All the cots are hotels. All hotels are sheets. Conclusions: 1. Some cots are not sheets. 2. Some sheets are cots.

Difficulty : Moderate

Average Time : 98 Seconds

Options :

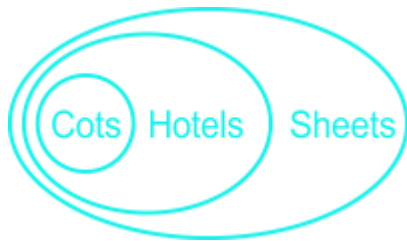
1. Both conclusions 1 and 2 follow
2. only conclusion 2 follows
3. Either conclusion 1 or 2 follows
4. Only conclusion 1 follows

Solution :

The correct answer is **option 2** i.e. **only conclusion 2 follows**.

Understanding

The least possible Venn Diagram for the given statements is shown below:



Conclusions:

1. Some cots are not sheets **False** (As all cots are hotels and all hotels are sheets so, all cots are sheets)
2. Some sheets are cots **True** (As all cots are hotels and all hotels are sheets so, some sheets are definitely cots)

Hence, **only conclusion 2 follows.**

Question 77 :

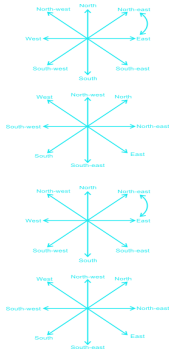
Choose the correct mirror image for the following figure.

Difficulty : Moderate

Average Time : 68 Seconds

Options :

-
- 1.
 - 2.
 - 3.

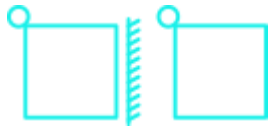


4.

Solution :

The correct answer is **option 1**

Understanding



Hence, the figure in **option 1** is the correct mirror image for the question figure.

Note: Since the mirror is placed vertically beside the question figure, the image will be formed by inverting the question figure horizontally about the mirror.

That means the left side of the figure will become the right side and vice versa.

Question 78 :

Find the missing letter in the series: Y, W, U, S, ?, O

Difficulty : Moderate

Average Time : 83 Seconds

Options :

1. N
2. T
3. R

Q

Solution :

The correct answer is option 4 i.e. Q.

Understanding $Y - 2 = W, W - 2 = U, U - 2 = S, S - 2 = Q, Q - 2 = O.$

Hence, the complete series is Y, W, U, S, Q, O.

Question 79 :

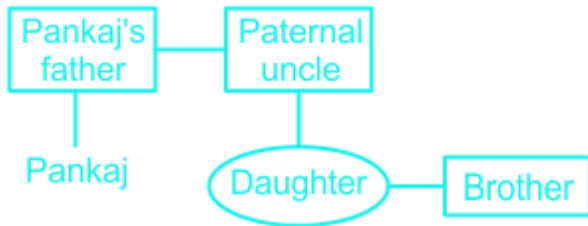
Pointing to a man. Pankaj said. "He is the brother of my paternal uncle's daughter". How is this man related to Pankaj?

Difficulty : Moderate**Average Time : 50 Seconds****Options :**

1. Nephew
2. Cousin
3. Uncle
4. Son

Solution :The correct answer is option 2 i.e. **Cousin**.**Understanding**

- From the question, **Pankaj's paternal uncle's daughter** is also **Pankaj's cousin sister** and her brother is also **Pankaj's Cousin brother**.
- Hence, this man is the cousin of Pankaj.



Question 80 :

Choose the correct picture that replaces the (?) symbol above with the below-given options:

Difficulty : Moderate

Average Time : 55 Seconds

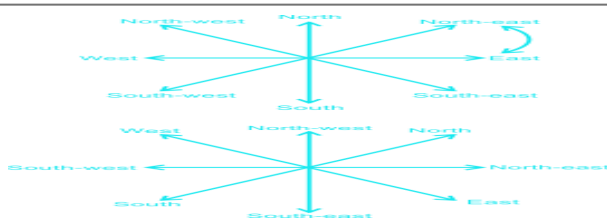
Options :

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

Solution :

The correct answer is option 4 i.e. B.

Understanding



Hence, the figure in **option 4** is the right answer.



Question 81 :

You are given a question and two statements. Identify which of the statements is/are necessary/sufficient to answer the question. Question: How is Rajesh related to Vijay (female)? Statement: I. Rajesh is the only son of Vijay's mother-in-law. II. Veena is Rajesh's only sister.

Difficulty : Moderate

Average Time : 58 Seconds

Options :

1. Data given in I alone is sufficient
2. Data given in both I and II together are not sufficient
3. Data given either in I alone or II alone are sufficient
4. Data given in II alone is sufficient

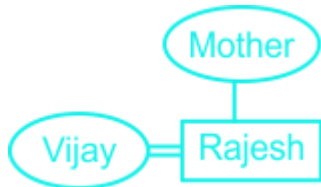
Solution :

The correct answer is option 1 i.e. **Data given in 1 alone is sufficient.**

Understanding

From the statement,

I. Rajesh is the only son of Vijay's mother-in-law.



It means Rajesh is the husband of Vijay.

Hence, **data in I alone is sufficient.**

From the statement,

II. Veena is Rajesh's only sister.



data in II is not sufficient.

So, **data in I alone is sufficient.**

Question 82 :

Read the following statement and the arguments that follow. Decide which of the arguments is strong. Statement: Young entrepreneurs should be encouraged. Arguments: I: Yes, it helps in the industrial development of the country and reduces the burden on the employment market. II: No They are not experienced and may make losses.

Difficulty : Moderate**Average Time : 89 Seconds****Options :**

1. Only argument I is strong
2. Either argument I or II is strong
3. Neither argument I nor II is strong
4. Only argument II is strong

Solution :

The correct answer is **option 1 i.e. Only argument I is strong.**

Understanding

- Only argument 1 is strong i.e. young entrepreneurs should be encouraged because it helps in the industrial development of the country and reduces the burden on the employment market.
- Encouraging entrepreneurship builds personal responsibility, leadership, and decision making.
- Hence, only option 1 makes the argument strong.



Question 83 :

Anya and Manya are standing facing each other. Anya is facing North-West. Which direction is Manya facing with respect to Anya?

Difficulty : Moderate

Average Time : 63 Seconds

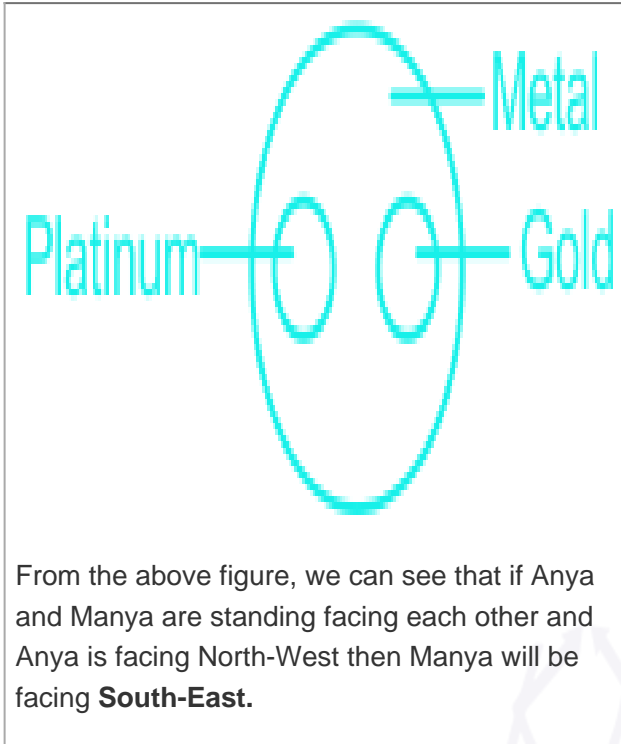
Options :

1. South-West
2. North-East
3. South-East
4. North-West

Solution :

The correct answer is option 3 i.e. South-East.

Understanding



From the above figure, we can see that if Anya and Manya are standing facing each other and Anya is facing North-West then Manya will be facing **South-East**.

Question 84 :

Find the mirror image of the given figure.

Difficulty : Moderate

Average Time : 53 Seconds

Options :

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

Solution :

The correct answer is **option 4 i.e. C**.

Understanding

Hence, **option 4** is the correct mirror image of the given figure.

Note: Since the mirror is placed vertically beside the question figure, the image will be formed by inverting the question figure horizontally about the mirror.

That means the left side of the figure will become the right side and vice versa.

Question 85 :

Select the option that is related to the third word on the same basis as the second word is related to the first word. Sound : Ear :: Scent :

Difficulty : Moderate

Average Time : 63 Seconds

Options :

Feel

2. Think

3. Smell

4. Nose

Solution :

The correct answer is option 4 i.e. **Nose**.

Understanding	Application
From ear, we can hear the sound.	In the same way, from Nose, we can smell scent smell. (Scent means a distinctive smell, especially one that is pleasant.) Hence, Sound : Ear :: Scent : Nose is the correct answer.

Question 86 :

Out of the four option figures, three are similar in a certain manner. However, one figure is NOT like the other three. Select the figure which is different from the rest.

Difficulty : Moderate

Average Time : 61 Seconds

Options :

1. C

2. B

3. D

4. A

Solution :

The correct answer is option 3 i.e. **D**.

Understanding	Application
<p>In option A, a small triangle is inside the big triangle.</p> <p>In option B, a small circle is inside a big circle.</p> <p>In option C, a small square is inside a big square.</p>	<p>But in option D, a small square is inside a hexagon, which does not follow the same pattern as the other 3 options.</p> <p>Hence, option 3 is the right answer.</p>

Question 87 :

Choose the best suitable Venn diagram for the following words. "Metal, Gold, Platinum"

Difficulty : Moderate

Average Time : 59 Seconds

Options :

- 1.
- 2.
- 3.
- 4.

Solution :



The correct answer is option 1 i.e.

Understanding

This is the best suitable Venn diagram for "Metal, Gold, Platinum" words.



As both **gold and platinum** are metal

Hence, **option 1** is the correct answer.

Question 88 :

The above figure is embedded in any of these four figures. The correct containing the above picture is:

Difficulty : Moderate

Average Time : 77 Seconds

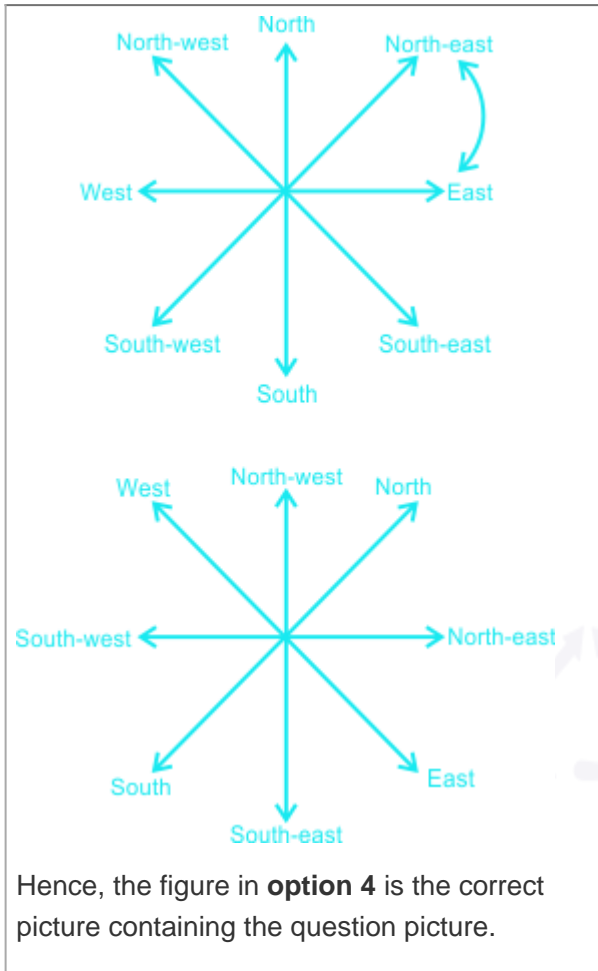
Options :

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

Solution :

The correct answer is option 4 i.e. **A**.

Understanding



Question 89 :

If L stands for + M stands for , N stands for x, P stands for ÷ then what is the value of 7NI2L48P4M6.

Difficulty : Moderate

Average Time : 50 Seconds

Options :

1. 98
2. 90
3. 94
4. 92

Solution :

The correct answer is option 2 i.e. 90.

Understanding		Application
		After sign we have, 7 N 12 L 48 P 4 M 6 = 7 x 12 + 48 ÷ 4 - 6
L	+	= 7 x 12 + 12 - 6
M	-	= 84 + 12 - 6
N	x	= 96 - 6
P	÷	= 90

Question 90 :

Which of the following statements is/are true/false about the speed of sound in different media at 25°C? A. In oxygen gas, the speed of sound is 316 m/s. B. In water (distilled), the speed of sound is 1498 m/s.

Difficulty : Moderate

Average Time : 68 Seconds

Options :

1. Only A is true
2. Neither A nor B are true
3. Both A and B are true
4. Only B is true

Solution :

The correct answer is option **3** i.e. **Both A and B are true.**

- **Both A and B are true** because the speed of sound in different media at 25°C is different.
- In oxygen gas, the speed of sound is 316 m/s.
- In water (distilled), the speed of sound is 1498 m/s.
- Hence, **option 3** is the right answer.

Question 91 :

A statement is followed by two arguments. Decide which of the arguments is/are strong with respect to the statement. Statement: Too much of pain killer affects the liver. Arguments: I. Yes, for all small aches we should avoid taking pain killers. II. No, when we have the comfort of gulping a tablet; why to bear the pain?

Difficulty : Moderate

Average Time : 66 Seconds

Options :

1. Only argument I is strong.
2. Both I and II are strong
3. Only argument II is strong.
4. Neither I nor II is strong.

Solution :

The correct answer is option 1 i.e. **Only argument I is strong.**

Understanding

- **Argument 1** is true that too much of pain killer affects the liver. Taking too much pain killer, or taking a high dose of pain killer continuously over several days can cause damage to the liver. So, an argument I i.e. Yes, for all small aches we should avoid taking pain killers is **true**.
- **Argument II.** No, when we have the comfort of gulping a tablet; why to bear the pain is **wrong** because in extreme cases, it can even cause liver failure.

Hence, the **Only argument I is strong** is the answer.

Question 92 :

Choose the correct Venn diagram which represents the given words: "Utensils, Furniture, Clothes"

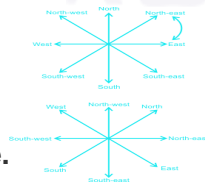
Difficulty : Moderate

Average Time : 76 Seconds

Options :

- 1.
- 2.
- 3.
- 4.

Solution :



The correct answer is **option 1** i.e.

Understanding

Utensils, Furniture, Clothes all are a different object.
The figure in option 1 is the right answer.

Question 93 :

3 R # 2 A \$ K 5 % T 7 & N Y + X B / L Q @ 1 If the second half of the above series is reversed then using the new series finds the missing term. +%2 : /\$3 :: @Y\$:

Difficulty : Moderate

Average Time : 83 Seconds

Options :

1. 7XR
2. TB#

BT#

4. %#K

Solution :

The correct answer is **option 2** i.e. **TB#**.

Understanding

Before reversing the series

3 R # 2 A \$ K 5 % T 7 & N Y + X B / L Q @ 1

After reversing the series

3 R # 2 A \$ K 5 % T 7 1 @ Q L / B X + Y N &

According to the new series

The resultant is three places behind the given pattern

+ /

% \$

2 3

Hence,

@ T

Y B

\$ #

Hence, the correct answer is **TB#**.

Question 94 :

If east becomes north-east, what will be north become?

Difficulty : Moderate

Average Time : 68 Seconds

Options :

1. North-west

North-east

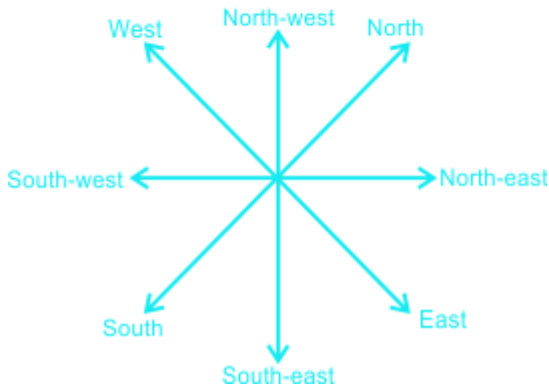
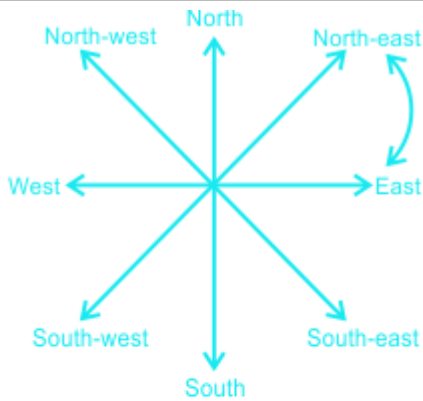
3. West

4. East

Solution :

The correct answer is **option 1 i.e. North-west.**

Understanding



From the above picture, we see that if the east becomes north-east, then the north becomes **North-west.**

Question 95 :

Select the option that is related to the third word on the same basis as the second word is related to the first word.

Magnetic field : Oersted :: Power : ?



Difficulty : Moderate

Average Time : 52 Seconds

Options :

1. Litre
2. Volt
3. Watt
4. Metre

Solution :

The correct answer is **option 3 i.e. Watt.**

Understanding	Application
The oersted is the unit of the auxiliary magnetic field.	In the same way, the unit of power is the watt.

Question 96 :

In a code language, TURN is written as STQM What is the code for LIMP?

Difficulty : Moderate

Average Time : 55 Seconds

Options :

1. KHLP
2. KHNQ
3. KHLO
4. JHLO

Solution :

The correct answer is option **3 i.e. KHLO.**

Understanding

- | | |
|-------------|------------|
| • T - 1 = S | L - 1 = K |
| • U - 1 = T | I - 1 = H |
| • R - 1 = Q | M - 1 = L |
| • N - 1 = M | P - 1 = O. |

Hence, LIMP is coded as **KHLO**.

Question 97 :

Which of the statements is sufficient to answer the question? Question: Find the total number of students in a class if the class has some boys and some girls. Statements: I. The number of boys in a class is 10. II. The number of girls in a class is 2 more than the number of boys.

Difficulty : Moderate**Average Time : 76 Seconds****Options :**

1. Only statement II is sufficient
2. Either statement I or II is sufficient
3. Both statements I and II are sufficient
4. Only statement I is sufficient

Solution :

The correct answer is option **3** i.e. **Both statements I and II are sufficient**.

As per the question,

From Statement 1 we have, the number of boys in a class is 10.

From statement 2 we have, the number of girls in a class is 2 more than the number of boys. That means the total number of girls is **10 + 2 = 12**.

So the total number of students in class 22.

Hence, Both statements **I and II** are sufficient are the answer.

Question 98 :



Read the statements and identify the logically correct conclusion from the given information. Statement: "The pedestrian crossing is few feet away, it is safe to use it." says a mother to her child. Conclusions: I. Pedestrians should use pedestrian crossing for safety. II. All the children know what is pedestrian crossing.

Difficulty : Moderate

Average Time : 70 Seconds

Options :

1. Only conclusion I follows
2. Both I and II follow
3. Only conclusion II follows
4. Neither I nor II follows

Solution :

The correct answer is option 1 i.e. **Only conclusion I follow.**

- Conclusions:

I. Pedestrians should use the pedestrian crossing for safety.

Pedestrian is the most important constituent of traffic. In order to remain safe from perils of the road, pedestrians should cultivate the habit of using road infrastructure in a proper manner. Hence conclusion I is true.

II. All the children know what is a pedestrian crossing.

No, it is not true that all the children know what is a pedestrian crossing.

- Hence, **Only conclusion I follow** is the right answer.

Question 99 :

Choose the odd one from among the given figures.

Difficulty : Moderate

Average Time : 69 Seconds

Options :

1. A
2. D
3. C

B**Solution :**

The correct answer is **option 4** i.e. **B**.

Understanding

From the question figure, we can see that figure B is different from figure A, C, and, D because in figure B the arrow is on the side where no other line segment is present.

Hence, figure B of option 4 is the odd one from among the given figures.

Question 100 :

A man weighs 60 N on earth. What will be his weight on the moon?

Difficulty : Moderate**Average Time : 52 Seconds****Options :**

1. 20 N
2. 10 N
3. 360 N
4. 120 N

Solution :

The correct answer is **Option 2** i.e **10 N**

- Your weight on the Moon is 16.5% what you would experience on Earth. In other words, if you weighed 100 kg on Earth, you would weigh a mere 16.5 kg on the Moon.

And 16.5% is approximately equal to 1/6th of the quantity

So, if a man weighs 60 N on earth

His weight on Moon = $60N/6 = 10N$

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Analysis

The analysis of Rrb Group D CBT - 1 Previous Year Question Paper held on 2018-10-01 in the Evening exam is as follows:

1. 100 questions were moderate.
2. The safe score is 77 marks.
3. 100 questions were asked from CBT -1 and 100 questions were asked from CBT -1
4. 0 questions should have been skipped if you were short of time.

Rrb Group D CBT - 1 Previous Year Question Paper Topic Wise Weightage

CBT -1

Rrb Group D CBT - 1 Previous Year Question Paper Tips and Tricks



1. Try to solve Rrb Group D CBT - 1 Previous Year Question Paper without taking any help from the solutions.
2. Rrb Group D CBT - 1 Previous Year Question Paper require proper usage of concept so firstly read the question thoroughly and then use the right concept.
3. In case you're not able to solve the question in less than 30 seconds in the exam then you should skip the question and move to the next question.

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