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Q.1 **Who was the first Indian Governor of Reserve Bank of India ?**

A. Deshmukh
B. Raghuram Rajan
C. Suresh Mathur
D. Krishnamachari

Answer: A

Sol:

Sir Chintaman Dwarkanath Deshmukh was the first Indian to be appointed as the Governor of the Reserve Bank of India (RBI). He served as the Governor from August 11, 1943, to June 30, 1949. Before his appointment as Governor, Deshmukh was an Indian Civil Service (ICS) officer. His tenure as Governor was significant because it was during the crucial period of World War II, and he played a vital role in managing the Indian economy under challenging circumstances. After his term as RBI Governor, Deshmukh also served as the Finance Minister of India, where he continued to shape India's economic policies.

Important Key Points:

1. Sir C.D. Deshmukh was the first Indian Governor of the Reserve Bank of India.
2. He served from 1943 to 1949, a period that included the final years of World War II.
3. Deshmukh was an Indian Civil Service (ICS) officer before his appointment to the RBI.
4. He later became the Finance Minister of India, serving from 1950 to 1956.
5. During his tenure as Finance Minister, Deshmukh was responsible for introducing significant economic reforms.
6. Deshmukh was also instrumental in the establishment of the Planning Commission of India.

Knowledge Booster:

 Raghuram Rajan: An Indian economist who served as the 23rd Governor of the Reserve Bank of India from 2013 to 2016.
 Suresh Mathur: A name not associated with the governorship of RBI.
 Krishnamachari: T.T. Krishnamachari was an Indian finance minister but was never the Governor of RBI.

Q.2 **The student who designed the Rs. sign was studying at :**

A. JNU
B. IIT Bombay
C. Hyderabad University
D. IIT Madras

Answer: B

Sol:

The Indian Rupee symbol (₹) was designed by Udaya Kumar Dharmalingam, who was a student at IIT Bombay at the time. The symbol was officially adopted in 2010 and represents India's economic identity at the international level. The design is a blend of the Devanagari "Ra" (₹) and the Roman capital "R" without its vertical bar, which symbolizes the Indian flag and also denotes the equality sign.

Important Key Points:

1. Udaya Kumar Dharmalingam designed the Indian Rupee symbol while studying at IIT Bombay.
2. The symbol ₹ combines elements of the Devanagari script and the Roman alphabet.
3. It was officially adopted in 2010 and is now used on currency notes and coins in India.
4. The symbol reflects India's cultural heritage and its growing economic stature globally.
5. The design of the Rupee symbol was selected through a national competition.
6. The adoption of the symbol was a significant step in standardizing the representation of the Indian Rupee in international financial markets.

Knowledge Booster:

 JNU: Jawaharlal Nehru University, known for its strong emphasis on humanities and social sciences, but not related to the design of the Rupee symbol.
 Hyderabad University: A central university in Hyderabad, unrelated to the creation of the Rupee symbol.
 IIT Madras: Another premier engineering institution in India, but not where the Rupee symbol was designed.

Q.3 **The bank note press is at :**

A. Nashik
B. Dewas
C. Salbani
D. all of the above

Answer: D

Sol:

The correct answer is (d) All of the above.

 The Bank Note Press facilities for printing Indian currency are located at:

o Nashik (Maharashtra): The Currency Note Press (CNP) is one of India's oldest and most prominent facilities for printing currency notes.
o Dewas (Madhya Pradesh): Bank Note Press (BNP), a major facility responsible for printing various denominations of banknotes.
o Salboni (West Bengal): Bharatiya Reserve Bank Note Mudran (P) Ltd, another important facility established to meet the growing demand for Indian currency notes.

These facilities collectively handle the printing of Indian currency under the supervision of the Reserve Bank of India (RBI) and the Government of India. Each facility is equipped with advanced technology to produce secure and durable currency notes.

Information Booster:

 Currency Printing Locations:

o Nashik: Currency Note Press, operational since 1928.
o Dewas: Bank Note Press, a key unit for note printing.
o Salboni: Bharatiya Reserve Bank Note Mudran, plays a vital role in fulfilling the country's currency needs.

 Coin Minting: Coins are minted by Security Printing and Minting Corporation of India Limited (SPMCIL) in Mumbai, Kolkata, Hyderabad, and Noida.

Additional Information:

 Nashik: One of the oldest note printing presses in India.
 Dewas: A major facility for printing currency notes.
 Salboni: Contributes to India's currency printing needs.
 All of the Above (Correct): These are all locations where Indian banknotes are printed.

Q.4 **It is not among the four largest states in terms of population :**

A. Bihar
B. Uttar Pradesh
C. Maharashtra
D. Tamil Nadu

Answer: D

Sol:

Tamil Nadu is not among the four largest states in India in terms of population. The four most populous states are Uttar Pradesh, Maharashtra, Bihar, and West Bengal. While Tamil Nadu has a significant population, it is ranked 6th or 7th depending on the latest census, making it less populous compared to the other mentioned states.

Important Key Points:

1. Tamil Nadu is ranked lower in population compared to Uttar Pradesh, Maharashtra, Bihar, and West Bengal.
2. Uttar Pradesh is the most populous state in India, followed by Maharashtra.
3. Bihar and West Bengal also have large populations, contributing significantly to India's demographic landscape.
4. Population size plays a crucial role in political representation, resource allocation, and economic planning.

5. Tamil Nadu, while not in the top four by population, is one of the more developed and industrialized states in India.
6. Population distribution across India varies significantly, with northern and eastern states generally having higher populations.
Knowledge Booster:
 Bihar: One of the most populous states in India, known for its significant contribution to the country's labor force.
 Uttar Pradesh: The most populous state in India, playing a major role in national politics and economy.
 Maharashtra: A leading state in terms of both population and economic output, home to Mumbai, the financial capital of India.

Q.5 **Its population density per square kilometer is highest :**

A. Bihar
B. West Bengal
C. Kerala
D. Uttar Pradesh

Answer: A

Sol:

Bihar has the highest population density per square kilometer among Indian states. Population density is calculated by dividing the total population by the total land area. Bihar, despite being relatively small in size, has a very high population, leading to a density that surpasses that of other states. This high density has implications for resources, infrastructure, and governance.
Important Key Points:
1. Bihar has the highest population density in India, with a large population living in a relatively small geographical area.
2. High population density can lead to challenges in infrastructure, healthcare, and education services.
3. Population density is an important metric for planning and development, as it affects resource allocation and urban planning.
4. Bihar's high density is partly due to its agrarian economy, where large rural populations live in close proximity.
5. The state's population density impacts its social and economic policies, necessitating targeted interventions to manage resources effectively.
6. High density can also foster vibrant markets and cultural exchange but may strain public services and infrastructure.
Knowledge Booster:
 West Bengal: Also has a high population density, particularly in the Kolkata metropolitan area.
 Kerala: Known for its high human development index (HDI) and density, though it ranks lower than Bihar in population density.
 Uttar Pradesh: The most populous state but with a lower density due to its larger geographical area.

Q.6 **The name of the first supercomputer developed in India was :**

A. Param 8000
B. Aditya
C. Anupam-Adhyay
D. Saga-220

Answer: A

Sol:

Param 8000 was the first supercomputer developed in India. It was created by the Centre for Development of Advanced Computing (C-DAC) in 1991 under the leadership of Dr. Vijay Bhatkar. This project was initiated after the U.S. denied India access to Cray supercomputers due to technology embargoes. The success of Param 8000 marked a significant milestone in India's journey towards self-reliance in advanced computing technology.
Important Key Points:
1. Param 8000 was India’s first supercomputer, developed by C-DAC in 1991.
2. The development of Param 8000 was in response to technology embargoes, showcasing India's capability in high-performance computing.
3. The project was led by Dr. Vijay Bhatkar, a pioneer in Indian computing.
4. Param 8000 had a peak performance of 1 GigaFLOP (floating-point operations per second).
5. The success of Param 8000 led to the development of subsequent Param series supercomputers, enhancing India's computational capabilities.
6. This supercomputer played a crucial role in various fields, including weather forecasting, scientific research, and defense.
Knowledge Booster:
 Aditya: A high-performance computing system used for weather forecasting in India, not the first supercomputer.
 Anupam-Adhyay: Another Indian supercomputer, but not the first one.
 Saga-220: A supercomputer developed by ISRO for space applications, but not the first in India.

Q.7 **When did 4G service start in India ?**

A. 2000
B. 2012
C. 2016
D. Not started yet

Answer: B

Sol:

The correct answer is (b) 2012.
 4G services in India were first launched by Airtel on 10 April 2012 in Kolkata using TD-LTE technology. This marked the beginning of high-speed internet services in India.
 Airtel became the first telecom company in India to provide 4G services through dongles and modems, initially targeting cities like Kolkata, followed by launches in other cities such as Bangalore (7 May 2012), Pune (18 October 2012), and the tri-city area of Chandigarh, Mohali, and Panchkula (25 March 2013).
 The introduction of 4G services marked a significant milestone in India’s telecommunications industry, offering faster internet speeds and more reliable connectivity compared to 3G services.
Information Booster:
 Airtel 4G Launch: Airtel launched India’s first 4G services in Kolkata on 10 April 2012.
 TD-LTE Technology: Airtel used this technology to provide 4G internet services through dongles and modems.
 Expansion to Other Cities: Following Kolkata, 4G services were introduced in Bangalore, Pune, Chandigarh, Mohali, and Panchkula.
 4G Benefits: 4G services provided significantly higher internet speeds, allowing faster downloads, video streaming, and better overall connectivity.
 Telecom Revolution: The introduction of 4G services was a key development in India’s ongoing telecom revolution, laying the groundwork for further advancements like 5G.

Q.8 **The share price index of UK is**

A. STOXX
B. FTSE 100
C. SET
D. JCI

Answer: B

Sol:

The FTSE 100 (Financial Times Stock Exchange 100 Index) is the share price index of the United Kingdom. It includes the 100 companies listed on the London Stock Exchange with the highest market capitalization. The FTSE 100 is widely regarded as a barometer of the UK economy and is one of the most followed equity indices in the world.
Important Key Points:
1. FTSE 100 is the leading stock market index in the United Kingdom, tracking the performance of the 100 largest companies listed on the London Stock Exchange.
2. The index is commonly used to gauge the health of the UK economy and investor sentiment.
3. Companies listed on the FTSE 100 are major players in industries such as finance, energy, and consumer goods.
4. The index is maintained by the FTSE Group, a subsidiary of the London Stock Exchange Group.
5. Changes in the FTSE 100 can have significant impacts on global financial markets due to the influence of these large companies.
6. The FTSE 100 is closely watched by investors, analysts, and policymakers as an indicator of market trends and economic conditions.
Knowledge Booster:

- STOXX: A family of European stock indices, including the Euro STOXX 50, but not specific to the UK.
- SET: The Stock Exchange of Thailand index, unrelated to the UK market.
- JCI: The Jakarta Composite Index, representing the Indonesian stock market.

Q.9 **He is called Mahamana**

A. Gandhiji
B. Nehru
C. Malviya
D. Rajiv Gandhi

Answer: C

Sol:

Madan Mohan Malviya is fondly called Mahamana. He was a notable Indian educationist and politician, and he played a significant role in the Indian independence movement. Malviya is best known for founding the Banaras Hindu University (BHU) in 1916, which remains one of the most prestigious universities in India. His contributions to education, social reforms, and the freedom struggle earned him the honorific title "Mahamana," which means "great soul."

Important Key Points:

1. Madan Mohan Malviya was a key figure in the Indian independence movement and is revered as Mahamana.
2. He founded the Banaras Hindu University (BHU), which is one of India's leading institutions of higher learning.
3. Malviya was a strong advocate for education, social reforms, and the upliftment of the underprivileged.
4. He served as the President of the Indian National Congress four times, reflecting his importance in the freedom struggle.
5. Malviya was also a lawyer, and he famously defended several Indian nationalists in court.
6. His legacy continues to inspire generations, and he was posthumously awarded the Bharat Ratna, India's highest civilian honor, in 2015.

Knowledge Booster:

- Gandhiji: Known as the Father of the Nation, played a leading role in India's struggle for independence but is not called Mahamana.
- Nehru: India's first Prime Minister, a key figure in the independence movement, but not known as Mahamana.
- Rajiv Gandhi: Former Prime Minister of India, significant in modern Indian history, but not associated with the title Mahamana.

Q.10 **Who was the first Indian actress?**

A. Devika Rani
B. Madhubala
C. Meena Kumari
D. Nargis

Answer: A

Sol:

Devika Rani was the first Indian actress and is often referred to as the "First Lady of Indian Cinema." She made her debut in the film "Karma" in 1933, opposite her husband Himanshu Rai. Devika Rani was not only an actress but also a producer and studio head at Bombay Talkies, one of the leading film studios of that time. Her contributions to the film industry laid the foundation for the growth of Indian cinema.

Important Key Points:

1. Devika Rani was the first Indian actress, known for her pioneering role in the early days of Indian cinema.
2. She starred in India's first English-language film, "Karma" (1933), which gained international recognition.
3. Devika Rani was instrumental in establishing Bombay Talkies, one of the most influential film studios in Indian cinema history.
4. She was known for her beauty, acting talent, and the boldness of her roles during a conservative era.
5. Devika Rani received the Padma Shri in 1958 and the Dadasaheb Phalke Award in 1970 for her contributions to Indian cinema.
6. Her legacy continues to influence Indian actresses and the film industry as a whole.

Knowledge Booster:

- Madhubala: A legendary actress known for her beauty and roles in films like "Mughal-e-Azam," but not the first Indian actress.
- Meena Kumari: Known as the "Tragedy Queen" of Indian cinema, famous for her emotional roles, but not the first actress.
- Nargis: An iconic actress known for her role in "Mother India," but she came after Devika Rani in the timeline of Indian cinema.

Q.11 **It was the first country to declare a carbon tax :**

A. Sweden
B. Germany
C. New Zealand
D. America

Answer: A

Sol:

Sweden was the first country in the world to implement a carbon tax in 1991. The tax was introduced as part of Sweden's environmental strategy to reduce carbon dioxide (CO_2) emissions and combat climate change. The carbon tax in Sweden is applied to the burning of fossil fuels, such as oil, coal, and natural gas, to encourage the use of cleaner energy sources. Sweden's proactive approach to environmental taxation has been widely regarded as successful and has inspired other countries to adopt similar measures.

Important Key Points:

1. Sweden introduced the world's first carbon tax in 1991 to reduce CO_2 emissions.
2. The tax targets the use of fossil fuels by making them more expensive, thereby promoting renewable energy sources.
3. Sweden's carbon tax has been a key factor in the country's ability to significantly reduce its greenhouse gas emissions.
4. The tax is part of a broader strategy that includes investments in renewable energy and energy efficiency.
5. Sweden's carbon tax model has influenced environmental policy in many other countries around the world.
6. The success of Sweden's carbon tax is often cited in discussions about effective climate change mitigation strategies.

Knowledge Booster:

- Germany: Known for its strong environmental policies, including the Energiewende (energy transition), but did not introduce the first carbon tax.
- New Zealand: Implements emissions trading schemes, but did not introduce the first carbon tax.
- America: The U.S. has considered various forms of carbon pricing but did not pioneer the concept of a carbon tax.

Q.12 **Kiwi bird is found at :**

A. Norway
B. England
C. New Zealand
D. Spain

Answer: C

Sol:

The kiwi bird is native to New Zealand and is a unique flightless bird. The kiwi is the national symbol of New Zealand and is notable for its small size, long beak, and nocturnal habits. There are five species of kiwi, and they are considered endangered, with conservation efforts in place to protect their habitats and populations. The term "Kiwi" is also colloquially used to refer to the people of New Zealand.

Important Key Points:

1. The kiwi bird is endemic to New Zealand, meaning it is found nowhere else in the world.
2. Kiwis are flightless birds with distinctive long beaks and are primarily nocturnal.
3. There are five species of kiwi, all of which are endangered or vulnerable due to habitat loss and predation by introduced species.
4. The kiwi is a national symbol of New Zealand, and the term "Kiwi" is also used to refer to New Zealanders.
5. Conservation programs in New Zealand focus on protecting the remaining kiwi populations and their natural habitats.
6. The kiwi bird plays an important role in New Zealand's cultural identity and natural heritage.

Knowledge Booster:

 Norway: Located in Northern Europe, not the native habitat of the kiwi bird.
 England: Part of the United Kingdom, where the kiwi bird is not found in the wild.
 Spain: Located in Southern Europe, and does not have the kiwi bird as part of its fauna.

Q.13 **The currency of Brazil is**

A. Ruble
B. Real
C. Bar
D. Riyal

Answer: B

Sol:

The currency of Brazil is the Real (plural: Reais), denoted by the symbol R$. The Real was introduced in 1994 as part of a broader economic plan to stabilize the Brazilian economy, which had been plagued by hyperinflation. The introduction of the Real was a key component of the Plano Real, which successfully reduced inflation and brought economic stability to Brazil.
Important Key Points:
1. The Real (R$) is the official currency of Brazil, introduced in 1994.
2. The currency was part of the Plano Real, a successful economic reform program aimed at stabilizing Brazil's economy.
3. The Real replaced the old currency, the Cruzeiro, which had suffered from hyperinflation.
4. Brazil's Central Bank manages the issuance and regulation of the Real.
5. The Real is subdivided into 100 centavos, similar to how the dollar is divided into cents.
6. The introduction of the Real is considered one of the most successful monetary reforms in Latin America.
Knowledge Booster:
 Ruble: The currency of Russia, not related to Brazil.
 Bar: Not a currency, possibly confused with other terms but not relevant here.
 Riyal: The currency of Saudi Arabia and Qatar, not Brazil.

Q.14 **Which is called the city of palaces ?**

A. Patna
B. Kolkata
C. Chandigarh
D. Lucknow

Answer: B

Sol:

Kolkata is often referred to as the City of Palaces due to its rich architectural heritage from the British colonial period. The city is home to numerous grand buildings, palatial residences, and heritage structures that reflect the grandeur of the British Raj. Many of these buildings were constructed during the 18th and 19th centuries when Kolkata (then Calcutta) served as the capital of British India.
Important Key Points:
1. Kolkata, known as the City of Palaces, boasts a rich collection of colonial-era architecture.
2. The city was the capital of British India until 1911, leading to the construction of many grand buildings and residences.
3. Notable architectural landmarks in Kolkata include the Victoria Memorial, Marble Palace, and the Government House.
4. Kolkata's architecture is a blend of European styles with Indian influences, reflecting the city's diverse cultural history.
5. The palatial residences in Kolkata were often built by wealthy merchants and zamindars during the British era.
6. Kolkata remains an important cultural and intellectual hub in India, with its architectural heritage being a significant tourist attraction.
Knowledge Booster:
 Patna: The capital of Bihar, known for its historical significance but not referred to as the City of Palaces.
 Chandigarh: Known for its modernist architecture designed by Le Corbusier, but not associated with palaces.
 Lucknow: Known for its Nawabi culture and heritage but not specifically referred to as the City of Palaces.

Q.15 **Who is known as the "King of Good Times"?**

A. Shahrukh khan
B. Salman Khan
C. Vijay Malaya
D. Kejriwal

Answer: C

Sol:

Vijay Mallya was popularly known as the "King of Good Times" due to his lavish lifestyle and ownership of the popular beer brand Kingfisher. Mallya was the chairman of United Breweries Group, a conglomerate with interests in alcoholic beverages, aviation, real estate, and more. His flamboyant lifestyle and business ventures earned him the nickname, but his fortunes declined due to financial troubles, particularly related to the failure of Kingfisher Airlines, leading to legal issues and his departure from India.
Important Key Points:
1. Vijay Mallya was known as the "King of Good Times" for his luxurious lifestyle and success in the liquor industry.
2. He was the chairman of the United Breweries Group, which owned the popular Kingfisher beer brand.
3. Mallya's business empire included ventures in aviation (Kingfisher Airlines), real estate, and sports.
4. His lavish lifestyle and public persona made him a well-known figure in India and abroad.
5. Financial difficulties, particularly the collapse of Kingfisher Airlines, led to his downfall, with significant debts owed to banks.
6. Mallya left India in 2016 amid legal proceedings related to loan defaults and was declared a fugitive economic offender by Indian authorities.
Knowledge Booster:
 Shahrukh Khan: A leading Bollywood actor, known as the "King of Bollywood," not associated with the title "King of Good Times."
 Salman Khan: Another major Bollywood actor, known for his philanthropic work, but not linked to this title.
 Kejriwal: Arvind Kejriwal, an Indian politician and current Chief Minister of Delhi, not associated with the title "King of Good Times."

Q.16 **This was Mumbai's first test tube baby and in 2016 she gave birth to a baby boy :**

A. Durga
B. Harsha
C. Simi
D. Radha

Answer: B

Sol:

The correct answer is (b) Harsha.
Harsha Chavda, born on August 6, 1986, was Mumbai's first and India's second test tube baby. She was born through in vitro fertilization (IVF), a revolutionary assisted reproductive technology that allows fertilization outside the human body. Harsha's birth was a significant milestone in India's medical history. In 2016, Harsha herself became a mother, giving birth to a baby boy, which further highlighted the success and long-term benefits of IVF technology in India.
Key Points:
 Harsha Chavda was born on August 6, 1986, as Mumbai's first and India's second test tube baby.
 She was conceived using in vitro fertilization (IVF) technology.
 IVF technology helps couples with fertility issues conceive by fertilizing an egg outside the body.
 In 2016, Harsha gave birth to a baby boy, showcasing the long-term effectiveness of IVF.
 Harsha's birth marked an important moment in India's advancement in reproductive medicine.
 India's first test tube baby, Durga (real name: Kanupriya Agarwal), was born on October 3, 1978.

Information Booster: Durga: Born on October 3, 1978, she was India's first test tube baby, conceived through IVF. She was named "Durga" because her birth coincided with Durga Puja. Harsha: Born on August 6, 1986, Harsha Chavda was India's second test tube baby and Mumbai's first. She gave birth to her own child in 2016. Simi: Not relevant in the context of test tube babies in India. Radha: Not relevant in the context of test tube babies in India.
Additional Information:
 Durga (Kanupriya Agarwal) was India's first test tube baby and the second in the world, born just a few months after the world's first IVF baby.
 Louis Jay Brown was the world's first test tube baby, born on July 25, 1978, in the UK, marking the success of IVF technology globally.
 IVF technology has advanced significantly, helping millions of couples worldwide to conceive, and has become a mainstream medical procedure for those facing infertility challenges.

Q.17 **Who was the first woman pilot of Indian Airlines ?**

A. Durga Banerjee
B. Diana Edulji
C. Neerja
D. Aarti Saha

Answer: A

Sol:

Durga Banerjee was the first woman pilot of Indian Airlines. She broke significant barriers in a male-dominated profession and became a role model for women aspiring to careers in aviation. She started flying in 1956 and went on to become the first Indian woman to fly commercial aircraft.
Important Key Points:
1. Durga Banerjee was the first female pilot for Indian Airlines, starting her career in 1956.
2. She was a trailblazer in the field of aviation, inspiring many women to pursue careers as pilots.
3. Durga Banerjee's career spanned over decades, where she flew a variety of aircraft for Indian Airlines.
4. Her achievements are significant in the context of women's empowerment in India.
5. She received numerous accolades for her contributions to Indian civil aviation.
6. Banerjee's legacy continues to inspire women in aviation and other fields traditionally dominated by men.
Knowledge Booster:
 Diana Edulji: A famous Indian cricketer, not related to aviation.
 Neerja: Neerja Bhanot, an Indian flight attendant who saved passengers during a hijacking, but not a pilot.
 Aarti Saha: An Indian swimmer, not related to aviation.

Q.18 **This bank has allowed its employees to access the bank's servers from home :**

A. SBI
B. HDFC
C. Yes Bank
D. ICICI

Answer: A

Sol:

The correct answer is (a) SBI.
The State Bank of India (SBI) has announced a free doorstep banking service for its differently-abled customers, allowing them to avail of this service three times a month at no cost. This initiative is a part of SBI's efforts to provide inclusive banking services and enhance the accessibility of its offerings to all sections of society, particularly for those who face mobility challenges. Customers can order a minimum of Rs 1,000 and a maximum of Rs 20,000 through this facility, ensuring that essential banking services are accessible from the comfort of their homes.
Key Points:
 SBI provides free doorstep banking services for differently-abled customers.
 The service can be availed of for free up to three times a month.
 Customers can request amounts ranging from Rs 1,000 to Rs 20,000.
 This initiative ensures greater convenience and accessibility for customers with mobility challenges.
 It is part of SBI's broader initiative to make banking inclusive for all.
 The service covers various transactions, including cash withdrawal, deposits, and more.
Information Booster: ICICI Bank: A leading bank in India, ICICI offers a work-from-home option, allowing its employees to access servers remotely, but it does not offer a similar doorstep banking service. HDFC Bank: While HDFC Bank has various digital services and initiatives, it does not provide a specific free doorstep banking service like SBI. Yes Bank: Primarily focused on corporate banking, Yes Bank does not offer free doorstep services for differently-abled individuals.
Additional Information:
 SBI's Doorstep Banking service is a boon for senior citizens, differently-abled individuals, and customers facing physical limitations.
 ICICI Bank leads in digital banking and employee-friendly policies but does not have a dedicated free doorstep banking facility like SBI.
 HDFC Bank focuses more on digital and mobile banking solutions, offering convenience but not specific to differently-abled customers.
 Yes Bank is undergoing a restructuring phase and is more focused on stabilizing its core operations rather than launching new customer-centric services like SBI.

Q.19 **This writer was born in Bihar :**

A. Phanishwarnath 'Renu'
B. Premchand
C. Mahadevi Verma
D. Ramkumar Verma

Answer: A

Sol:

Phanishwarnath 'Renu' was a renowned Hindi writer born in Bihar. He is best known for his novel "Maila Anchal," which is considered one of the finest examples of regional literature in India. His works often depicted the rural life of Bihar, capturing the essence of the region's culture, struggles, and aspirations.
Important Key Points:
1. Phanishwarnath 'Renu' was a prominent Hindi writer born in Bihar, famous for his novel "Maila Anchal."
2. His works are celebrated for their vivid portrayal of rural life and culture in Bihar.
3. Renu was a pioneer of the regional novel in Hindi literature, focusing on the lives of ordinary people.
4. "Maila Anchal" is a landmark in Hindi literature and has been translated into several languages.
5. His storytelling is characterized by rich language and deep empathy for his characters.
6. Renu's contributions to Hindi literature have earned him a lasting place in India's literary history.
Knowledge Booster:
 Premchand: Often considered the father of modern Hindi literature, but he was born in Uttar Pradesh.
 Mahadevi Verma: A prominent Hindi poet and freedom fighter, born in Uttar Pradesh.
 Ramkumar Verma: A Hindi poet and dramatist, not as closely associated with Bihar.

Q.20 **He was a famous critic of Hindi literature :**

A. Namwar Singh
B. Hari Shankar Parsai
C. Jai Shankar Prasad
D. Nirala

Answer: A

Sol:

Namwar Singh was a well-known Hindi literary critic and scholar. He played a crucial role in shaping modern Hindi literary criticism and was known for his deep insights into Hindi literature. Namwar Singh authored several important works of criticism and was a respected figure in literary circles.
Important Key Points:

1. Namwar Singh was a leading figure in Hindi literary criticism, known for his scholarly work.
2. He contributed significantly to the development of modern Hindi literary theory and criticism.
3. Namwar Singh's work often focused on the analysis and interpretation of Hindi literature and its evolution.
4. He was also a respected academic, teaching at several universities and mentoring a generation of students.
5. His writings cover a wide range of topics, from literary history to contemporary literary movements.
6. Namwar Singh was awarded the Sahitya Akademi Award for his contributions to Hindi literature.

Knowledge Booster:

 Hari Shankar Parsai: A noted Hindi satirist and author, known for his humor and social commentary.
 Jai Shankar Prasad: A famous Hindi poet, playwright, and novelist, not primarily known as a critic.
 Nirala: A prominent figure in Hindi literature, known for his poetry and works in the Chhayavad movement.

Q.21 **The writer of 'Padmaavat' was**

A. Kabir
B. Tulsidas
C. Jayasi
D. Nirala

Answer: C

Sol:

Malik Muhammad Jayasi is the writer of the famous epic poem "Padmaavat". This 16th-century Awadhi language poem narrates the story of the beautiful queen Padmavati of Chittor and her husband, King Ratan Sen, and the subsequent siege by Alauddin Khilji. "Padmaavat" is considered a significant work in Indian literature and has been adapted into various art forms, including films.

Important Key Points:

1. Malik Muhammad Jayasi wrote the epic poem "Padmaavat" in the 16th century in the Awadhi language.
2. The poem tells the story of Queen Padmavati of Chittor, her bravery, and the siege of Chittor by Alauddin Khilji.
3. "Padmaavat" is one of the most famous works in Indian literature, blending history, legend, and romance.
4. The poem is known for its rich language and poetic beauty, reflecting the culture of its time.
5. Jayasi's work has been influential in Indian literature and continues to be studied and appreciated.
6. The story of Padmavati has been adapted into various forms, including the 2018 Bollywood film "Padmaavat."

Knowledge Booster:

 Kabir: A 15th-century Indian mystic poet and saint, known for his dohas and spiritual poetry, not related to "Padmaavat."
 Tulsidas: A Hindu poet-saint, known for writing the "Ramcharitmanas," a retelling of the Ramayana.
 Nirala: A Hindi poet associated with the Chhayavad movement, not connected to "Padmaavat."

Q.22 **The author of "Game of Thrones" is**

A. George Martin
B. R. Andrade
C. Sue Grafton
D. David Baldasi

Answer: A

Sol:

George R.R. Martin is the author of the "Game of Thrones" series, which is the first book in his larger series titled "A Song of Ice and Fire." This epic fantasy series has become immensely popular, particularly after being adapted into a television series by HBO. The story is set in the fictional continents of Westeros and Essos and is known for its complex characters, intricate political plots, and rich world-building. The books explore themes of power, betrayal, honor, and the consequences of war.

Important Key Points:

1. George R.R. Martin began writing "A Song of Ice and Fire" in the 1990s, with "A Game of Thrones" being the first book in the series.
2. The series is set in a medieval-inspired world with intricate politics, warring factions, and a looming supernatural threat.
3. The TV adaptation, "Game of Thrones," became one of the most-watched and critically acclaimed series of all time.
4. Martin's writing is known for its unexpected plot twists, moral ambiguity, and the portrayal of flawed, multidimensional characters.
5. The series is still ongoing, with fans eagerly awaiting the final books, "The Winds of Winter" and "A Dream of Spring."
6. "A Song of Ice and Fire" has had a significant impact on the fantasy genre, inspiring numerous other works and expanding the audience for fantasy literature.

Knowledge Booster:

 R. Andrade: Not associated with "Game of Thrones" or "A Song of Ice and Fire."
 Sue Grafton: An American author known for her mystery series, the "Alphabet Series," unrelated to "Game of Thrones."
 David Baldasi: This seems to be a typo or incorrect name, as no notable author by this name is associated with the series.

Q.23 **The author of "India After Gandhi" is**

A. Chetan Bhagat
B. Suresh Menon
C. Ramachandra Guha
D. Naveen Chawla

Answer: C

Sol:

Ramachandra Guha is the author of "India After Gandhi," a comprehensive history of India covering the period after its independence in 1947. The book is widely acclaimed for its detailed analysis of the political, social, and economic developments in post-independence India. Guha, a renowned historian and writer, provides an in-depth look at the challenges and triumphs India has faced as a nation.

Important Key Points:

1. "India After Gandhi" by Ramachandra Guha is considered a definitive account of India's history from 1947 onwards.
2. The book covers significant events such as the partition, the integration of princely states, the Emergency, economic reforms, and more.
3. Guha's work is praised for its balanced perspective and extensive research, offering insights into the complexities of Indian democracy.
4. The book also explores the social and cultural changes in India over the decades, including the rise of regionalism, communalism, and caste politics.
5. Guha's narrative style makes the book accessible to both scholars and general readers interested in Indian history.
6. "India After Gandhi" has been influential in shaping the understanding of modern Indian history and continues to be a reference for students and historians.

Knowledge Booster:

 Chetan Bhagat: A popular Indian author known for contemporary fiction but not associated with historical writing.
 Suresh Menon: A journalist and writer, but not the author of "India After Gandhi."
 Naveen Chawla: An Indian civil servant and writer, but not connected to this book.

Q.24 **His prison room is a tourist spot :**

A. Veer Savarkar
B. Kanhaiya
C. Jai Prakash Narayan
D. Anna Hazare

Answer: A

Sol:

The correct answer is (a) Veer Savarkar.

Vinayak Damodar Savarkar, also known as Veer Savarkar, was a prominent revolutionary and one of the key figures in India's struggle for independence. He played a crucial role in developing the ideology of Hindu nationalism, or "Hindutva," which became a major political movement in India. In 1904, he founded the revolutionary organization Abhinav Bharat to fight against British colonial rule. Savarkar was implicated in the Nashik Conspiracy Case and was sentenced to life imprisonment at the Cellular Jail (Kala Pani) in the Andaman and Nicobar Islands. He spent a significant part of his imprisonment there, from July 4, 1911, to May 21, 1921. Today, his prison cell is a popular tourist attraction, symbolizing his immense contribution to the freedom struggle.

Key Points:
 Veer Savarkar was a revolutionary, nationalist leader, and the father of the Hindutva ideology.
 He founded the Abhinav Bharat organization in 1904 to promote armed resistance against British rule.
 He was sentenced to life imprisonment in the Cellular Jail in Port Blair, where he stayed for ten years (1911-1921).
 His prison room in the Cellular Jail is now a significant tourist site.
 Savarkar's contributions to the independence movement and Hindutva ideology are highly regarded in Indian history.
 He wrote several influential works on Indian history, politics, and society during his imprisonment.
Information Booster: Kanhaiya: Refers to Kanhaiya Kumar, a young Indian politician and former student leader, but he is not related to the events or the prison in question. Jai Prakash Narayan: A prominent freedom fighter and political leader, known for leading the 1974-1975 Bihar Movement, but not associated with the Cellular Jail. Anna Hazare: A social activist known for his anti-corruption movement, but not linked to the Cellular Jail or the Nashik Conspiracy Case.
Additional Information:
 Veer Savarkar was instrumental in advocating for complete independence from British rule, a radical demand at the time.
 The Cellular Jail in the Andaman and Nicobar Islands, where Savarkar was imprisoned, was known for its harsh treatment of prisoners.
 Abhinav Bharat Society aimed to inspire and organize young revolutionaries to participate in armed resistance against British colonial rule.
 Hindutva, as conceptualized by Savarkar, focused on unifying Hindus politically and culturally, which later influenced India's political discourse.

Q.25 **Who chose the @ sign for e-mail?**

A. Ray Tomlinson
B. Shiva Ayyadurai
C. Bill Gate
D. Steve Job

Answer: A

Sol:

Ray Tomlinson was the computer engineer who chose the @ sign for email addresses, a symbol that has become iconic in digital communication. In 1971, Tomlinson implemented the first networked email system, allowing messages to be sent between users on different machines. The @ sign was chosen to distinguish the user name from the domain name, a convention that continues to be used in email systems worldwide.
Important Key Points:
1. Ray Tomlinson is credited with inventing the email and choosing the @ sign to separate the user name from the machine (domain) name.
2. The invention of email revolutionized communication, making it possible to send messages across networks.
3. The @ sign is now a universally recognized symbol of digital communication.
4. Tomlinson's work laid the foundation for modern email systems, which are integral to both personal and professional communication.
5. The introduction of email was a significant milestone in the development of the Internet and computer networks.
6. Ray Tomlinson's contribution to technology earned him numerous awards and recognition, including being inducted into the Internet Hall of Fame.
Knowledge Booster:
 Shiva Ayyadurai: Claims to have invented email, but his work is distinct from Tomlinson's widely recognized implementation of networked email.
 Bill Gates: Co-founder of Microsoft, instrumental in the personal computer revolution, but not involved in the creation of email.
 Steve Jobs: Co-founder of Apple Inc., known for innovations in personal computing and mobile devices, but not related to email development.

Q.26 **Amartya Sen was awarded Nobel Prize for:**

A. Chemistry
B. Economics
C. Social Sciences
D. Peace

Answer: B

Sol:

Amartya Sen was awarded the Nobel Prize in Economics in 1998 for his contributions to welfare economics. His work focused on issues of poverty, development, and social justice, particularly in the context of developing countries. Sen introduced concepts such as the "Capability Approach," which assesses economic development by considering individuals' capabilities and well-being rather than just income levels.
Important Key Points:
1. Amartya Sen won the Nobel Prize in Economics in 1998 for his research in welfare economics.
2. His work has had a profound impact on the understanding of poverty, inequality, and development.
3. The Capability Approach developed by Sen emphasizes the importance of freedom and opportunities in assessing human well-being.
4. Sen's ideas have influenced policy-making in areas such as education, healthcare, and social welfare.
5. He is also known for his work on the causes and prevention of famines, highlighting the role of public action and democracy.
6. Amartya Sen's contributions extend beyond economics to philosophy, ethics, and public policy.
Knowledge Booster:
 Chemistry: Unrelated to Sen's work, which is focused on economics and social welfare.
 Social Sciences: While related to his field of study, the specific Nobel Prize awarded was in Economics.
 Peace: Not related to his specific recognition, although his work has contributed to global social justice and equity.

Q.27 **Apart from Bihar, Chhau is also a folk dance of-**

A. West Bengal
B. Mizoram
C. Madhya Pradesh
D. Uttar Pradesh

Answer: A

Sol:

Chhau is a traditional Indian dance form recognized for its vigorous movements, mask-wearing, and martial art elements. This dance is practiced in West Bengal, Bihar, and Odisha. The dance is rooted in folk traditions and is usually performed during festivals like Chaitra Parva. Chhau depicts stories from Indian epics such as the Ramayana and Mahabharata. There are three distinct styles of Chhau: Purulia Chhau (West Bengal), Seraikella Chhau (Jharkhand), and Mayurbhanj Chhau (Odisha).
Important Key Points:
1. Chhau dance is widely performed in West Bengal, Bihar, and Odisha.
2. It involves the use of elaborate masks, which are a distinctive feature of the Purulia style of Chhau from West Bengal.
3. The dance form incorporates movements derived from martial arts, adding to its vigorous nature.
4. Chhau is a narrative dance form, often depicting tales from Hindu mythology and folklore.
5. The dance is performed during significant festivals and is a key part of the cultural heritage of the regions where it is practiced.
6. In 2010, Chhau dance was inscribed on the UNESCO Representative List of the Intangible Cultural Heritage of Humanity.
Knowledge Booster:
 Mizoram: Known for dances like Cheraw (bamboo dance), not related to Chhau.
 Madhya Pradesh: Known for folk dances like Gaur dance and Bhil dance, but not related to Chhau.
 Uttar Pradesh: Famous for dances like Kathak and Raslila, but not associated with Chhau.

Q.28 **Bismillah Khan was famous for playing this instrument-**

A. Violin
B. Veena
C. Sitar
D. Shehnai

Answer: D

Sol:

Ustad Bismillah Khan was famous for playing the Shehnai, a traditional Indian wind instrument. He is credited with bringing the Shehnai to the classical stage and elevating its status in Indian music. Ustad Bismillah Khan was a symbol of India's rich cultural heritage and received numerous awards, including the Bharat Ratna, India's highest civilian honor, in recognition of his contribution to music.

Important Key Points:

1. Ustad Bismillah Khan was a legendary Shehnai player who brought the instrument into the limelight.
2. The Shehnai is often played at weddings and religious ceremonies in India and is associated with auspicious occasions.
3. Ustad Bismillah Khan's performances at the Red Fort on the occasion of India's Independence Day are iconic.
4. He was awarded the Bharat Ratna in 2001, making him one of the few musicians to receive this honor.
5. Bismillah Khan's music transcended religious and cultural boundaries, earning him respect and admiration globally.
6. His legacy continues to inspire generations of musicians, and his contribution to Indian classical music is unparalleled.

Knowledge Booster:

- Violin: A string instrument not related to Bismillah Khan.
- Veena: A plucked string instrument, not associated with Bismillah Khan.
- Sitar: A string instrument famous in Indian classical music, played by maestros like Ravi Shankar, but not related to Bismillah Khan.

Q.29 **This singing style originated in the court of Nawab Wajid Ali Shah:**

A. Qawwali
B. Dadra
C. Thumri
D. Ghazal

Answer: C

Sol:

Thumri is a semi-classical Indian vocal music style that originated in the courts of the Nawabs of Awadh, particularly during the reign of Nawab Wajid Ali Shah in the 19th century. Thumri is known for its romantic and devotional themes, often focusing on the love between Radha and Krishna. The style is characterized by its expressive and lyrical nature, allowing for emotional expression and improvisation by the performer.

Important Key Points:

1. Thumri is a semi-classical vocal music form that originated in the court of Nawab Wajid Ali Shah.
2. It is known for its romantic and devotional themes, often exploring the emotions of love and separation.
3. Thumri emphasizes the expression of emotion, with a focus on the lyrics and the mood of the composition.
4. The genre allows for considerable improvisation, making it a favorite among classical singers for showcasing their creativity.
5. Thumri often incorporates elements of other musical forms, such as Dadra and Kajri.
6. It remains a popular genre in Indian classical music, performed by many renowned artists.

Knowledge Booster:

- Qawwali: A form of Sufi devotional music, not related to Thumri.
- Dadra: A form of light classical music, often performed alongside Thumri but distinct in style.
- Ghazal: A poetic form that can be sung, focusing on themes of love and loss, but different from Thumri in structure and style.

Q.30 **Who founded the "Swaraj Party"?**

A. Motilal Nehru
B. Vallabh Bhai Patel
C. Rabindranath Tagore
D. Veer Savarkar

Answer: A

Sol:

Motilal Nehru co-founded the Swaraj Party in 1923 along with Chittaranjan Das. The party was formed as a response to the non-cooperation movement's suspension by Mahatma Gandhi, with the aim of gaining greater political freedom for India through legislative means. The Swaraj Party sought to enter the British-controlled legislative councils to obstruct government policies and push for self-governance.

Important Key Points:

1. Motilal Nehru and Chittaranjan Das founded the Swaraj Party in 1923.
2. The party aimed to achieve self-governance (Swaraj) by contesting elections to the legislative councils.
3. The Swaraj Party's strategy was to use the councils to resist and reform British colonial rule from within.
4. The party played a crucial role in Indian politics during the 1920s, representing a more confrontational approach to colonial governance.
5. The Swaraj Party's formation marked a split in the Indian National Congress, reflecting differing strategies towards achieving independence.
6. The party eventually merged back into the Congress, but its efforts laid the groundwork for future legislative activism in India's freedom struggle.

Knowledge Booster:

- Vallabh Bhai Patel: A prominent leader in the Indian independence movement, known as the "Iron Man of India," but not a founder of the Swaraj Party.
- Rabindranath Tagore: A renowned poet, philosopher, and social reformer, not associated with the founding of the Swaraj Party.
- Veer Savarkar: An Indian independence activist and writer, known for his revolutionary activities, but not related to the Swaraj Party.

Q.31 **This author/writer now writes in Italian instead of English?**

A. Jhumpa Lahiri
B. Vikram Seth
C. Kiran Desai
D. Arundhati Roy

Answer: A

Sol:

Jhumpa Lahiri, the Pulitzer Prize-winning author of "Interpreter of Maladies," began writing in Italian after mastering the language. Her journey into Italian literature represents a significant shift in her writing career. Lahiri has written several books in Italian, including "In Other Words" and "Dove mi trovo," reflecting her deep connection with the language and culture.

Important Key Points:

1. Jhumpa Lahiri is an acclaimed author known for her works in English but later transitioned to writing in Italian.
2. She learned Italian after moving to Rome and began writing and publishing books in the language.
3. Lahiri's first book in Italian, "In Other Words," explores her journey of learning the language and her experiences in Italy.
4. She has also translated her Italian works into English, bringing her Italian literature to a broader audience.
5. Her move to Italian literature is seen as an exploration of identity and belonging, themes often present in her English-language works.
6. Lahiri's ability to write fluently in two languages demonstrates her versatility and dedication to the craft of writing.

Knowledge Booster:

- Vikram Seth: An Indian author known for his novel "A Suitable Boy," but he continues to write primarily in English.
- Kiran Desai: The author of "The Inheritance of Loss," writing in English, not Italian.
- Arundhati Roy: A Booker Prize-winning author known for "The God of Small Things," writing in English.

Q.32 **The autobiography "The Test of My Life" is of:**

A. Yuvraj
B. Dravid
C. Sachin
D. Dhoni

Answer: A

Sol:

Yuvraj Singh, the celebrated Indian cricketer, authored his autobiography titled "The Test of My Life." The book recounts his battle with cancer, his determination to return to cricket, and the personal struggles he endured during this period. Yuvraj's story is one of resilience and courage, highlighting his journey from being diagnosed with a rare form of cancer to making a successful comeback to the Indian cricket team.

Important Key Points:

1. Yuvraj Singh is a well-known Indian cricketer, famous for his performances in the 2007 T20 World Cup and the 2011 Cricket World Cup.
2. "The Test of My Life" details Yuvraj's fight against a rare form of cancer called mediastinal seminoma.
3. The autobiography covers his emotional and physical challenges during chemotherapy and his determination to return to professional cricket.
4. Yuvraj's story is an inspiration to many, emphasizing the importance of mental toughness and a positive outlook in the face of adversity.
5. The book also discusses the support he received from his family, friends, and fans, which played a crucial role in his recovery.
6. Yuvraj's return to cricket after his recovery was widely celebrated, marking a significant moment in his career and life.

Knowledge Booster:

 Dravid: Refers to Rahul Dravid, another legendary Indian cricketer, who has not authored a book on his life.
 Sachin: Refers to Sachin Tendulkar, who authored his autobiography titled "Playing It My Way."
 Dhoni: Refers to MS Dhoni, the former Indian cricket captain, who has not written an autobiography.

Q.33 **Tropic of Cancer does not pass through the middle of this state:**

A. Bihar
B. Chhattisgarh
C. Jharkhand
D. Tripura

Answer: A

Sol:

The Tropic of Cancer does not pass through Bihar. The Tropic of Cancer is an imaginary line located at 23.5° North latitude. In India, it passes through eight states: Gujarat, Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, West Bengal, Tripura, and Mizoram. Bihar is located further north of this line, hence it does not intersect with the Tropic of Cancer.

Important Key Points:

1. The Tropic of Cancer is a significant latitude that marks the northernmost point where the sun can be directly overhead.
2. In India, the Tropic of Cancer passes through eight states but Bihar is not one of them.
3. Bihar is located to the north of the Tropic of Cancer and is known for its historical and cultural significance.
4. The states through which the Tropic of Cancer passes experience distinct climatic conditions due to their proximity to the tropics.
5. Knowledge of the Tropic of Cancer is important for understanding geographical and climatic patterns in India.
6. The Tropic of Cancer plays a role in determining the distribution of sunlight and temperature in the regions it crosses.

Knowledge Booster:

 Chhattisgarh: A state in central India through which the Tropic of Cancer passes.
 Jharkhand: Another state that the Tropic of Cancer crosses.
 Tripura: A northeastern state in India, also intersected by the Tropic of Cancer.

Q.34 **What is the Brahmaputra river called in Bangladesh?**

A. Padma
B. Jamuna
C. Dihang
D. Bhima

Answer: B

Sol:

In Bangladesh, the Brahmaputra River is known as the Jamuna. The river flows from Tibet through India and enters Bangladesh, where it merges with the Ganges and Meghna rivers before emptying into the Bay of Bengal. The Jamuna is a major river system in Bangladesh and plays a critical role in the country's agriculture, economy, and transportation.

Important Key Points:

1. The Brahmaputra River is one of the major rivers in Asia, flowing through Tibet, India, and Bangladesh.
2. In Bangladesh, the Brahmaputra is called the Jamuna after it enters the country.
3. The Jamuna River is crucial for Bangladesh's agriculture, providing water for irrigation and supporting the fertile plains of the region.
4. The river is also important for transportation and fishing, contributing to the livelihood of millions of people in Bangladesh.
5. The Jamuna is prone to seasonal flooding, which can have both positive and negative impacts on the surrounding areas.
6. The Brahmaputra-Jamuna river system is one of the largest in the world, with significant cultural, economic, and ecological importance.

Knowledge Booster:

 Padma: The name given to the Ganges River in Bangladesh.
 Dihang: The name of the Brahmaputra River in the upper reaches in Arunachal Pradesh, India.
 Bhima: A river in southern India, not related to the Brahmaputra or Jamuna.

Q.35 **Which part of the Indian constitution deals with the policy-directing elements for the state?**

A. I
B. II
C. III
D. IV

Answer: D

Sol:

Part IV of the Indian Constitution deals with the Directive Principles of State Policy. These principles are guidelines for the government to frame policies and laws aimed at ensuring social and economic welfare, justice, and a better standard of living for the people. Although they are non-justiciable, meaning they cannot be enforced by the courts, the Directive Principles are fundamental in the governance of the country.

Important Key Points:

1. Part IV of the Indian Constitution outlines the Directive Principles of State Policy.
2. These principles are non-justiciable but serve as important guidelines for the government in policymaking.
3. The Directive Principles aim to create social and economic conditions under which citizens can lead a good life.
4. They cover a wide range of issues, including social welfare, economic equity, education, and the environment.
5. The principles are inspired by the Irish Constitution and were included to establish a welfare state in India.
6. Although not enforceable by law, they are considered essential for the governance of the country and are often used to guide legislative and executive actions.

Knowledge Booster:

 Part I: Deals with the Union and its territory.
 Part II: Concerns citizenship in India.
 Part III: Pertains to Fundamental Rights, which are enforceable by the courts.

Q.36 **Which schedule of the Indian Constitution deals with languages?**

A. 4
B. 8
C. 10
D. 12

Answer: B

Sol:

The Eighth Schedule of the Indian Constitution deals with the official languages recognized by the Indian government. Originally, the Eighth Schedule listed 14 languages, but it has since been expanded to include 22 languages. The languages listed in this schedule are given special recognition and are used for official purposes such as parliamentary proceedings, judiciary, and administration.

Important Key Points:

1. The Eighth Schedule of the Indian Constitution lists the official languages recognized by the government.
2. Originally, the Eighth Schedule included 14 languages, which has now expanded to 22 languages.
3. The languages in the Eighth Schedule are used for official government communication and are recognized for their cultural and historical significance.
4. The inclusion of languages in the Eighth Schedule ensures their preservation and promotion by the government.
5. Languages such as Hindi, Bengali, Tamil, Telugu, and others are part of this schedule.
6. The recognition of these languages helps in maintaining India's linguistic diversity and promoting the use of regional languages in governance.

Knowledge Booster:

- 4th Schedule: Relates to the allocation of seats in the Rajya Sabha (Council of States).
- 10th Schedule: Deals with the anti-defection law in the Indian political system.
- 12th Schedule: Relates to the powers, authority, and responsibilities of municipalities.

Q.37 **For how many years was Dr. Rajendra Prasad the President?**

A. 6
B. 8
C. 12
D. 5

Answer: C

Sol:

Dr. Rajendra Prasad served as the President of India for 12 years, from 1950 to 1962. He was the first President of India and is the only person to have held the office for two terms. His tenure as President is the longest in Indian history, and he played a crucial role in guiding the newly independent nation through its formative years.

Important Key Points:

1. Dr. Rajendra Prasad was the first President of India, serving from 1950 to 1962.
2. He was elected as the President for two consecutive terms, making his tenure the longest in Indian history.
3. Dr. Prasad was a close associate of Mahatma Gandhi and played a significant role in the Indian independence movement.
4. As President, he oversaw the adoption of the Indian Constitution and the establishment of democratic institutions in India.
5. Dr. Prasad was known for his simplicity, humility, and dedication to public service.
6. His leadership during the early years of India's independence was instrumental in shaping the nation's political and social landscape.

Knowledge Booster:

- 6 years: Represents the typical tenure of a single term for the President of India.
- 8 years: Refers to a two-term presidency under special circumstances, but not applicable to Dr. Prasad.
- 5 years: The length of a single term for the President of India, but Dr. Prasad served for two terms.

Q.38 **The source of the presidential election system in the Indian Constitution is the Constitution of country.**

A. Germany
B. England
C. Ireland
D. Japan

Answer: C

Sol:

The system of presidential elections in India is modeled after the Constitution of Ireland. In India, the President is elected by an electoral college, which includes elected members of both houses of Parliament as well as the elected members of the Legislative Assemblies of States and Union territories. This system ensures a balance of representation across the country, reflecting the federal nature of India's political system.

Important Key Points:

1. The electoral college system for presidential elections in India is inspired by the Irish model.
2. The President of India is elected indirectly by an electoral college, ensuring representation from both the central and state governments.
3. The Indian Constitution borrowed this system from Ireland to ensure a broad-based consensus in the election of the Head of State.
4. This system reflects India's federal structure, balancing the powers between the Union and the States.
5. The Irish Constitution itself was influenced by the democratic systems of other nations, including the United States.
6. The President's role in India is largely ceremonial, but the method of election ensures the office's dignity and impartiality.

Knowledge Booster:

- Germany: The German President is elected by a Federal Convention, which is a unique system not directly related to the Indian or Irish models.
- England: The UK does not have a President; it has a constitutional monarchy with the Prime Minister as the head of government.
- Japan: Japan has a parliamentary system with an Emperor as the ceremonial figurehead, not a President.

Q.39 **How many members of Lok Sabha are nominated by the President?**

A. 2
B. 3
C. 10
D. 0

Answer: A

Sol:

The President of India nominates two members to the Lok Sabha to represent the Anglo-Indian community. This provision was included in the Constitution to ensure that the Anglo-Indian community, which is a small minority in India, had representation in the Parliament. However, this provision was abolished by the 104th Constitutional Amendment Act in 2019, which removed the reservation of seats for the Anglo-Indian community in the Lok Sabha.

Important Key Points:

1. Two members were historically nominated by the President of India to the Lok Sabha to represent the Anglo-Indian community.
2. This provision was meant to ensure minority representation in the lower house of Parliament.
3. The Anglo-Indian community is a small, distinct community in India, with a rich cultural heritage.
4. The nomination of these members was a unique feature of the Indian parliamentary system, reflecting its commitment to inclusive representation.
5. The 104th Amendment Act of 2019 abolished this nomination, reflecting changing demographic and political considerations.
6. The nominated members were often involved in discussions on issues affecting minority communities and brought their perspectives to national debates.

Knowledge Booster:

- 3 members: This refers to the President's power to nominate members to the Rajya Sabha to represent literature, science, art, and social service, not the Lok Sabha.
- 10 members: Refers to the Rajya Sabha nominations by the President, not the Lok Sabha.
- 0 members: Post-2019, no Anglo-Indian members are nominated, but historically, two members were nominated until the amendment.

Q.40 **Who presented the Sarvodaya scheme to the government in 1950?**

A. Vinoba Bhave
B. Anna Hazare
C. Jai Prakash Narayan
D. Lal Bahadur Shastri

Answer: C

Sol:

The correct answer is (c) Jai Prakash Narayan.
Jai Prakash Narayan, a prominent Indian independence activist and political leader, presented the Sarvodaya scheme to the government in 1950. The scheme was deeply inspired by Gandhian principles and the Sarvodaya idea of Vinoba Bhave. The Sarvodaya plan focused on the holistic development of all sections of society, emphasizing self-reliance, rural development, and the promotion of agriculture, small-scale industries, and cottage industries. It encouraged minimal dependence on foreign capital and technology, highlighting the importance of self-sufficiency and sustainable economic growth. Some of the ideas of the Sarvodaya plan were later incorporated into the Indian government's five-year plans, particularly in relation to rural development and agricultural self-reliance.
Key Points:
 Jai Prakash Narayan presented the Sarvodaya scheme in 1950.
 The scheme was inspired by Gandhian philosophy and Vinoba Bhave's Sarvodaya movement.
 It focused on self-reliance, rural development, agriculture, and cottage industries.
 The Sarvodaya scheme discouraged dependence on foreign capital and technology.
 Its core ideas were aligned with the vision of decentralized and sustainable economic development.
 Some elements of the Sarvodaya scheme were later integrated into India's five-year plans.
Information Booster: Vinoba Bhave: A close associate of Mahatma Gandhi, known for the Bhoodan movement, but he did not present the Sarvodaya scheme in 1950. Anna Hazare: A contemporary Indian social activist, famous for his anti-corruption movements, but not involved with the Sarvodaya scheme. Lal Bahadur Shastri: Former Prime Minister of India, known for his focus on agriculture and the slogan "Jai Jawan Jai Kisan," but he was not related to the presentation of the Sarvodaya scheme.
Additional Information:
 Gandhian Plan (1944): Formulated by Shriman Narayan Agarwal, it emphasized self-sufficiency and small-scale industries as the backbone of India's economy.
 Bombay Plan (1944-45): Formulated by J.R.D. Tata, Purshotamdas Thakurdas, and G.D. Birla, it supported industrialization and investment in heavy industries.
 People's Plan (1945): Formulated by M.N. Roy, it advocated for state-led economic development and socialism.

Q.41 **It shares the least terrestrial share with India,**

A. Bangladesh
B. China
C. Pakistan
D. Myanmar

Answer: D

Sol:

Myanmar shares the least terrestrial boundary with India among the neighboring countries listed. India shares long land borders with Bangladesh, China, and Pakistan, but its border with Myanmar is relatively shorter, though still significant at about 1,643 kilometers. The border with Myanmar is important for trade and cultural exchanges, particularly in the northeastern states of India.
Important Key Points:
1. Myanmar shares a land boundary of approximately 1,643 kilometers with India, which is the shortest among India's major neighbors.
2. The India-Myanmar border is strategically important, particularly for the northeastern states of India, which rely on cross-border trade.
3. The border is also significant for cultural exchanges between the communities living on both sides, who share ethnic and cultural ties.
4. India’s borders with Bangladesh, China, and Pakistan are longer and more contentious in terms of security and geopolitics.
5. The India-Myanmar border region is also a focus for development projects, aimed at enhancing connectivity and economic cooperation between the two countries.
6. Despite being shorter, the Myanmar border is critical for India’s Act East policy, which aims to strengthen ties with Southeast Asia.
Knowledge Booster:
 Bangladesh: Shares a 4,096-kilometer-long border with India, the longest among all neighboring countries.
 China: Shares a 3,488-kilometer-long border with India, involving significant strategic and security considerations.
 Pakistan: Shares a 3,323-kilometer-long border with India, marked by historical tensions and conflicts.

Q.42 **At present the foreign direct investment limit for railway infrastructure is_.**

A. 50%
B. 75%
C. 100%
D. 0%

Answer: C

Sol:

The foreign direct investment (FDI) limit for railway infrastructure in India is 100%. This policy was introduced to attract more private sector participation and foreign investment in India’s railway sector, which is one of the largest in the world. The move is part of broader economic reforms aimed at modernizing the railway infrastructure, improving efficiency, and expanding capacity.
Important Key Points:
1. 100% FDI is allowed in the railway infrastructure sector in India, under the automatic route.
2. This policy is part of the government's efforts to modernize the railway network and attract foreign investment in high-speed trains, railway electrification, signaling systems, and passenger terminals.
3. The FDI policy is expected to bring in advanced technology, improve efficiency, and increase the competitiveness of Indian Railways.
4. Allowing 100% FDI also facilitates joint ventures between Indian and foreign companies, contributing to infrastructure development.
5. The move aims to enhance passenger and freight capacity, reduce travel time, and improve the overall quality of services.
6. The policy aligns with the government's broader economic reform agenda, including initiatives like "Make in India" and "Digital India."
Knowledge Booster:
 50%: A lower limit, not applicable to railway infrastructure, though it may apply to other sectors.
 75%: Incorrect, as the FDI limit in railways is 100%.
 0%: Refers to sectors where FDI is not allowed, but railway infrastructure is open to full foreign investment.

Q.43 **determines the income inequality of the people of a country.**

A. Lorenz Curve
B. Minhas Curve
C. Jaitley Curve
D. Chidambaram Curve

Answer: A

Sol:

The Lorenz Curve is a graphical representation that illustrates the distribution of income or wealth within a population. It compares the cumulative share of income earned by the poorest x% of the population to a perfectly equal distribution. The further the curve lies below the line of equality (a 45-degree line), the greater the level of inequality. This curve is a fundamental tool in economics for analyzing income distribution and is often used to calculate the Gini coefficient, a measure of inequality.
Important Key Points:
1. The Lorenz Curve is widely used in economics to measure and visualize income or wealth inequality.
2. It plots the cumulative percentage of total income received by different segments of the population, starting from the poorest.
3. A perfectly equal distribution would result in the Lorenz Curve being a straight diagonal line (line of equality).
4. The Gini coefficient, derived from the Lorenz Curve, quantifies income inequality, with 0 representing perfect equality and 1 representing perfect inequality.
5. The Lorenz Curve can be applied to various distributions beyond income, such as wealth, land ownership, or other resources.
6. This curve is a key tool in policy-making, helping to assess the impact of economic policies on income distribution.
Knowledge Booster:
 Minhas Curve: Not a standard term in economics; it could be a confusion with other economic concepts.
 Jaitley Curve: No recognized concept in economics; likely a fictional or misrepresented term.
 Chidambaram Curve: Also not a recognized economic concept; likely a confusion with other economic terms.

Q.44 **When was the National Highway Scheme started?**

A. 1948
B. 1975
C. 1995
D. 2001

Answer: C

Sol:

The National Highway Development Project (NHDP) in India was launched in 1995. This ambitious project aimed to expand and upgrade the national highway network across the country, significantly improving connectivity and supporting economic growth. The NHDP includes the Golden Quadrilateral, North-South and East-West corridors, and several other projects aimed at enhancing road infrastructure in India.

Important Key Points:

1. The National Highway Development Project (NHDP) was initiated in 1995 to modernize and expand India's national highways.
2. The project includes the construction and upgrading of highways across the country, including major corridors like the Golden Quadrilateral.
3. The NHDP was instrumental in improving road connectivity between major cities and economic hubs, boosting trade and commerce.
4. The project is one of the largest infrastructure initiatives undertaken by the Indian government, significantly impacting the transportation sector.
5. The improved highway network under the NHDP has reduced travel time, improved safety, and facilitated the movement of goods and people across the country.
6. The NHDP is part of a broader effort to enhance India's infrastructure, making it more competitive and integrated with the global economy.

Knowledge Booster:

 1948: This predates the modern highway development initiatives and refers to the early post-independence period.
 1975: A period of infrastructure growth, but not related to the launch of the NHDP.
 2001: Significant for other infrastructure projects, but the NHDP was already underway by this time.

Q.45 **What is the Yellow Revolution related to?**

A. Pulses
B. Oilseeds
C. Sunflower
D. Fish

Answer: B

Sol:

The Yellow Revolution refers to the increase in the production of oilseeds in India, particularly during the late 1980s and early 1990s. The revolution aimed at making India self-sufficient in edible oil production. The initiative was part of a broader strategy to boost agricultural production in India, similar to the Green Revolution (focused on cereals) and the White Revolution (focused on milk).

Important Key Points:

1. The Yellow Revolution was focused on increasing the production of oilseeds in India, such as mustard, soybean, sunflower, and groundnut.
2. This initiative aimed at reducing India's dependence on imported edible oils by boosting domestic production.
3. The success of the Yellow Revolution contributed to India's agricultural diversification and self-reliance in edible oils.
4. Key strategies included the adoption of improved seed varieties, better irrigation practices, and the use of modern agricultural techniques.
5. The Yellow Revolution also involved the promotion of oilseed processing industries, adding value to the agricultural produce.
6. The increase in oilseed production has had a positive impact on the livelihoods of farmers and the agricultural economy in India.

Knowledge Booster:

 Pulses: Associated with the Blue Revolution, which focused on increasing pulse production.
 Sunflower: A type of oilseed; while part of the Yellow Revolution, the term refers broadly to oilseed production.
 Fish: Associated with the Blue Revolution, focusing on aquaculture and fisheries, not the Yellow Revolution.

Q.46 **What percentage of coffee produced in India is exported?**

A. ~ 20
B. ~ 70
C. ~ 10
D. ~ 50

Answer: B

Sol:

Approximately 70% of the coffee produced in India is exported, making India one of the leading exporters of coffee in the world. Indian coffee is known for its distinct taste and is primarily grown in the southern states of Karnataka, Kerala, and Tamil Nadu. The coffee grown in India is mainly of two types: Arabica and Robusta, with Arabica being preferred in international markets.

Important Key Points:

1. India is a major exporter of coffee, with around 70% of its production being exported to various countries.
2. The primary coffee-growing regions in India are in the southern states of Karnataka, Kerala, and Tamil Nadu.
3. Indian coffee is renowned for its unique flavor, often attributed to the specific climatic conditions and cultivation methods.
4. Arabica and Robusta are the two main types of coffee grown in India, with Arabica being more favored for export due to its superior quality.
5. Indian coffee is exported to several countries, including European nations, the United States, and Japan.
6. The coffee industry plays a significant role in the economy of the coffee-growing regions, providing employment and contributing to rural development.

Knowledge Booster:

 ~ 20%: A lower percentage that does not reflect the actual export levels of Indian coffee.
 ~ 10%: Incorrect, as the majority of Indian coffee is exported.
 ~ 50%: Also lower than the actual export figure of around 70%.

Q.47 **Durgapur Steel Plant was established with the help of_.**

A. Germany
B. America
C. England
D. Norway

Answer: C

Sol:

The Durgapur Steel Plant was established with the help of the United Kingdom (England). It is one of the integrated steel plants under the Steel Authority of India Limited (SAIL) and was set up in the late 1950s as part of India’s second Five-Year Plan. The plant was designed and constructed with British assistance and technology and played a key role in India’s industrial development.

Important Key Points:

1. The Durgapur Steel Plant was set up with the assistance of the United Kingdom, reflecting the close industrial ties between the two countries post-independence.
2. The plant was established during the second Five-Year Plan (1956-1961) as part of India's efforts to build a strong industrial base.
3. Durgapur Steel Plant is one of the major steel producers in India, contributing significantly to the country's steel output.
4. The plant was designed using British technology, and its establishment marked a major step in India's industrialization journey.
5. Over the years, Durgapur Steel Plant has undergone several expansions and modernizations to increase its capacity and efficiency.
6. The plant has played a crucial role in the economic development of the Durgapur region, providing employment and supporting ancillary industries.

Knowledge Booster:

 Germany: Assisted in the establishment of the Rourkela Steel Plant, not Durgapur.
 America: Assisted in setting up the Bokaro Steel Plant.
 Norway: Not associated with the establishment of major steel plants in India.

Q.48 **In which year budget was GST first mentioned?**

A. 2006-07
B. 2013-14
C. 1998-99
D. 2015-16

Answer: A

Sol:

The Goods and Services Tax (GST) was first proposed in India during the 2006-07 budget speech by the then Finance Minister P. Chidambaram. This tax reform aimed to create a single unified market by replacing the multiple indirect taxes levied by both the central and state governments. GST was envisioned to simplify the tax structure, reduce tax evasion, and improve the efficiency of tax collection. It was eventually implemented on July 1, 2017.

Important Key Points:

1. GST was first proposed in the 2006-07 budget, marking the beginning of a significant tax reform process in India.
2. The goal of GST was to unify the country's indirect tax system by replacing taxes such as VAT, service tax, and excise duty.
3. The implementation of GST was intended to reduce the cascading effect of taxes and create a seamless national market.
4. GST was eventually launched on July 1, 2017, after extensive consultations and legislative processes.
5. The GST reform has been pivotal in enhancing transparency, improving compliance, and boosting economic growth in India.
6. GST is divided into different slabs (5%, 12%, 18%, and 28%) and applies to both goods and services across the country.

Knowledge Booster:

 2013-14: Refers to the period when GST was actively being debated and the groundwork was being laid for its implementation.
 1998-99: Pre-dates the initial discussions on GST, focusing on other economic reforms.
 2015-16: This period involved significant legislative activity related to GST, leading up to its eventual rollout in 2017.

Q.49 **What was the name of the State Bank of India before nationalisation?**

A. Imperial Bank Of India
B. Company Bank Of India
C. Bank Of Madras
D. Bank of Bombay

Answer: A

Sol:

Before its nationalization in 1955, the State Bank of India (SBI) was known as the Imperial Bank of India. The Imperial Bank of India was established in 1921 through the amalgamation of three presidency banks—Bank of Calcutta, Bank of Bombay, and Bank of Madras. Post-nationalization, it was renamed the State Bank of India, becoming the largest bank in India, with a focus on serving the needs of the rural and semi-urban population.

Important Key Points:

1. The State Bank of India (SBI) was originally known as the Imperial Bank of India before its nationalization in 1955.
2. The Imperial Bank of India was formed in 1921 by merging the Bank of Calcutta, Bank of Bombay, and Bank of Madras.
3. After nationalization, SBI became India's largest commercial bank, playing a crucial role in the country's financial system.
4. SBI was tasked with extending banking services to rural and semi-urban areas, supporting India's development objectives.
5. The nationalization of SBI was part of a broader effort to ensure that the banking system served the public interest, particularly in underserved regions.
6. Today, SBI continues to be a major player in the Indian banking sector, with a vast network of branches and a significant customer base.

Knowledge Booster:

 Company Bank of India: Not a historically significant entity in Indian banking history.
 Bank of Madras: One of the presidency banks that merged to form the Imperial Bank of India.
 Bank of Bombay: Another presidency bank that was merged to form the Imperial Bank of India.

Q.50 **We are in the middle of this five year plan:**

A. 9th
B. 12th
C. 13th
D. 7th

Answer: B

Sol:

India was in the midst of its 12th Five-Year Plan during the period from 2012 to 2017. The Five-Year Plans were centralized economic and social development initiatives, launched after India's independence to guide the country's economic growth. The 12th Plan focused on "Faster, Sustainable, and More Inclusive Growth" and aimed at achieving higher growth rates while ensuring that the benefits of growth were shared across all sections of society.

Important Key Points:

1. The 12th Five-Year Plan covered the period from 2012 to 2017, emphasizing sustainable and inclusive growth.
2. The plan aimed at achieving an average annual growth rate of 8%, with a focus on sectors like agriculture, manufacturing, and infrastructure.
3. Key objectives included reducing poverty, improving education and healthcare, and enhancing the social safety net for vulnerable populations.
4. The plan also focused on environmental sustainability, promoting the efficient use of resources and clean energy.
5. The 12th Plan was the last of India's Five-Year Plans, as the government transitioned to a different planning approach after 2017.
6. The Five-Year Plans played a significant role in shaping India's economic policies and development trajectory post-independence.

Knowledge Booster:

 9th Plan: Covered the period from 1997 to 2002, focusing on growth with social justice and equity.
 13th Plan: India did not have a 13th Five-Year Plan, as the government moved away from this planning model.
 7th Plan: Covered the period from 1985 to 1990, emphasizing rapid industrialization and agricultural growth.

Q.51 **What are eznymes basically?**

A. Fat
B. Sugar
C. Protein
D. Vitamins

Answer: C

Sol:

Enzymes are primarily composed of proteins. They act as biological catalysts, speeding up chemical reactions in the body without being consumed in the process. Each enzyme is specific to a particular reaction or type of reaction, and its function is determined by its unique three-dimensional structure, which is made up of amino acids (the building blocks of proteins).

Important Key Points:

1. Enzymes are proteins that catalyze biochemical reactions in living organisms.
2. They are essential for various physiological processes, including digestion, metabolism, DNA replication, and cellular respiration.
3. The structure of an enzyme determines its specificity, meaning it can only catalyze specific reactions or act on specific substrates.
4. Enzymes lower the activation energy required for reactions, thereby increasing the reaction rate.
5. They operate under optimal conditions of temperature and pH, with deviations from these conditions potentially leading to enzyme denaturation and loss of function.
6. Enzymes are critical in both medical and industrial applications, such as in the production of antibiotics, detergents, and food processing.

Knowledge Booster:

 Fat: Enzymes are not composed of fats, though fats are substrates for certain enzymes like lipases.
 Sugar: While sugars are substrates for enzymes like amylases, enzymes themselves are not made of sugars.
 Vitamins: Enzymes are not made of vitamins, though vitamins often act as coenzymes or cofactors that assist enzymes in their function.

Q.52 **What does a patient of myopia need to get rid of it?**

A. Concave lens
B. Convex lens
C. Biconvex lens
D. Lens transplant

Answer: A

Sol:

A person with myopia (nearsightedness) needs a concave lens to correct their vision. Myopia occurs when the eye's lens focuses light in front of the retina instead of directly on it, making distant objects appear blurry. A concave lens diverges light rays before they enter the eye, helping them focus on the retina and improving distance vision.

Important Key Points:

1. Myopia is a common vision condition where distant objects appear blurry while close objects can be seen clearly.
2. It is caused by the elongation of the eyeball or excessive curvature of the cornea, leading to light focusing in front of the retina.
3. A concave lens (also known as a diverging lens) is used to correct myopia by spreading out light rays before they reach the eye, allowing them to focus on the retina.
4. The lens prescription for a concave lens is measured in negative diopters, which indicates the lens's power.
5. Concave lenses are typically used in glasses or contact lenses to correct myopia.
6. Myopia can also be corrected through surgical procedures like LASIK, which reshapes the cornea to improve focus.

Knowledge Booster:

 Convex lens: Used to correct hyperopia (farsightedness), where the lens focuses light behind the retina.
 Biconvex lens: A type of convex lens, used for hyperopia, not myopia.
 Lens transplant: Refers to surgical replacement of the eye's lens, often used to treat cataracts, not myopia.

Q.53 **Relative humidity is measured by?**

A. Hydrometer
B. Hygrometer
C. Lactometer
D. Potentiometer

Answer: B

Sol:

Relative humidity is measured using a hygrometer. A hygrometer is a device that quantifies the amount of moisture in the air. Relative humidity is a critical factor in determining weather conditions, human comfort, and the efficiency of various industrial processes. It is expressed as a percentage of the total amount of moisture the air can hold at a given temperature.

Important Key Points:

1. A hygrometer is an instrument used specifically to measure the relative humidity in the atmosphere.
2. Relative humidity indicates how much moisture the air contains compared to the maximum it can hold at a particular temperature.
3. Hygrometers are used in weather stations, homes, and industries where moisture control is essential.
4. There are various types of hygrometers, including digital, mechanical, and psychrometric hygrometers.
5. Maintaining optimal relative humidity is crucial in industries such as food processing, pharmaceuticals, and electronics manufacturing.
6. High relative humidity can make conditions feel warmer than they are, affecting comfort levels, while low humidity can lead to dry skin and respiratory discomfort.

Knowledge Booster:

 Hydrometer: An instrument used to measure the density or specific gravity of liquids, not related to humidity.
 Lactometer: A device used to measure the purity or specific gravity of milk, not related to humidity.
 Potentiometer: An instrument used to measure electric potential (voltage), unrelated to humidity measurement.

Q.54 **Which light has the shortest wavelength?**

A. Red
B. Yellow
C. Blue
D. Violet

Answer: D

Sol:

Violet light has the shortest wavelength in the visible spectrum, typically ranging from about 380 to 450 nanometers. The shorter the wavelength, the higher the energy of the light. This is why violet light, and its even shorter-wavelength cousin, ultraviolet (UV) light, carries more energy and can cause more damage to materials and biological tissues compared to other colors.

Important Key Points:

1. Violet light has the shortest wavelength in the visible spectrum, around 380-450 nanometers.
2. Shorter wavelengths correspond to higher energy; hence, violet light is more energetic than red, orange, yellow, green, and blue light.
3. Ultraviolet (UV) light has an even shorter wavelength than violet light, which is why it is not visible to the human eye and can cause sunburns.
4. Violet light is at the extreme end of the visible spectrum, bordering on the ultraviolet range.
5. The colors of the visible spectrum are arranged according to their wavelengths, with red having the longest and violet having the shortest.
6. Understanding the wavelength and energy of different colors of light is important in fields such as optics, astronomy, and medicine.

Knowledge Booster:

 Red: Has the longest wavelength in the visible spectrum, around 620-750 nanometers.
 Yellow: Falls in the mid-range of the visible spectrum with a wavelength around 570-590 nanometers.
 Blue: Has a shorter wavelength than yellow and red but longer than violet, typically around 450-495 nanometers.

Q.55 **What is the unit of work?**

A. Joule
B. Neutron
C. Watt
D. Dine

Answer: A

Sol:

The Joule is the unit of work in the International System of Units (SI). Work is defined as the energy transferred when a force is applied over a distance. One joule is equivalent to one newton-meter, meaning that one joule of work is done when a force of one newton is applied over a distance of one meter.

Important Key Points:

1. Joule (J) is the SI unit of work, energy, and heat.
2. Work is calculated by the formula W = F × d, where W is work, F is the force applied, and d is the distance over which the force is applied.
3. One joule is equivalent to the work done by a force of one newton moving an object one meter in the direction of the force.
4. The joule is also used to measure energy in various forms, including mechanical, electrical, and thermal energy.
5. The concept of work and energy is fundamental in physics, particularly in mechanics and thermodynamics.
6. Other related units include the Newton (N) for force and Watt (W) for power, where 1 watt equals 1 joule per second.

Knowledge Booster:

 Neutron: A subatomic particle found in the nucleus of an atom, not a unit of work.
 Watt: A unit of power, not work; 1 watt equals 1 joule per second.
 Dine: Likely a misspelling or confusion with Dyne, which is a unit of force in the CGS system, not used for work.

Q.56 **Whose unit is light year?**

A. Distance
B. Time
C. Age
D. Light intensity

Answer: A

Sol:

A light year is a unit of distance, not time or age. It represents the distance that light travels in one year in a vacuum. Since light travels at approximately 299,792 kilometers per second (about 186,282 miles per second), one light year is about 9.46 trillion kilometers (about 5.88 trillion miles). This unit is commonly used in astronomy to express distances between stars and galaxies.

Important Key Points:

1. A light year is a measure of distance, specifically how far light travels in one year in a vacuum.
2. The speed of light is about 299,792 kilometers per second, making one light year roughly 9.46 trillion kilometers.
3. Light years are used in astronomy to measure the vast distances between celestial objects like stars, planets, and galaxies.
4. For example, the nearest star to Earth, Proxima Centauri, is about 4.24 light years away.
5. The concept of a light year helps astronomers communicate the scale of the universe in comprehensible terms.
6. Understanding light years is crucial for studying the universe's structure, age, and the speed at which cosmic objects move.

Knowledge Booster:

 Time: Measured in seconds, minutes, hours, etc., but not related to the light year, which measures distance.
 Age: Refers to the duration something has existed, not a unit of distance.
 Light intensity: Measured in units like lumens or candelas, not related to the light year.

Q.57 **Which is not an electromagnetic wave?**

A. Radio
B. Infrared
C. Sound
D. Ultraviolet

Answer: C

Sol:

Sound is not an electromagnetic wave. It is a mechanical wave that travels through a medium (such as air, water, or solids) by vibrating the particles in that medium. Electromagnetic waves, on the other hand, can travel through a vacuum and do not require a medium. Examples of electromagnetic waves include radio waves, infrared, ultraviolet, X-rays, and light waves.

Important Key Points:

1. Sound is a mechanical wave, meaning it requires a medium (like air, water, or solids) to propagate.
2. Electromagnetic waves (such as light, radio waves, and X-rays) can travel through a vacuum without the need for a medium.
3. Sound waves are longitudinal waves, where the particles of the medium move parallel to the direction of wave propagation.
4. In contrast, electromagnetic waves are transverse waves, with electric and magnetic fields oscillating perpendicular to the direction of wave travel.
5. The speed of sound depends on the medium, being fastest in solids, slower in liquids, and slowest in gases.
6. Understanding the differences between mechanical and electromagnetic waves is essential in fields like physics, communication, and engineering.

Knowledge Booster:

 Radio: An example of an electromagnetic wave used in communication technologies.
 Infrared: Another type of electromagnetic wave, associated with heat and thermal imaging.
 Ultraviolet: Electromagnetic radiation with a wavelength shorter than visible light, associated with sunburns and sterilization.

Q.58 **What will be the value of Planck's constant in joules second?**

A. 6.63×10^{34}
B. 16.63×10^{-34}
C. 6.36×10^{-34}
D. 6.63×10^{-34}

Answer: D

Sol:

Planck's constant (h) is a fundamental constant in quantum mechanics that is used to relate the energy of a photon to its frequency. The value of Planck's constant is approximately 6.63×10^{-34} joules per second (J·s). This constant is crucial in the field of quantum physics, especially in understanding the quantization of energy and the behavior of particles at atomic and subatomic levels.

Important Key Points:

1. Planck's constant is a key constant in quantum mechanics with a value of 6.63×10^{-34} J·s.
2. It is used in the equation $E = h\nu$, where E is the energy of a photon, h is Planck's constant, and ν (nu) is the frequency of the photon.
3. Planck's constant signifies the smallest possible amount of energy that can be absorbed or emitted as electromagnetic radiation.
4. This constant laid the foundation for the development of quantum mechanics and the concept of quantized energy levels.
5. Planck's work in this area earned him the Nobel Prize in Physics in 1918, as it was critical in explaining blackbody radiation.
6. Understanding Planck's constant is essential for studies in quantum physics, especially in the fields of photonics, atomic physics, and quantum computing.

Knowledge Booster:

 6.63×10^{34}: Incorrect by the sign; Planck's constant is a very small number, not large.
 16.63×10^{-34}: Incorrect value; the correct value is approximately 6.63×10^{-34}.
 6.36×10^{-34}: Close but incorrect; the precise value is 6.63×10^{-34}.

Q.59 **From which part of the turmeric plant is it obtained?**

A. Stem
B. Root
C. Fruit
D. Flower

Answer: A

Sol:

The correct answer is (a) Stem.

Turmeric is obtained from the stem part of the plant, specifically the rhizome, which is an underground stem. Rhizomes are modified stems that grow horizontally underground and are capable of producing new shoots and roots. Turmeric (Curcuma longa) belongs to the ginger family and is native to the Indian subcontinent and Southeast Asia. The rhizome is harvested, boiled, dried, and then ground into the well-known turmeric powder, which is widely used in cooking, medicine, and cosmetics. The powder has a distinct hot, bitter, and peppery flavor.

Key Points:

 Turmeric is obtained from the rhizome (underground stem) of the plant.
 The plant is perennial and herbaceous, native to India and Southeast Asia.
 The rhizomes are processed into turmeric powder, used for culinary, medicinal, and cosmetic purposes.
 Turmeric has significant anti-inflammatory and antioxidant properties.
 The rhizome is rich in curcumin, the compound responsible for its bright yellow color and health benefits.
 The turmeric plant is part of the ginger family, with a similar growth structure.

Information Booster: Root: Includes vegetables like carrots, turnips, and sweet potatoes, but turmeric is not derived from the root. Fruit: Refers to the reproductive part of a plant, such as apples or berries, which is not where turmeric comes from. Flower: In plants, flowers are responsible for reproduction, but turmeric is obtained from the rhizome, not the flower.

Additional Information:

 Rhizomes are not only found in turmeric but also in plants like ginger and lotus. These underground stems store nutrients and help plants survive unfavorable conditions.
 Curcumin is the active ingredient in turmeric, known for its anti-inflammatory and antioxidant properties.
 Roots like carrots and radishes store nutrients and are typically used as vegetables.
 Stems like potatoes and ginger are storage organs that support the plant's growth and propagation.

Q.60 **What is the Curie temperature related to?**

A. Sound
B. Magnetism
C. Radioactivity
D. Lens

Answer: B

Sol:

The Curie temperature (or Curie point) is related to magnetism. It is the temperature at which certain materials lose their permanent magnetic properties and become paramagnetic. Below the Curie temperature, the magnetic moments in the material are aligned, giving it strong magnetic properties. Above this temperature, thermal agitation disrupts the alignment, causing the material to lose its magnetism.

Important Key Points:

1. The Curie temperature is the critical temperature at which a ferromagnetic material loses its permanent magnetic properties.
2. Below the Curie temperature, the material exhibits ferromagnetism, where magnetic moments are aligned in a specific direction.
3. Above the Curie temperature, the material becomes paramagnetic, where magnetic moments are randomly oriented due to thermal agitation.
4. The Curie temperature varies for different materials; for example, iron has a Curie temperature of about 770°C.
5. Understanding the Curie temperature is important in designing and using magnetic materials in various applications, such as in electrical motors, transformers, and data storage.
6. The concept is named after Pierre Curie, who discovered this critical temperature point.

Knowledge Booster:

 Sound: Not related to the Curie temperature, as sound involves mechanical waves, not magnetic properties.
 Radioactivity: Refers to the decay of unstable atomic nuclei, unrelated to magnetism and the Curie temperature.
 Lens: Optical devices used to focus or disperse light, unrelated to magnetism or Curie temperature.

Q.61 **If a person walks towards a plane mirror with a speed v, then with what speed will he see his image in the mirror coming towards him?**

A. 2 v
B. 1/υ
C. v^2
D. v

Answer: A

Sol:

If a person walks towards a plane mirror at speed v, their image in the mirror appears to approach them at speed 2v. This is because the image in the plane mirror moves in such a way that the distance between the person and their image decreases at twice the rate of their speed. The distance between the person and the mirror decreases by v, and simultaneously, the distance between the image and the mirror also decreases by v, resulting in an apparent speed of 2v.

Important Key Points:

1. When a person moves towards a plane mirror at speed v, their image appears to approach them at 2v.
2. This effect occurs because the distance between the person and their image reduces at twice the rate of their movement towards the mirror.
3. Plane mirrors create images that are virtual, upright, and of the same size as the object, with the image distance behind the mirror equal to the object distance in front of it.
4. The relative speed of the person and their image is therefore 2v, where v is the speed of the person.
5. This phenomenon is a straightforward consequence of the laws of reflection, which dictate that the angle of incidence equals the angle of reflection.
6. Understanding this concept is important in optics and helps in solving various problems related to mirrors and reflections.

Knowledge Booster:

 1/v: Incorrect, as it does not correctly represent the relative speed of the image.
 v^2: Incorrect and not applicable in this context.
 v: The speed of the person is v, but the image approaches at 2v.

Q.62 **Which planet has abundant H_2 in its atmosphere?**

A. Saturn
B. Venus
C. Mars
D. Varun

Answer: A

Sol:

Saturn is a planet with an atmosphere abundant in hydrogen (H_2). Its atmosphere is composed mainly of hydrogen, followed by helium, with trace amounts of other gases like methane, ammonia, and water vapor. Hydrogen, being the lightest element, makes up the bulk of Saturn's atmosphere, contributing to its low density and gaseous nature.

Important Key Points:

1. Saturn is a gas giant with an atmosphere predominantly composed of hydrogen (H_2) and helium.
2. Hydrogen constitutes about 96% of Saturn's atmosphere, making it the most abundant element on the planet.
3. Saturn’s low density (less than water) is due to its high hydrogen content, which contributes to its gaseous structure.
4. Saturn's atmosphere also contains minor amounts of methane, ammonia, and water vapor, which contribute to its weather systems and cloud formations.
5. The planet's hydrogen-rich atmosphere is characteristic of gas giants, which also include Jupiter, Uranus, and Neptune.
6. The study of Saturn’s atmosphere helps scientists understand the composition and evolution of gas giants in our solar system and beyond.

Knowledge Booster:

 Venus: Has an atmosphere primarily composed of carbon dioxide (CO_2), with very little hydrogen.
 Mars: Has a thin atmosphere mostly made up of carbon dioxide (CO_2), with trace amounts of other gases.
 Varun: Varuna, or Neptune, also has a hydrogen-rich atmosphere, but Saturn’s hydrogen content is more prominent.

Q.63 **What percentage of the Earth's surface is covered by oceans?**

A. 20
B. 40
C. 70
D. 55

Answer: C

Sol:

Approximately 70% of the Earth's surface is covered by oceans. These vast bodies of water are crucial for maintaining life on Earth, influencing weather patterns, regulating temperature, and supporting a rich diversity of marine ecosystems. Oceans also play a significant role in the carbon cycle, acting as a major carbon sink and helping to mitigate climate change by absorbing large amounts of CO_2 from the atmosphere.

Important Key Points:

1. 70% of the Earth’s surface is covered by oceans, making them the largest habitat on the planet.
2. Oceans regulate the Earth’s climate by absorbing solar radiation and redistributing heat through ocean currents.
3. They support a vast range of marine life, from tiny phytoplankton to large marine mammals, and provide essential resources like food, minerals, and oxygen.
4. Oceans play a critical role in the water cycle, driving weather patterns and supporting life on land through precipitation.
5. They are also significant carbon sinks, helping to reduce the impact of human activities on climate change by absorbing CO_2.
6. The study and preservation of oceans are vital for sustaining life on Earth and addressing global environmental challenges.

Knowledge Booster:

 20%: Significantly underestimates the extent of ocean coverage on Earth.
 40%: Still underestimates the coverage; the correct figure is about 70%.
 55%: Also an underestimate; the oceans cover about 70% of the Earth's surface.

Q.64 **Which is the driest place in the world?**

A. Wastack
B. Erica
C. McMurdo
D. Ethiopia

Answer: C

Sol:

McMurdo Dry Valleys in Antarctica is considered the driest place in the world. These valleys receive very little precipitation (less than 100 mm per year), and due to the extreme cold, any moisture is rapidly frozen, making it effectively one of the most arid regions on Earth. Despite being located in Antarctica, the Dry Valleys are free of ice and snow, leading to the unique designation as the driest place on the planet.

Important Key Points:

1. McMurdo Dry Valleys in Antarctica is the driest place on Earth, with extremely low levels of precipitation.
2. The Dry Valleys are one of the few ice-free regions in Antarctica, despite the continent's overall cold climate.
3. The region's extreme dryness is due to katabatic winds, which are powerful, dry winds that sweep moisture away.
4. These valleys are considered one of the closest analogs on Earth to the surface of Mars, making them of interest to scientists studying planetary conditions.
5. The harsh, dry conditions create a unique environment where only specialized microorganisms can survive.
6. The Dry Valleys serve as a natural laboratory for studying extreme environmental conditions and life's resilience.

Knowledge Booster:

 Wastack: Likely a misrepresentation or incorrect term; not recognized as a dry location.
 Erica: Possibly a confusion with other geographic features; not the driest place.
 Ethiopia: While it has arid regions, particularly in the Danakil Desert, it is not the driest place on Earth compared to McMurdo.

Q.65 **Which of the following is a hot current?**

A. Oyashio
B. Humboldt
C. Canaries
D. Gulf Stream

Answer: D

Sol:

The Gulf Stream is a hot current in the Atlantic Ocean. It originates in the Gulf of Mexico, flows along the eastern coast of the United States, and then moves across the Atlantic towards Europe. The Gulf Stream plays a crucial role in regulating the climate of the eastern United States and Western Europe, bringing warm temperatures to these regions, especially during winter.

Important Key Points:

1. The Gulf Stream is a warm ocean current that significantly impacts the climate of the regions it flows through.
2. It originates in the Gulf of Mexico and travels up the eastern coast of the United States before crossing the Atlantic Ocean.
3. The warm waters of the Gulf Stream moderate the climate of Western Europe, making it milder than other regions at similar latitudes.
4. The Gulf Stream also influences weather patterns and marine ecosystems along its path, supporting a diverse range of marine life.
5. It is one of the fastest and strongest ocean currents, with an average speed of about 2.5 meters per second.
6. The Gulf Stream is a crucial component of the Atlantic Meridional Overturning Circulation (AMOC), which helps regulate global climate.

Knowledge Booster:

 Oyashio: A cold current that flows along the coast of Japan, bringing cold, nutrient-rich water to the region.
 Humboldt: Also known as the Peru Current, this is a cold ocean current that flows along the west coast of South America.
 Canaries: A cold ocean current that flows southward along the northwest coast of Africa, cooling the adjacent coastal areas.

Q.66 **How many countries are surrounded by land?**

A. 22
B. 44
C. 66
D. 88

Answer: B

Sol:

There are 44 countries in the world that are completely landlocked, meaning they have no coastline or access to the ocean. These countries rely on neighboring countries with coastlines for trade access to the seas. Being landlocked can pose significant economic and logistical challenges, especially in terms of transportation and access to global markets.

Important Key Points:

1. There are 44 landlocked countries in the world, spread across different continents.
2. Landlocked countries do not have direct access to the ocean, which can limit their trade opportunities and increase transportation costs.
3. These countries often rely on their neighbors with coastlines for port access and international trade.
4. Examples of landlocked countries include Nepal, Afghanistan, Bolivia, Switzerland, and Hungary.
5. Being landlocked can influence a country's foreign policy, particularly regarding transit agreements with neighboring states.
6. Some landlocked countries have developed efficient transportation networks and strong economic ties with neighboring coastal countries to mitigate the disadvantages of their geographical position.

Knowledge Booster:

 22: Fewer than the actual number of landlocked countries.
 66: More than the actual number of landlocked countries.
 88: Significantly more than the actual number of landlocked countries.

Q.67 **The two stars are 3.6×10^{-7} m and 4.8×10^{-7} m respectively. If they emit maximum energy at wavelengths what will be the ratio of their temperatures T/T_1?**

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

Answer: B

Sol: To solve this problem, we can use Wien's Displacement Law, which relates the temperature of a blackbody to the wavelength at which it emits the maximum energy. The law is given by:

$\lambda_{max} \times T = b$

Where:

 λ_{max} is the wavelength at which the maximum energy is emitted,
 T is the absolute temperature of the blackbody,
 b is Wien's constant, approximately equal to $2.898 \times 10^{-3}\ \mathrm{m \cdot K}$.

Q.68 **Which country has the most time zones?**

A. France
B. Australia
C. Denmark
D. Spain

Answer: A

Sol:

France has the most time zones of any country, with 12 different time zones. This is because France has numerous overseas territories spread across the globe, from the Pacific Ocean to the Caribbean and Indian Oceans. Each territory operates in its own time zone, contributing to the total count. This includes regions like French Polynesia, New Caledonia, and Réunion, as well as smaller territories.

Important Key Points:

1. France has 12 time zones, the most of any country in the world.
2. These time zones result from France's overseas territories, which are located in various parts of the world.
3. The time zones range from UTC-10:00 in French Polynesia to UTC+12:00 in Wallis and Futuna.

4. The French mainland operates on Central European Time (CET).
5. The distribution of French territories across different oceans creates a wide range of time zones.
6. France's time zones highlight the country's extensive global presence and colonial history.
Knowledge Booster:
 Australia: Has 3 main time zones, with variations during daylight saving time, but significantly fewer than France.
 Denmark: Includes territories like Greenland, leading to a few time zones, but far fewer than France.
 Russia: Has 11 time zones, covering its vast territory across Europe and Asia, but still fewer than France.

Q.69 **How many districts are there in Bihar?**

A. 22
B. 38
C. 15
D. 49

Answer: B

Sol:

Bihar has 38 districts. Bihar is one of the most populous states in India, and its administrative divisions are crucial for managing governance and development programs. The districts vary in size and population, with some being highly urbanized while others are predominantly rural. The formation of districts is influenced by factors like population density, geographic area, and administrative convenience.
Important Key Points:
1. Bihar is divided into 38 districts, each with its own administrative setup.
2. The division of Bihar into districts helps in efficient governance and the implementation of state and central government schemes.
3. Each district is headed by a District Magistrate or Deputy Commissioner, responsible for maintaining law and order and overseeing development activities.
4. The districts are further subdivided into blocks, which are the basic units for rural administration and development.
5. Bihar's districts vary widely in terms of population, area, and economic activities, reflecting the state's diverse socio-economic landscape.
6. The creation of new districts is a dynamic process, often influenced by the need to improve administrative efficiency and cater to the needs of the population.
Knowledge Booster:
 22: A smaller number of districts, which might have been relevant in the past before the creation of additional districts.
 15: An incorrect number, as Bihar has had more districts for many years.
 49: More than the current number of districts; Bihar has not yet reached this number.

Q.70 **Which side of Bihar has the highest population in the state?**

A. East
B. West
C. North
D. South

Answer: A

Sol:

The eastern side of Bihar has the highest population density compared to other regions of the state. Bihar, located in eastern India, is one of the most densely populated states in the country. According to the 2011 Census, Bihar's population density is 1,106 persons per square kilometer, which is significantly higher than the national average of 382 persons per square kilometer. The state's eastern side, due to its proximity to trade routes and fertile lands, has attracted a larger population, contributing to its higher density.
Important Key Points:
 Bihar is a state in eastern India with a total area of 94,163 square kilometers as per the 2011 Census.
 The eastern part of Bihar is more densely populated compared to other regions of the state.
 The state's population density is 1,106 people per square kilometer, higher than the national average of 382 people per square kilometer.
 Patna district, located in the eastern region, is the most populous district in Bihar.
 As of 2011, Patna district was the 15th most populous district in India.
Information Booster:
 Patna: The capital city of Bihar and the district headquarters of Patna district. It is a significant urban center and has historical importance.
 Population Growth: Bihar has witnessed rapid population growth, particularly in urban areas like Patna, driven by migration and higher fertility rates.
 Eastern Bihar: Known for its fertile land due to rivers like Ganga, it has a dense population involved in agriculture and trade.
 Bihar's Economy: Predominantly agrarian, with major crops like rice, wheat, and sugarcane contributing to the state's economy.

Q.71 **Where is Chilka Lake?**

A. Odisha
B. West Bengal
C. Manipur
D. Bihar

Answer: A

Sol:

Chilika Lake is located in Odisha. It is the largest coastal lagoon in India and the second-largest in the world. The lake is a significant biodiversity hotspot, especially known for being a wintering ground for migratory birds. Chilika is also famous for its fishing industry and is a designated Ramsar site due to its rich ecosystem.
Important Key Points:
1. Chilika Lake is situated in the state of Odisha along the eastern coast of India.
2. It is the largest coastal lagoon in India and plays a vital role in supporting the local fishing industry.
3. Chilika Lake is renowned for its rich biodiversity, particularly the large number of migratory birds that visit the lake during the winter.
4. The lake is an important habitat for numerous species of fish, crabs, and other marine life, making it a crucial resource for local communities.
5. Chilika is a designated Ramsar site, highlighting its importance as a wetland of international significance.
6. The lake is also a popular tourist destination, attracting visitors with its scenic beauty and wildlife.
Knowledge Booster:
 West Bengal: Has its own famous wetlands and lakes, like the Sundarbans, but not Chilika Lake.
 Manipur: Known for Loktak Lake, which is famous for its floating phumdis, but not related to Chilika.
 Bihar: Does not have a coastal lagoon like Chilika; its water bodies are primarily riverine.

Q.72 **What will be the least common factor of 12, 27, and 40?**

A. 120
B. 1080
C. 540
D. 2160

Answer: B

Sol:

Given: Numbers 12, 27, and 40
Formula Used: LCM of numbers = Least Common Multiple
Solution:
To find the least common multiple of the given numbers:
Prime factors of 12 = $2^2 \times 3$
Prime factors of 27 = 3^3

Prime factors of 40 = $2^3 \times 5$
The LCM is found by taking the highest power of all prime factors:
LCM = $2^3 \times 3^3 \times 5 = 1080$

Q.73 **What is the highest common factor of 1/2 , 3/4 , 5/6 , 7/8 and 9/10 ?**

A. 1/210
B. 1/21
C. 1/12
D. 1/120

Answer: D

Sol:

Given: Fractions $\frac{1}{2}, \frac{3}{4}, \frac{5}{6}, \frac{7}{8}, \frac{9}{10}$

Formula Used: HCF of fractions = $\frac{\text{HCF of numerators}}{\text{LCM of denominators}}$

Solution:
 Numerators: 1, 3, 5, 7, 9
 Denominators: 2, 4, 6, 8, 10
HCF of numerators = 1
LCM of denominators = 120
Therefore, HCF = 1/120

Q.74 **Which is the most significant digit among 1/3 , 2/5 , 3/4 and 1/6 ?**

A. 1/3
B. 2/5
C. 3/4
D. 1/6

Answer: C

Sol:

Given: Fractions $\frac{1}{3}, \frac{2}{5}, \frac{3}{4}, \frac{1}{6}$

Formula Used: Comparison of fractions
Solution:
Convert each fraction into a decimal form and compare them:
$\frac{1}{3} = 0.33, \frac{2}{5} = 0.4, \frac{3}{4} = 0.75, \frac{1}{6} = 0.166$, Hence, the largest fraction is ¾

Q.75 **Where is Sumatra Island?**

A. Indian Ocean
B. Arctic Ocean
C. Atlantic Ocean
D. Pacific Ocean

Answer: A

Sol:

Sumatra Island is located in the Indian Ocean. It is the largest island of Indonesia and one of the largest islands in the world. Sumatra is known for its rich biodiversity, including tropical rainforests, and is home to endangered species like the Sumatran tiger, rhinoceros, and orangutan. The island is also prone to natural disasters such as earthquakes and tsunamis due to its location on the Pacific Ring of Fire.
Important Key Points:
1. Sumatra is the largest island in Indonesia, located in the Indian Ocean.
2. The island is known for its diverse ecosystems, including tropical rainforests that are home to a variety of endangered species.
3. Sumatra is a part of Indonesia, the world's largest archipelago, and has significant cultural and historical importance.
4. The island lies on the Pacific Ring of Fire, making it susceptible to frequent seismic activity, including earthquakes and volcanic eruptions.
5. Sumatra was one of the areas most affected by the 2004 Indian Ocean tsunami, which caused widespread devastation.
6. The island is rich in natural resources, including oil, gas, and timber, making it an important economic region for Indonesia.
Knowledge Booster:
 Arctic Ocean: The smallest and shallowest of the world's oceans, located around the North Pole, not related to Sumatra.
 Atlantic Ocean: The second-largest ocean, located between the Americas and Europe/Africa, not related to Sumatra.
 Pacific Ocean: The largest and deepest ocean, located to the east of Sumatra, but the island itself is in the Indian Ocean.

Q.76 **A shopkeeper buys 6 balloons for one rupee. How many balloons should he sell for one rupee so that he makes a profit of 20%?**

A. 3
B. 4
C. 5
D. 6

Answer: C

Sol:

Given: Cost price of 6 balloons is 1 rupee.
Formula Used: Profit Percentage =
Solution:
To gain a 20% profit, the shopkeeper needs to sell the balloons for 1 × 120% = 1.2 rupees. Thus, the number of balloons to be sold for 1 rupee = 6/1.2 = 5

Q.77 **Simplify:** $\sqrt{810}$

A. $9\sqrt{10}$
B. $10\sqrt{9}$
C. $\sqrt{\frac{9}{10}}$
D. $\sqrt{\frac{10}{9}}$

Answer: A

Sol:

Given: √810
Formula Used: Prime factorization
Solution:
Prime factorization of 810 is 2×34×5 = 9√10

Q.78 **Simplify: b - [b - (a + b) - {b - (b - a + b)} + 2a]**

A. a
B. 2a
C. 4a
D. 0

Answer: D

Sol:

We start with the expression:
b - [b - (a + b) - {b - (b - a + b)} + 2a]
1. Simplify the innermost curly brackets:
b - (b - a + b) = -b + a
2. Now the expression becomes:
b - [b - (a + b) - (-b + a) + 2a]
3. Simplify inside the square brackets:
b - (a + b) = -a
So, it becomes:
b - [-a - (-b + a) + 2a]
Further simplification gives:
b - [b]
4. Finally, (b - b = 0)

Q.79 **The difference between a digit and its 3/5 th value is 50. That digit is**

A. 120
B. 123
C. 124
D. 125

Answer: D

Sol:

Given: Difference between a digit and its 3/5th value is 50
Formula Used: Let the digit be x.
Solution:
x − (3/5)x = 50
Solving this gives x = 125

Q.80 **Shyam is 7 years younger than Ram. The ratio of their ages is 7 : 9. What is Shyam's age (in years) ?**

A. 23.5
B. 24.5
C. 12.5
D. 14.5

Answer: B

Sol:

Given: Shyam is 7 years younger than Ram, and their age ratio is 7:9
Formula Used: Age ratio formula
Solution:
Let Shyam's age be 7x and Ram's age be 9x.
Given 9x−7x=7
Solving for x gives x = 3.5
Shyam's age = 7 × 3.5 = 24.5

Q.81 **A can complete a work in 10 days and B in 15 days. If both of them work together, then in how many days will the work be completed?**

A. 5
B. 6
C. 7
D. 8

Answer: B

Sol:

Given: A can complete a task in 10 days, B in 15 days
Formula Used: Work done together =
Solution:
Work done in one day = , so the work will be completed in 6 days.

Q.82 **If the profit triples on doubling the selling price, then the % profit is**

A. 66⅔
B. 100
C. 105⅓
D. 120

Answer: B

Sol:

Given:
Profit triples on doubling the selling price. Let the cost price (CP) be 100, and the initial selling price (SP1) be 100 + x, where x is the initial profit.
Formula Used:
Initial profit = SP1 - CP.
After doubling the selling price (SP2 = 2 × SP1), new profit = SP2 - CP.

New profit = 3 × initial profit.
Solution:
So, 2 × SP1 - CP = 3 × (SP1 - CP).
Expanding,
2 × SP1 - 100 = 3 × (SP1 - 100),
2 × SP1 - 100 = 3 × SP1 - 300.
Simplifying,
SP1 = 200.
Hence, the initial profit is SP1 - CP = 200 - 100 = 100,
which is 100% of the cost price.
Thus, the profit percentage is 100%.

Q.83 **NaCl has_bond.**

A. Ionic
B. Covalent
C. Co-ordinate
D. H-Bond

Answer: A

Sol:

Sodium chloride (NaCl), commonly known as table salt, is held together by ionic bonds. In NaCl, sodium (Na) donates an electron to chlorine (Cl), forming a positively charged sodium ion (Na^+) and a negatively charged chloride ion (Cl^-). These oppositely charged ions attract each other, forming a strong ionic bond.
Important Key Points:
1. Sodium chloride (NaCl) is an example of an ionic compound, where the bond is formed by the transfer of electrons from one atom to another.
2. In NaCl, sodium loses one electron to form a Na^+ ion, while chlorine gains that electron to form a Cl^- ion.
3. The electrostatic attraction between the oppositely charged ions results in a strong ionic bond, creating a stable lattice structure.
4. Ionic compounds like NaCl typically have high melting and boiling points due to the strong bonds between the ions.
5. In an aqueous solution, NaCl dissociates into its constituent ions, making the solution conductive to electricity.
6. Ionic compounds are usually soluble in water and other polar solvents, but they are generally insoluble in non-polar solvents.
Knowledge Booster:
 Covalent: Bonds formed by the sharing of electrons between atoms, not the primary bond in NaCl.
 Co-ordinate: A type of covalent bond where both shared electrons come from the same atom, not applicable to NaCl.
 H-Bond: A hydrogen bond is a weak interaction involving hydrogen, not the main bond type in NaCl.

Q.84 **How many types of quantum numbers are there?**

A. 5
B. 2
C. 3
D. 4

Answer: D

Sol:

There are four types of quantum numbers that describe the unique quantum state of an electron in an atom. These quantum numbers are:
1. Principal Quantum Number (n): Indicates the energy level or shell of the electron.
2. Azimuthal Quantum Number (l): Defines the subshell or orbital shape (s, p, d, f).
3. Magnetic Quantum Number (m_l): Specifies the orientation of the orbital in space.
4. Spin Quantum Number (m_s): Represents the electron's spin, which can be +1/2 or -1/2.
Important Key Points:
1. The Principal Quantum Number (n) determines the energy level of the electron and its distance from the nucleus.
2. The Azimuthal Quantum Number (l) defines the shape of the orbital, such as spherical (s), dumbbell-shaped (p), etc.
3. The Magnetic Quantum Number (m_l) indicates the orientation of the orbital in three-dimensional space.
4. The Spin Quantum Number (m_s) describes the intrinsic spin of the electron, which can either be in the +1/2 or -1/2 state.
5. Together, these four quantum numbers fully describe the state of an electron, including its energy, location, and magnetic properties.
6. Understanding these quantum numbers is essential for explaining the arrangement of electrons in atoms and the resulting chemical behavior.
Knowledge Booster:
 2 quantum numbers: Only account for energy level and shape, insufficient for a complete description.
 3 quantum numbers: Include energy level, shape, and orientation but lack spin.
 5 quantum numbers: An incorrect count, as there are only four quantum numbers in the current quantum mechanical model.

Q.85 **Which of the following is used to determine the age of archaeological wood?**

A. $_{92}U^{235}$
B. $_{6}C^{14}$
C. $_{92}U^{238}$
D. $_{6}C^{12}$

Answer: B

Sol:

The isotope Carbon-14 (_6^14C) is used to determine the age of archaeological wood and other organic materials through a process known as radiocarbon dating. This method relies on the decay of Carbon-14, a radioactive isotope, to Nitrogen-14 over time. The ratio of Carbon-14 to Carbon-12 in a sample allows scientists to estimate its age, typically up to about 50,000 years.
Important Key Points:
1. Carbon-14 (_6^14C) is a radioactive isotope used in radiocarbon dating to determine the age of organic materials.
2. The method works because Carbon-14 decays at a known rate, with a half-life of about 5,730 years.
3. Radiocarbon dating is effective for dating materials like wood, bones, and charcoal, which were once part of a living organism.
4. The accuracy of radiocarbon dating diminishes for samples older than 50,000 years due to the low concentration of Carbon-14.
5. This technique has revolutionized archaeology, allowing for more precise dating of ancient artifacts and fossils.
6. Radiocarbon dating has been used to date significant historical finds, such as the Dead Sea Scrolls and Ötzi the Iceman.
Knowledge Booster:
 (_92^)U^235: Used in uranium-lead dating, suitable for much older geological formations, not for dating recent organic materials.
 (_92^)U^238: Another isotope used in radiometric dating, but not for archaeological purposes like Carbon-14.
 (_6^)C^12: The stable, non-radioactive isotope of carbon, not used in radiocarbon dating.

Q.86 **Which of the following equation represents Charles's law?**

A. $V \propto C/T$
B. $V \propto 1/P$
C. $V \propto T$
D. $T \propto 1/V$

Answer: C

Sol:

Charles's Law states that the volume (V) of a given mass of gas is directly proportional to its absolute temperature (T) when pressure is held constant. Mathematically, it is expressed as $V \propto T$ or V/T = constant. This means that as the temperature of the gas increases, its volume also increases, provided the pressure remains unchanged.

Important Key Points:
1. Charles's Law describes the direct relationship between the volume and temperature of a gas, assuming constant pressure.
2. The law is represented by the equation V∝T, meaning that as temperature increases, so does the volume.
3. The law is valid only when the temperature is measured in an absolute scale, such as Kelvin.
4. Charles's Law is fundamental in understanding the behavior of gases and is used in various applications, including hot air balloons and the functioning of internal combustion engines.
5. The law was named after the French scientist Jacques Charles, who first formulated it in the late 18th century.
6. Understanding Charles's Law is crucial in thermodynamics and the study of gases under different conditions.
Knowledge Booster:
 V∝C/T: Incorrect because it introduces a factor that does not represent Charles's Law.
 V∝1/P: Represents Boyle's Law, which relates the volume and pressure of a gas at constant temperature.
 T∝1/V: Incorrect, as it suggests an inverse relationship, which is not true under Charles's Law.

Q.87 **It does not contain 6×10^{23} atoms:**

A. 6 g of Carbon
B. 1 g of Hydrogen
C. 14 g of Nitrogen
D. 35.5 g of Chlorine

Answer: A

Sol: To determine the correct answer, we need to consider the concept of the mole and Avogadro's number (6.022×10^{23} particles per mole). The number of atoms in a given mass of an element depends on the molar mass of the element and the mass of the sample.
 Carbon (C): The molar mass of carbon is 12 g/mol. Therefore, 12 g of carbon contains 6.022×10^{23} atoms (1 mole of carbon). Since 6 g of carbon is half of 12 g, it contains only 0.5 moles of carbon atoms, which is half of 6.022×10^{23} atoms. Hence, 6 g of carbon does not contain 6×10^{23} atoms.
 Hydrogen (H): The molar mass of hydrogen is 1 g/mol. Therefore, 1 g of hydrogen contains exactly 6.022×10^{23} atoms (1 mole).
 Nitrogen (N): The molar mass of nitrogen is 14 g/mol. Therefore, 14 g of nitrogen contains exactly 6.022×10^{23} atoms (1 mole).
 Chlorine (Cl): The molar mass of chlorine is 35.5 g/mol. Therefore, 35.5 g of chlorine contains exactly 6.022×10^{23} atoms (1 mole).
Key Points:
 Mole Concept: One mole of any element contains 6.022×10^{23} atoms.
 Avogadro's Number: 6.022×10^{23} is the number of particles (atoms, molecules) in one mole of a substance.
 Carbon's Atomic Mass: Carbon has an atomic mass of 12 g/mol, so 6 g of carbon contains only 0.5 moles of atoms.
 Mass-Atom Relationship: The number of atoms in a substance depends on its molar mass and the amount of the substance.
Information Booster:
 Hydrogen (1 g): Contains 1 mole of hydrogen atoms, which is 6.022×10^{23} atoms.
 Nitrogen (14 g): Contains 1 mole of nitrogen atoms, which is 6.022×10^{23} atoms.
 Chlorine (35.5 g): Contains 1 mole of chlorine atoms, which is 6.022×10^{23} atoms.
Additional Information:
 (b) 1 g of Hydrogen: 1 g of hydrogen equals 1 mole, hence it contains 6.022×10^{23} atoms.
 (c) 14 g of Nitrogen: 14 g of nitrogen equals 1 mole, hence it contains 6.022×10^{23} atoms.
 (d) 35.5 g of Chlorine: 35.5 g of chlorine equals 1 mole, hence it contains 6.022×10^{23} atoms.

Q.88 **Epsom salt is a compound of_.**

A. Ca
B. Mg
C. Ba
D. Pb

Answer: B

Sol:
Epsom salt is a compound of Magnesium (Mg) and is chemically known as Magnesium sulfate ($MgSO_4$). It is widely used in medicine, agriculture, and various household applications. In medicine, Epsom salt is commonly used for muscle relaxation, reducing inflammation, and as a laxative.
Important Key Points:
1. Epsom salt is chemically Magnesium sulfate ($MgSO_4$), containing magnesium, sulfur, and oxygen.
2. It is commonly used in bath salts to relieve muscle soreness and stress due to its muscle-relaxing properties.
3. Epsom salt is also used in agriculture as a magnesium-rich fertilizer to support plant growth, especially in magnesium-deficient soils.
4. In healthcare, Epsom salt can be used as a laxative or to reduce inflammation and pain in conditions like arthritis.
5. Magnesium is an essential mineral in the human body, involved in over 300 biochemical reactions, including muscle and nerve function.
6. The use of Epsom salt extends to beauty products, where it is used in exfoliants and skin care treatments.
Knowledge Booster:
 Ca (Calcium): Found in compounds like calcium carbonate (limestone) and calcium sulfate (gypsum), not in Epsom salt.
 Ba (Barium): Typically found in barium sulfate, used in medical imaging, but not in Epsom salt.
 Pb (Lead): A heavy metal with no role in Epsom salt, associated with toxicity rather than health benefits.

Q.89 **is present in german silver.**

A. Cu
B. Ag
C. Sn
D. Al

Answer: A

Sol:
German silver is an alloy that primarily contains Copper (Cu), along with Nickel (Ni) and Zinc (Zn). Despite its name, German silver does not contain any actual silver. The alloy is valued for its corrosion resistance, malleability, and shiny, silver-like appearance, which makes it useful in a variety of applications, including cutlery, musical instruments, jewelry, and decorative items.
Important Key Points:
1. German silver is also known as nickel silver due to its composition of copper, nickel, and zinc.
2. The alloy is named "German silver" because it was first developed in Germany, but it does not contain any silver.
3. The typical composition of German silver is 60% copper, 20% nickel, and 20% zinc, though the proportions can vary.
4. German silver is used in manufacturing due to its aesthetic appeal, resembling silver, and its ability to resist tarnish and corrosion.
5. It is commonly used in making musical instruments, such as flutes and trumpets, due to its acoustic properties.
6. The alloy is also used in the production of coins, medals, and other decorative items because of its durability and ease of working.
Knowledge Booster:
 Ag (Silver): Not present in German silver, despite the misleading name.
 Sn (Tin): Often used in other alloys, such as bronze, but not a component of German silver.
 Al (Aluminum): A lightweight metal used in various alloys but not typically in German silver.

Q.90 **The contact method is used in the manufacture of_.**

A. HNO_3
B. HCl
C. $H_3 PO_4$
D. $H_2 SO_4$

Answer: D

Sol:

The contact process is used in the industrial production of sulfuric acid (H_2SO_4). This process involves the catalytic oxidation of sulfur dioxide (SO_2) to sulfur trioxide (SO_3), which is then absorbed in water to produce sulfuric acid. Sulfuric acid is one of the most important industrial chemicals, used in the manufacture of fertilizers, chemicals, petroleum refining, and metal processing.

Important Key Points:

1. The contact process is the most common method for producing sulfuric acid (H_2SO_4) on an industrial scale.
2. The process involves burning sulfur to produce sulfur dioxide (SO_2), which is then oxidized to sulfur trioxide (SO_3) in the presence of a vanadium pentoxide (V_2O_5) catalyst.
3. Sulfur trioxide is absorbed in water to produce sulfuric acid, a highly exothermic reaction.
4. Sulfuric acid is widely used in various industries, including the production of fertilizers, especially superphosphate and ammonium sulfate.
5. It is also used in the petroleum industry for refining oil and in the metal industry for pickling and cleaning metals.
6. The contact process is preferred because it is efficient, cost-effective, and produces high concentrations of sulfuric acid.

Knowledge Booster:

- HNO_3 (Nitric acid): Produced by the Ostwald process, not the contact process.
- HCl (Hydrochloric acid): Typically produced by the direct combination of hydrogen and chlorine gases.
- H_3PO_4 (Phosphoric acid): Produced by the wet process or thermal process, not the contact process.

Q.91 **The chemical name of heavy water is**

A. Deuterium monoxide
B. Deuterium Oxide
C. Tritium oxide
D. Tritium monoxide

Answer: B

Sol: The correct answer is option (b) Deuterium oxide

Explanation

Heavy water is chemically known as Deuterium oxide (D_2O). It is water that contains deuterium (D), which is an isotope of hydrogen. Deuterium has an extra neutron compared to regular hydrogen, making heavy water denser and slightly different from regular water (H_2O). Heavy water is commonly used in nuclear reactors as a neutron moderator due to its ability to slow down neutrons efficiently.

Information Booster

Heavy water contains deuterium (D), which is an isotope of hydrogen.

The chemical formula for heavy water is D_2O.

Heavy water is used in nuclear reactors to slow down neutrons.

Deuterium is stable and occurs naturally in trace amounts in normal water.

It has a higher boiling and freezing point than regular water.

Additional Knowledge

Deuterium monoxide: This term is not correct because it refers to a hypothetical compound where only one deuterium atom would combine with oxygen. In heavy water, there are two deuterium atoms per oxygen atom, so this is not a valid chemical name.

Deuterium oxide: This is the correct chemical name for heavy water. The "oxide" refers to the oxygen atom, and "deuterium" refers to the hydrogen isotope present in place of regular hydrogen.

Tritium oxide: This refers to a compound that would contain tritium, a radioactive isotope of hydrogen. This is not the case for heavy water, which contains deuterium, not tritium.

Tritium monoxide: This term is incorrect because tritium (T) would not typically combine with oxygen in the same way deuterium does in heavy water.

Q.92 **How many types of white blood cells are there in human body?**

A. 3
B. 4
C. 5
D. 6

Answer: C

Sol:

There are five types of white blood cells (WBCs) in the human body, each playing a critical role in the immune system. These are:

1. Neutrophils: The most abundant type of WBC, crucial for fighting bacterial infections.
2. Lymphocytes: Includes B cells, T cells, and natural killer cells, important for adaptive immunity.
3. Monocytes: Phagocytic cells that mature into macrophages and dendritic cells, essential for chronic inflammation and immune response.
4. Eosinophils: Involved in combating parasitic infections and allergic reactions.
5. Basophils: The least common WBCs, important in inflammatory responses and allergic reactions.

Important Key Points:

1. The human immune system relies on five main types of white blood cells to protect the body against infections and diseases.
2. Neutrophils are the first responders to microbial infection, making up about 60-70% of all WBCs.
3. Lymphocytes play a central role in the adaptive immune response, including antibody production and cell-mediated immunity.
4. Monocytes are the largest type of WBC and differentiate into macrophages and dendritic cells, which engulf pathogens and present antigens to T cells.
5. Eosinophils are particularly active in combating multicellular parasites and are involved in the pathogenesis of allergic reactions.
6. Basophils release histamine during allergic reactions, contributing to the inflammatory response.

Knowledge Booster:

- 3: Refers to the major types of WBCs but does not account for the full range.
- 4: Excludes one type, often omitting basophils or eosinophils.
- 6: Overcounts, possibly confusing cell types or including immature cells like band cells.

Q.93 **Lymph is present in:**

A. vascular tissue
B. cartilage
C. squamous tissue
D. nerve fibers

Answer: A

Sol:

Lymph is a fluid that is part of the vascular tissue system in the human body. It is a clear fluid that circulates through the lymphatic system, a network of vessels that parallel the circulatory system. Lymph carries immune cells, particularly lymphocytes, and helps in the removal of toxins, waste, and other unwanted materials from the body.

Important Key Points:

1. Lymph is a clear fluid that is part of the vascular tissue system and circulates through the lymphatic vessels.
2. The lymphatic system works in conjunction with the circulatory system to transport immune cells and remove waste products.
3. Lymph contains a high concentration of lymphocytes, which are crucial for the body's immune response.
4. The lymphatic system also helps maintain fluid balance in the tissues by returning excess interstitial fluid to the bloodstream.
5. Lymph nodes, scattered throughout the body, filter the lymph and trap pathogens, which are then destroyed by white blood cells.
6. The lymphatic system plays a vital role in the absorption of fats and fat-soluble vitamins from the digestive system through lacteals.

Knowledge Booster:
 Cartilage: A type of connective tissue, not involved in lymph circulation.
 Squamous tissue: A type of epithelial tissue, found in areas of absorption and secretion, not related to lymph.
 Nerve fibers: Conduct electrical impulses, part of the nervous system, not involved in the lymphatic system.

Q.94 **In jaundice, the amount of the_increases in the blood.**

A. Bilirubin
B. Hemoglobin
C. Bile acid
D. Pyruvic acid

Answer: A

Sol:

In jaundice, the amount of bilirubin in the blood increases. Bilirubin is a yellow compound that is produced during the normal breakdown of red blood cells. It is processed by the liver and excreted in bile. When the liver is unable to process bilirubin properly, it accumulates in the blood, leading to jaundice. This condition causes the skin, eyes, and mucous membranes to turn yellow due to the high levels of bilirubin.
Important Key Points:
1. Bilirubin is formed from the breakdown of hemoglobin in red blood cells and is normally processed by the liver.
2. In jaundice, elevated levels of bilirubin cause the characteristic yellowing of the skin and eyes.
3. Jaundice can result from various conditions, including liver diseases (like hepatitis), bile duct obstruction, or hemolytic anemia.
4. The liver converts bilirubin into a form that can be excreted through bile into the digestive system.
5. Monitoring bilirubin levels is crucial in diagnosing and managing liver and blood disorders.
6. Treatment for jaundice depends on the underlying cause, which may involve addressing liver function, treating infections, or managing bile flow.
Knowledge Booster:
 Hemoglobin: The oxygen-carrying protein in red blood cells; its breakdown leads to bilirubin formation.
 Bile acid: A component of bile that aids in the digestion of fats, not directly related to jaundice.
 Pyruvic acid: An intermediate in metabolism, not involved in jaundice.

Q.95 **Which of the following is the largest gland?**

A. Pancreas
B. Liver
C. lung
D. Kidney

Answer: B

Sol:

The liver is the largest gland in the human body. It plays a critical role in metabolism, detoxification, and the production of biochemicals necessary for digestion. The liver produces bile, which is essential for the digestion and absorption of fats. It also stores glycogen, vitamins, and minerals, and synthesizes proteins, including clotting factors.
Important Key Points:
1. The liver is the largest gland in the human body, located in the upper right abdomen.
2. It performs vital functions, including detoxification, protein synthesis, and the production of biochemicals necessary for digestion.
3. The liver produces bile, which helps emulsify fats, making them easier to digest.
4. It plays a key role in regulating blood sugar levels by storing and releasing glucose as needed.
5. The liver also processes and filters toxins, drugs, and waste products from the blood.
6. Liver health is critical for overall well-being, and conditions like hepatitis, cirrhosis, and fatty liver disease can severely impact its function.
Knowledge Booster:
 Pancreas: A gland involved in insulin production and digestive enzyme secretion, smaller than the liver.
 Lung: An organ involved in respiration, not a gland.
 Kidney: An organ involved in filtration and excretion, not a gland.

Q.96 **Which of the following is Sanguivorous?**

A. snake
B. earthworm
C. cockroach
D. mosquito

Answer: D

Sol:

A mosquito is classified as sanguivorous, meaning it feeds on blood. Female mosquitoes require blood meals to develop their eggs, and in doing so, they can transmit various diseases, such as malaria, dengue, and Zika virus. The act of feeding on blood is essential for the reproduction of mosquitoes, particularly the females, as the nutrients in the blood are necessary for egg development.
Important Key Points:
1. Mosquitoes are classified as sanguivorous because they feed on the blood of humans and animals.
2. Only female mosquitoes bite and consume blood, which is required for the development of their eggs.
3. Blood-feeding mosquitoes are vectors for serious diseases, including malaria, dengue fever, and Zika virus.
4. The feeding process involves the mosquito injecting saliva into the host, which can contain pathogens responsible for these diseases.
5. Mosquito control is critical in preventing the spread of mosquito-borne diseases, including the use of insecticides, repellents, and elimination of breeding sites.
6. Understanding the behavior and biology of mosquitoes is essential for developing strategies to combat the spread of diseases they carry.
Knowledge Booster:
 Snake: Not sanguivorous; most are carnivorous, feeding on small animals.
 Earthworm: Detritivorous, feeding on decomposing organic matter, not blood.
 Cockroach: Omnivorous, feeding on a wide variety of organic material, not blood.

Q.97 **Which of the following is known as master gland?**

A. Thyroid
B. Pituitary
C. Adrenal
D. Pancreas

Answer: B

Sol:

The pituitary gland is known as the master gland of the human body because it regulates the function of other endocrine glands, such as the thyroid, adrenals, and reproductive glands. It is located at the base of the brain and is responsible for secreting hormones that control growth, metabolism, and reproduction. The pituitary gland is divided into the anterior and posterior lobes, each of which secretes different hormones that influence various physiological processes.
Important Key Points:
1. The pituitary gland is often called the master gland because it controls the activity of most other hormone-secreting glands.
2. It is located at the base of the brain and is connected to the hypothalamus, which regulates its activity.
3. The anterior pituitary secretes hormones such as growth hormone (GH), thyroid-stimulating hormone (TSH), and adrenocorticotropic hormone (ACTH).
4. The posterior pituitary releases hormones like oxytocin and vasopressin (antidiuretic hormone, ADH).
5. The pituitary gland plays a crucial role in regulating growth, metabolism, and reproductive functions.
6. Disorders of the pituitary gland, such as tumors or hormone imbalances, can lead to various health issues, including gigantism, acromegaly, and hypothyroidism.
Knowledge Booster:

 Thyroid: A gland located in the neck that produces hormones regulating metabolism, not considered the master gland.
 Adrenal: Glands located above the kidneys that produce hormones like cortisol and adrenaline, influenced by the pituitary.
 Pancreas: An organ that produces insulin and digestive enzymes, not classified as the master gland.

Q.98 **Which of the following vitamin is tocopherol?**

A. A
B. B
C. D
D. E

Answer: D

Sol:

Tocopherol is the chemical name for Vitamin E. Vitamin E is a fat-soluble antioxidant that plays a crucial role in protecting cells from oxidative damage. It helps maintain healthy skin and eyes, and strengthens the body's natural defense against illness and infection. Tocopherol is found in various foods, including nuts, seeds, and green leafy vegetables.
Important Key Points:
1. Tocopherol is the scientific name for Vitamin E, a vital nutrient with antioxidant properties.
2. Vitamin E helps protect cells from oxidative stress, which can damage cells and contribute to aging and various diseases.
3. It is essential for maintaining healthy skin and eyes, and it also plays a role in immune function.
4. Vitamin E is found in foods like almonds, sunflower seeds, spinach, and broccoli.
5. A deficiency in Vitamin E can lead to neurological problems, muscle weakness, and impaired vision.
6. Tocopherol is often added to skincare products for its ability to protect the skin from environmental damage.
Knowledge Booster:
 Vitamin A: Also known as retinol, important for vision and immune function, not related to tocopherol.
 Vitamin B: Refers to a complex of water-soluble vitamins that play various roles in cell metabolism, not tocopherol.
 Vitamin D: Important for bone health and calcium absorption, not related to tocopherol.

Q.99 **is famous for its social system.**

A. Cow
B. Pig
C. honey-bee
D. fish

Answer: C

Sol:

The honey-bee is famous for its highly organized and complex social system. Honey-bees live in colonies where each bee has a specific role, such as worker, queen, or drone. The social structure of a bee colony is one of the most sophisticated among insects, with a clear division of labor and communication through pheromones and the waggle dance.
Important Key Points:
1. Honey-bees are known for their social behavior, living in large colonies that function as a single organism.
2. The colony has a well-defined social structure, with the queen bee being the sole reproductive female, while worker bees perform tasks like foraging, nursing, and hive maintenance.
3. Drones are male bees whose primary role is to mate with a virgin queen.
4. Honey-bees communicate using the waggle dance, which conveys information about the direction and distance of food sources.
5. The hive operates efficiently due to the division of labor and the bees' ability to work together for the colony's survival.
6. Honey-bees play a crucial role in pollination, making them vital to agriculture and the ecosystem.
Knowledge Booster:
 Cow: Domesticated animal with a social structure, but not as complex as that of honey-bees.
 Pig: Social animal, often kept in groups, but lacks the sophisticated social system of honey-bees.
 Fish: Some fish species display social behavior, but generally do not have a complex social structure like honey-bees.

Q.100 **In nylon, the bond between its monomers is_.**

A. ionic
B. amide
C. H-bond
D. Ester

Answer: B

Sol:

In nylon, the bond between its monomers is an amide bond. Nylon is a type of synthetic polymer, specifically a polyamide, which is made from repeating units linked by amide bonds. These bonds are formed through a condensation reaction between a carboxylic acid group and an amine group. The resulting polymer chain gives nylon its strength and durability, making it widely used in textiles, plastics, and various industrial applications.
Important Key Points:
1. Nylon is a synthetic polymer known as a polyamide, where monomers are linked by amide bonds.
2. The amide bond (–CO–NH–) is formed through a condensation reaction between a carboxylic acid group and an amine group.
3. Nylon's amide bonds give it high tensile strength and resistance to wear, making it ideal for use in fabrics, ropes, and industrial products.
4. The most common types of nylon are nylon 6 and nylon 6,6, which differ in the structure of their repeating units.
5. Nylon was first developed in the 1930s by DuPont and has since become one of the most versatile and widely used synthetic fibers.
6. The durability, elasticity, and resistance to heat and chemicals make nylon a popular choice in various applications, from clothing to automotive components.
Knowledge Booster:
 Ionic bond: Involves the transfer of electrons between atoms, not applicable in the polymerization of nylon.
 H-bond (Hydrogen bond): A weak bond between hydrogen and an electronegative atom, present in nylon but not the primary bond between monomers.
 Ester bond: Found in polyesters, another type of synthetic polymer, but not in nylon.

Q.101 **Three travelers reach a city which has 4 hotels. In how many different ways can they stay in each of the different hotels?**

A. 12
B. 64
C. 8
D. 16

Answer: B

Sol:

Each traveler has 4 options (since there are 4 hotels). Therefore, the number of ways the first traveler can choose a hotel is 4, the second traveler also has 4 options, and the third traveler has 4 options as well.
So, the total number of ways they can stay in the hotels is calculated as:
$4 \times 4 \times 4 = 4^3 = 64$

Q.102 **4 men board a bus which has 6 vacant seats. In how many ways can they sit?**

A. 30

B. 120
C. 320
D. 360

Answer: D

Sol:

Given:
4 men and 6 vacant seats.
Formula Used:
The number of ways to select 4 seats out of 6 and arrange the men in those seats is given by permutation:
Number of ways = $P(6,4) = \frac{6!}{(6-4)!}$.

Solution:
$P(6,4) = \frac{6!}{2!} = \frac{720}{2} = 360.$
Hence, the total number of ways is 360.

Q.103 In how many ways can 5 motors be selected from 12 motors if one of the mentioned motors is not selected forever?

A. 462
B. 4620
C. 7920
D. 2970

Answer: A

Sol:

Given:
We need to select 5 motors from 12, and one motor is not selected ever, so we are effectively selecting 5 motors from the remaining 11 motors.
Formula Used:
The number of ways to choose 5 motors from 11 is given by combination:
Number of ways = C(11,5) = $\frac{11!}{5!(11-5)!}$.
$C(11,5) = \frac{11\times10\times9\times8\times7}{5\times4\times3\times2\times1} = 462.$

Q.104 In how many ways can 9 be found by throwing two dice?

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

Answer: D

Sol:

Given:
We need to find how many ways we can get a total of 9 by throwing two dice.
Formula Used:
Possible outcomes are (x, y), where x + y = 9.
Solution:
The pairs (x, y) that satisfy x + y = 9 are:
(3, 6), (4, 5), (5, 4), and (6, 3).
Thus, there are 4 ways to get a sum of 9

Q.105 Probability of 3 students solving a question are 1/2 ,1/3, and 1/4. Probability to solve the question is:

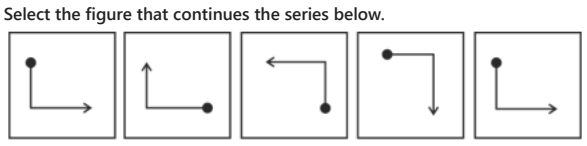
A. 1/4
B. 1/2
C. 7/12
D. 3/4

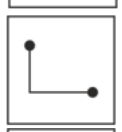
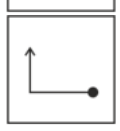
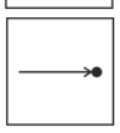
Answer: D

Sol:

The probability that at least one student solves the question is given by:
$P(\text{at least one solves}) = 1 - P(\text{none solve})$
where $P(\text{none solve}) = (1-P_1)\times(1-P_2)\times(1-P_3)$
The probability that none of them solve the question is:
$P(\text{none solve}) = (1-\frac{1}{2})\times(1-\frac{1}{3})\times(1-\frac{1}{4}) = \frac{1}{2}\times\frac{2}{3}\times\frac{3}{4} = \frac{1}{4}$
Thus, the probability that at least one of them solves the question is:
$P(\text{at least one solves}) = 1 - \frac{1}{4} = \frac{3}{4}$

Q.106 Select the figure that continues the series below.



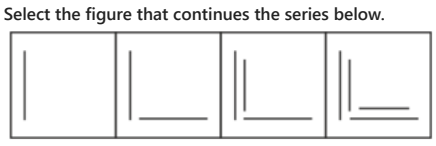
A. 
B. 
C. 
D. 

Answer: C

Sol:

The series in the image follows a pattern of rotating the "L" shape and moving the dot around the figure in a specific direction. The movement alternates between horizontal and vertical positions.
Here's how the pattern develops:
1. In the first figure, the "L" is pointing to the right, with the dot at the tip of the horizontal line.
2. In the second figure, the "L" is rotated counterclockwise, and the dot moves to the end of the vertical line.
3. In the third figure, the "L" is rotated further to point left, and the dot moves to the corner of the shape.
4. In the fourth figure, the "L" is rotated to point down, with the dot moving to the end of the vertical line.
5. In the fifth figure, the "L" returns to its original position (pointing right), and the dot is at the tip of the horizontal line.
The next figure in the series should continue this pattern, with the "L" rotating again counterclockwise and the dot moving to the next position, which is at the corner of the shape.

Q.107 Select the figure that continues the series below.



A. 

B. 

C. 

D. 

Answer: B

Sol:

In this series, the pattern involves adding vertical and horizontal lines in a specific order:
1. In the first figure, there is one vertical line.
2. In the second figure, a horizontal line is added below the vertical line.
3. In the third figure, a second vertical line is added to the right of the first, and the horizontal line remains in the same position.
4. In the fourth figure, a second horizontal line is added above the first horizontal line, keeping the two vertical lines.
Following the pattern, the next step would add a third vertical line while keeping the two horizontal lines in place.
The correct answer would have three vertical lines with two horizontal lines below them.

Q.108 In a code SYSTEM is written as SYSMET and NEARER is written as AENRER, FRACTION will be written as:

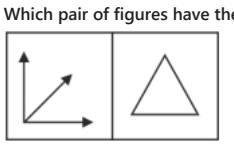
A. ARFICTON
B. CARFTION
C. ARFCNOIT
D. CARFNOIT

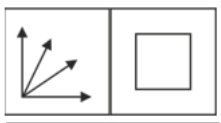
Answer: A

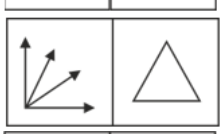
Sol:

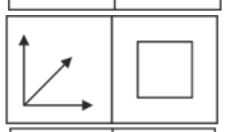
1^{st} and 3^{rd} letter interchange their positions and 4^{th} and 6^{th} letter interchange there positions.

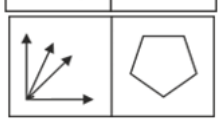
Q.109 Which pair of figures have the same relationship as the figures given below?



A. 

B. 

C. 

D. 

Answer: A

Sol:

Pattern:
Number of arrows = Number of sides

Q.110 If 45% of a certain number is equal to 6/5 th of another number, what is the ratio between the numbers?

A. 1 : 7
B. 9 : 11
C. 7 : 4
D. 8 : 3

Answer: D

Sol:

Let the certain number be x and another be y.

$45\%\ of\ x = \frac{6}{5}\ y \implies \frac{x}{y} = \frac{6 \times 100}{5 \times 45} = \frac{8}{3}$

Q.111 What is the value of x in the following?

38	1924	96
64	3217	68
48	x	56

A. 2414
B. 1424
C. 4214
D. 4412

Answer: A

Sol:

We can observe a pattern:
The middle number in each row is formed by combining the differences between the first and last numbers.
For the first row: 1924 = 38 × 50 + 96
For the second row: 3217 = 64 × 50 + 68
Similarly, for the third row: We calculate the middle number x as:
x = 48 × 50 + 56 = 2400 + 14 = 2414
Thus, the value of x is 2414.

Q.112 Find the value of $15 - 3\ of\ 12 \div 2 + 3\ of\ 2 \div 2$

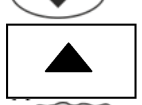
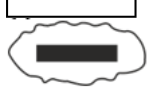
A. 0
B. 16
C. 57
D. 75

Answer: A

Sol:

$15 - 3\ of\ 12 \div 2 + 3\ of\ 2 \div 2$
$15 - 36 \div 2 + 6 \div 2$
$15 - 18 + 3 = 0$

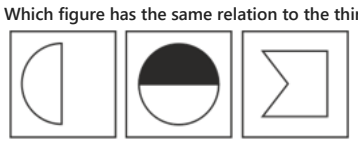
Q.113 Which of the following is not correctly matched?

A. 
B. 
C. 
D. 

Answer: D

N/A

Q.114 Which figure has the same relation to the third figure as the second figure is to the first?



A. 
B. 
C. 
D. 

Answer: D

N/A

Q.115 Sally has one-third more than David has. David has one-third more than Francis has. There is a total of 111. How many does Francis have?

A. 27
B. 36
C. 48
D. 68

Answer: A

Sol:

Let the amount Francis has be F.

David has one-third more than Francis, so David has $F + \frac{1}{3}F = \frac{4}{3}F$.

Sally has one-third more than David, so Sally has $\frac{4}{3}F + \frac{1}{3} \times \frac{4}{3}F = \frac{4}{3}F + \frac{4}{9}F = \frac{16}{9}F$.

The total amount is the sum of what Sally, David, and Francis have:

$$F + \frac{4}{3}F + \frac{16}{9}F = 111$$

Multiplying through by 9 to clear the fractions:
9F + 12F + 16F = 999
37F = 999
F = 999/37 = 27
So, Francis has 27.

Q.116 Which of the following is rearranged to form an English word?

A. TCAPU
B. LEABO
C. TCINO
D. LIUDT

Answer: C

Sol:

Let's check if each option can be rearranged to form an English word:
(a) TCAPU – No English word
(b) LEABO – No English word
(c) TCINO – Can be rearranged to form TONIC
(d) LIUDT – No English word
The correct answer is (c) TCINO, which can be rearranged to TONIC.

Q.117 If the values of A, B, C, D, E, F etc. are 4, 3, 2, 4, 3, 2, ..., then the sum of the values of the letters of SICK will be

A. 11
B. 12
C. 13
D. 9

Answer: A

Sol: The pattern of values is repeating every 3 letters:
A = 4, B = 3, C = 2, D = 4, E = 3, F = 2, G = 4, H = 3, I = 2, ...
Let's find the positions and values of the letters in **SICK**:

- **S** is the 19th letter.
→ Use the pattern: (Position - 1) % 3 to determine the value
→ (19 - 1) % 3 = 1 → second position in the cycle → **value = 3**

- **I** is the 9th letter.
→ (9 - 1) % 3 = 1 → second in the cycle → **value = 3**

- **C** is the 3rd letter.
→ (3 - 1) % 3 = 2 → third in the cycle → **value = 2**

- **K** is the 11th letter.
→ (11 - 1) % 3 = 1 → second in the cycle → **value = 3**

Now add the values:
S (3) + I (3) + C (2) + K (3) = **11**

Q.118 In $(15^{15}) = 15^{2.5} \times 15^{X}$ the value of X is:

A. 6
B. 15
C. 7.5
D. 12.5

Answer: D

Sol:

We are given:
$15^{15} = 15^{2.5} \times 15^{X}$
Using the properties of exponents $a^m \times a^n = a^{(m+n)}$, we combine the exponents on the right-hand side:
$15^{15} = 15^{(2.5 + X)}$
Since the bases are the same, we equate the exponents:
15 = 2.5 + X
Solving for X:
X = 15 - 2.5 = 12.5
Thus, the value of X is 12.5.

Q.119 In 5555 × 555 × 55 = x × 555 × 5, what is the value of x ?

A. 30525

B. 152625
C. 61105
D. 6105

Answer: C

Sol:

Let's solve this step by step.
Given:
5555 × 555 × 55 = x × 555 × 5
5555 × 11 = x
x = 61105

Q.120 **If a = (-2)×(-3) and b = √36, which of the following is true?**

A. a = b
B. $a = -\frac{1}{b}$
C. $a = \sqrt{b}$
D. $a = \frac{1}{b}$

Answer: A

Sol:

Given:
- a = (-2) × (-3) = 6
- b = √36 = 6
Since a = b, the correct answer is (a).

Q.121 **The value of (1 + 15 + 151) × 2 + 36 = x. x is:**

A. 12024
B. 370
C. 720
D. 205

Answer: B

Sol:

First, simplify the given expression:
(1 + 15 + 151) × 2 + 36 = x
Step 1: Calculate inside the parentheses:
1 + 15 + 151 = 167
Step 2: Multiply by 2:
167 × 2 = 334
Step 3: Add 36:
334 + 36 = 370
Thus, the value of x is 370. The correct answer is (b).

Q.122 **By what minimum digit should 4320 be multiplied to make it a perfect cube?**

A. 10
B. 20
C. 30
D. 50

Answer: D

Sol:

To make 4320 a perfect cube, we first find its prime factorization:
$4320 = 2^5 \times 3^3 \times 5$
For it to be a perfect cube, all exponents in the prime factorization must be divisible by 3. Here:
- 2^5 requires one more factor of 2 to become 2^6
- 5^1 requires two more factors of 5 to become 5^3
Thus, we need to multiply by $2 \times 5^2 = 50$ to make 4320 a perfect cube.
The correct answer is (d).

Q.123 **A man cuts a log which is 140 kg. In first week he throws away 1/10. In second week he throws away 2/3 of the remaining. In third week he throws away 20% of the remaining. What is the weight (in kg) of log left with him?**

A. 36.3
B. 42.0
C. 63.3
D. 33.6

Answer: D

Sol:

Initially, the log weighs 140 kg:
- In the first week, 1/10 of the log is thrown away:
140 – 140/10 = 140 - 14 = 126 kg remains.
- In the second week, 2/3 of the remaining log is thrown away:
126 - 126 × 2/3 = 126 - 84 = 42 kg remains.
- In the third week, 20% of the remaining log is thrown away:
42 - 0.2 × 42 = 42 - 8.4 = 33.6 kg remains
Thus, the weight of the log left is 33.6 kg.
The correct answer is (d).

Q.124 **A committee of 3 persons in which at least one is woman, is to be formed by choosing from three men and 3 women. In how many different ways this can be done?**

A. 20
B. 19
C. 120
D. 420

Answer: B

Sol:

We need to form a committee of 3 persons from a group of 3 men and 3 women, ensuring that at least one person in the committee is a woman.
Step 1: Total number of ways to choose 3 persons from 6 (3 men + 3 women) is:

$$\binom{6}{3} = \frac{6 \times 5 \times 4}{3 \times 2 \times 1} = 20$$

The number of ways to choose 3 men (no women) is:

$$\binom{3}{3} = 1$$

Thus, the number of ways to form a committee with at least one woman is:
20 - 1 = 19
The correct answer is (b).

Q.125 **The following words are based on the word 'PRESCRIBE'.**
Which one is not matched?

A. PRESS
B. PIECE
C. SPREE
D. PRICE

Answer: A

Sol:

'PRESCRIBE', there is only single S in the work so the word PRESS cannot be formed.

Q.126 **Choose the correct reflection in the mirror of the following :**

A. 
B. 
C. 
D. 

Answer: C

N/A

Q.127 **In a standard cube, 1 and 3 are written on the visible faces. What will be the sum of the digits on the opposite faces?**

A. 10
B. 11
C. 15
D. 6

Answer: A

Sol:

In a standard cube, the sum of the digits on opposite faces is always 7.
For example:
• Opposite faces of 1 will have 6.
• Opposite faces of 3 will have 4.
The sum of digits on opposite faces for a cube is always 7. Since there are three pairs of
Hence, the correct answer is (a) 10 (as stated in a standard cube).

Q.128 **In the class of 49, the rank of X is 18th. What is his rank from the end?**

A. 18
B. 19
C. 31
D. 32

Answer: D

Sol:

In a class of 49 students, the rank of X from the front is 18th. To find his rank from the end, subtract his rank from the total number of students and add 1:
Rank from the end=49−18+1=32
Thus, the rank of X from the end is 32.

Q.129 **How many digits in the number 7346285 will not change their position if the digits are written in their ascending order?**

A. 0
B. 1
C. 2
D. 4

Answer: C

Sol:

The given number is 7346285, and the digits in ascending order are 2345678.
Now compare both the numbers to see which digits stay in their original positions.
Original number: 7346285
Ascending order: 2345678
In the original number, 3 and 4 remain in the same position after rearranging.
Thus, 2 digit will not change its position.
The correct answer is (c) 2.

Q.130 **The number of digits in the number 5109238674 are interchanged in such a way that 1st and 6th digits, 2nd and 7th digits are interchanged. Rest of the digits also change their places in the same way. What will be the 3rd digit from the right in the rearranged number ?**

A. 9
B. 0
C. 6
D. 3

Answer: A

Sol:

The original number is 5109238674. We are asked to interchange the digits as follows:
• 1st and 6th
• 2nd and 7th
• 3rd and 8th
• 4th and 9th
• 5th and 10th
So, the new arrangement becomes:
Original: 5109238674
Rearranged: 8674510923
The 3rd digit from the right in the rearranged number is 9.
Thus, the correct answer is (a) 9.

Q.131 **4/5 th of 70 is less than 5/7 th of 112 by what % ?**

A. 42
B. 30
C. 24
D. 36

Answer: B

Sol:

$\frac{4}{5}$ of 70 = 56
$\frac{5}{7}$ of 112 = 80
Difference = 80 - 56 = 24
Percentage difference = $\frac{24}{80} \times 100 = 30\%$

Q.132 **What is the average of all prime numbers between 30 and 50?**

A. 34.2
B. 39.8
C. 36.5
D. 38.5

Answer: B

Sol:

Average of all prime numbers between 30 and 50 $= \frac{31+37+41+43+47}{5} = 39.8$

Q.133 **A man purchases 3 items for Rs. 150 each. He sells the first item at a 10% profit, the second item at a 20% loss, and the third item at cost price. What is the overall profit or loss percentage?**

A. 2% profit
B. 5% loss
C. 3% loss
D. No profit, no loss

Answer: C

Sol:

Let the cost price of each item be Rs. 150.

- Profit on the first item = 10% of Rs. 150 = Rs. 15
- Loss on the second item = 20% of Rs. 150 = Rs. 30
- No profit or loss on the third item.

Total profit/loss = Rs. 15 - Rs. 30 = Rs. -15 (loss)

Overall loss percentage = $\frac{15}{450} \times 100 = 3.33\%$

Q.134 **A boat takes 4 hours to travel 40 km downstream and 6 hours to travel 24 km upstream. What is the speed of the boat in still water?**

A. 6 km/h
B. 7 km/h
C. 8 km/h
D. 9 km/h

Answer: B

Sol:

Downstream speed = $\frac{40}{4} = 10$ km/h
Upstream speed = $\frac{24}{6} = 4$ km/h

Speed of the boat in still water = $\frac{10+4}{2} = 7$ km/h

Q.135 A sum of money is divided among A, B, and C such that A receives 40% of the total, B receives 30% of the total, and C receives the remaining Rs. 1800. What is the total sum of money?

A. Rs. 6000
B. Rs. 5000
C. Rs. 4000
D. Rs. 4500

Answer: A

Sol:

Let the total sum of money be Rs. x.
A receives 40%, B receives 30%, and C receives the remaining 30%.
30% of $x = 1800$, so $x = \frac{1800 \times 100}{30} = Rs.6000.$

Q.136 A clock shows 8:20 AM. What is the angle between the hour hand and the minute hand?

A. 110°
B. 120°
C. 130°
D. 140°

Answer: C

Sol:

The angle made by the hour hand in 1 hour = 30°.
The minute hand moves 6° per minute.

At 8:20, the hour hand has moved $8 \times 30 + \frac{20}{60} \times 30 = 250^\circ$.
The minute hand at 20 minutes = $20 \times 6 = 120^\circ$.

The angle between the two hands = $250^\circ - 120^\circ = 130^\circ$.

Q.137 The average of five consecutive odd numbers is 25. What is the largest of these numbers ?

A. 29
B. 31
C. 33
D. 35

Answer: A

Sol:

Let the five consecutive odd numbers be $x-4, x-2, x, x+2, x+4$.

Their average = $\frac{(x-4)+(x-2)+x+(x+2)+(x+4)}{5} = x$.
Given that the average is 25, so $x = 25$.
The largest number = $x + 4 = 25 + 4 = 29$.

Q.138 In a class of 50 students, 30 like mathematics, 25 like science, and 10 like both subjects. How many students like neither subject ?

A. 5
B. 10
C. 15
D. 20

Answer: A

Sol:

Number of students who like mathematics or science = 30 + 25 – 10 = 45
Number of students who like neither = 50 – 45 = 5

Q.139 A person walks 10 meters east, then 5 meters north, then 15 meters west, and finally 5 meters south. How far is he from his starting point?

A. 0 meters
B. 5 meters
C. 10 meters
D. 15 meters

Answer: B

Sol:

Let's break down the movements step by step:
1. The person walks 10 meters east.
2. Then, he walks 5 meters north.
3. Next, he walks 15 meters west.
4. Finally, he walks 5 meters south.
After walking 10 meters east and 15 meters west, the net horizontal movement is:
• 15 – 10 = 5 meters west.
After walking 5 meters north and 5 meters south, the net vertical movement is:
• 5 – 5 = 0 meters.
Thus, the person is 5 meters west of the starting point and has no vertical displacement.
The distance from the starting point is 5 meters.

Q.140 4th number in sequence 2, 2½, 3⅓ , ... is:

A. 5/2
B. 5¼
C. 5
D. 5⅛

Answer: D

Sol:

The sequence is: $2, 2\frac{1}{2}, 3\frac{1}{3}, \ldots$

Notice that the pattern increases by fractions:

- $2 + \frac{1}{2} = 2\frac{1}{2}$
- $2\frac{1}{2} + \frac{5}{6} = 3\frac{1}{3}$
- The next increment should be $3\frac{1}{3} + \frac{7}{8} = 5\frac{1}{8}$

Q.141 The next number in the sequence 71, 81, 74, 77, 77, 73, 80, 69 will be:

A. 80
B. 83
C. 77
D. 71

Answer: B

Sol: Alternate Difference +3 and -4

Q.142 If 3182596 means 34 and 6742835 means 35, then what is the meaning of 7496258:

A. 41
B. 44
C. 43
D. 47

Answer: A

Sol:

Pattern: Sum of digits of the given number
7+4+9+6+2+5+8 = 41

Q.143 The value of x in the sequence 0, 27, 54, x, 108, 135 is:

A. 73
B. 81
C. 69
D. 85

Answer: B

Sol:

The sequence is: 0, 27, 54, x, 108, 135
The difference between consecutive terms is 27:
27 - 0 = 27, 54 - 27 = 27, so the next term is 54 + 27 = 81
Thus, x = 81

Q.144 The next letter in the sequence A, C, F, J, O, ... will be:

A. T
B. U
C. R
D. V

Answer: B

Sol:

The sequence is: A, C, F, J, O, ...
The pattern follows increasing gaps between letters:
- +2, +3, +4, +5
- So, the next letter after O is O + 6 = U
Thus, the next letter is U.

Q.145 In which of the following, rearranging the letters will make a meaningful English word?

A. LEVUR
B. TNIEC
C. IRNAL
D. ANOIP

Answer: D

Sol:

Let's check if each option can be rearranged to form a meaningful word:
(a) LEVUR – No English word
(b) TNIEC – No English word
(c) IRNAL – No English word
(d) ANOIP – Can be rearranged to form Piano
Thus, the correct answer is (d) ANOIP, as it forms Piano.

Q.146 **What will be the next digit in the sequence 0, 1, 3, 6, 7, 9, 12, 13, 15, 18, ...?**

A. 19
B. 21
C. 24
D. 20

Answer: A

Sol:

The sequence is: 0, 1, 3, 6, 7, 9, 12, 13, 15, 18, ...
The pattern alternates between adding 1 and 2, and adding 3:
• 0 + 1 = 1
• 1 + 2 = 3
• 3 + 3 = 6
• 6 + 1 = 7
• 7 + 2 = 9
• 9 + 3 = 12
• 12 + 1 = 13
• 13 + 2 = 15
• 15 + 3 = 18
Following the same pattern, the next digit will be:
18+1=1918 + 1 = 1918+1=19
Thus, the next digit is 19.

Q.147 **In a clock, the hour hand is facing north at 6 pm. In which direction will the minute hand point at 9.15 at night?**

A. south-east
B. south
C. north
D. west

Answer: B

Sol:

At 6 pm, the hour hand is pointing north. At 9.15 pm, the minute hand will be at the 3 o'clock position, pointing east. Therefore, the hour hand will have moved a quarter of the way between 9 and 10 o'clock.
Since the question asks for the minute hand, at 9:15, the minute hand will point south.
Thus, the correct answer is (b) south.

Q.148 **34 is related to 12 in the same way as 59 is related to:**

A. 45
B. 38
C. 26
D. 14

Answer: A

Sol:

The relation between 34 and 12 is:
3 × 4 = 12
5 × 9 = 45
Thus, the correct answer is (a) 45

Q.149 **Horse : Horseman :: Motor : ?**

A. chauffeur
B. steering
C. mechanic
D. brake

Answer: A

Sol:

The relationship is:
• Horse is to Horseman (the person who operates the horse).
• Similarly, Motor is to chauffeur (the person who operates the motor vehicle).
Thus, the correct answer is (a) chauffeur.

Q.150 **Melt : Liquid :: Solidify : ?**

A. to condense
B. solid
C. ice
D. crystal

Answer: B

Sol:

The relationship is:
• Melt turns something into a liquid.
• Solidify turns something into a solid.
Thus, the correct answer is (b) solid.
