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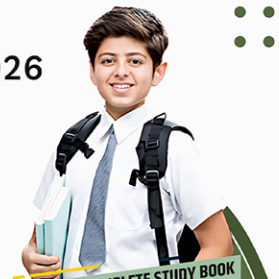

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# Contents

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## Answer Key

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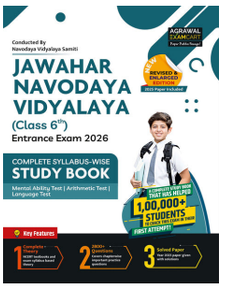


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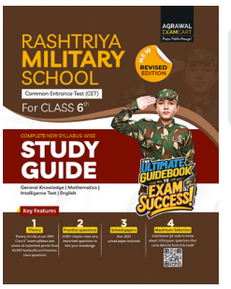


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Chapter
1

Unit-I : Social Science

# Indian History

## Important Events in Indian History

### Ancient India

- **Indus Valley Civilization (6000 BCE - 1300 BCE)**
  - This civilization was one of the earliest in the world, and developed in the Indus River valley it is now in Pakistan and western India.
  - The IVC is known for its advanced urban planning and engineering, as well as its sophisticated culture and religion.
  - Important sites include Harappa (Pakistan), Mohejo-Daro (Pakistan), Lothal (Gujarat), Kalibangan (Rajasthan), Dholavira (Gujarat), Rakhigarhi (Haryana) etc.
- **Vedic Period (1700 BCE - 600 BCE)**
  - This period is marked by the composition of the Vedas, the earliest sacred texts of Hinduism, and the emergence of the caste system. Four vedas are Rigveda, Yajurveda, Samaveda and Atharvaveda.
  - Rigveda is the oldest veda, it has 1028 verses and 10 mandals.
- **Age of the Mahajanapadas (600 BCE - 300 BCE)**
  - This period saw the rise of 16 powerful kingdoms or republics known as the Mahajanapadas, including the powerful kingdoms of Magadha, Kosala, and Kuru. Elephants were first used by Magadh Empire in battles.
  - Bimbasara, the ruler of Magadha, and Chandra Pradyota, the ruler of Avanti, were contemporaries of the Buddha. The capital of the ancient Magadha Empire was Pataliputra. Although its initial capital was Rajagriha.
- **The Rise of Jainism and Buddhism (6th century BCE)**
  - This period saw the emergence of Jainism and Buddhism, two major Indian religions that had a significant impact on Indian culture and society.
- **The Persian and Greek Invasions (5th century BCE - 2nd century BCE)**
  - This period saw the invasions of India by Persian and Greek armies, led by Darius and Alexander the Great, respectively, which had a significant impact on Indian culture and society.
- **Maurya Empire (322 BCE - 185 BCE)**
  - Founded by Chandragupta Maurya, this empire was the first to unite most of the Indian subcontinent under one rule, and was known for its advanced administration and military organization.
- Ashoka was the greatest ruler of this dynasty who addressed the public through stone inscriptions and established 'Srinagar' in Kashmir.
  - Ashoka was the grandson of Chandra Gupta Maurya and son of Bindusara.
  - The last ruler of the Maurya dynasty was Brihadratha.
  - Ashoka's inscriptions and Brahmi script were deciphered by James Prinsep.
- **Gupta Empire (320 CE - 550 CE)**
  - The founder of this dynasty was Shri Gupta.
  - The Gupta ruler Kumar Gupta established Nalanda University in the fifth century. For admission in it, an examination was conducted by Dwar Pandit.
  - The Gupta ruler Samudra Gupta is called the Napoleon of India.
  - The Chinese traveller Fa-Hien came to India during the time of the Gupta ruler Chandra Gupta II.
  - This empire was known for its achievements in art, science, mathematics, and literature, and is often referred to as the "Golden Age" of ancient India.
- **Vardhan Dynasty (606 CE - 647 CE) and King Harsha**
  - Ruled by King **Harsha** of Vardhana dynasty this empire controlled a large portion of northern India, and was known for its achievements in literature religion and the arts.
  - During the reign of Harshavardhana, the Chinese traveller Hiuen Tsang came to study at Nalanda University. He came to India via the Silk Route, which is now known as Nathula Pass.
  - Nalanda University was the first residential university in the world.
- **The Rise of the Rajputs (6th century - 12th century)**
  - The Rajputs were a group of warrior dynasties that controlled a large portion of northern and western India, and played a major role in shaping medieval Indian history.
  - The most famous among the Rajput rulers was Prithviraj Chauhan, who defeated Muhammad Ghori in the First Battle of Panipat.
  - Pala ruler Dharmapala established Vikramshila University.

### Medieval India

- **The Ghaznavid Empire (977 CE - 1186 CE)**
  - This empire, founded by Sabuktigin and expanded by his son Mahmud of Ghazni, controlled a vast territory that included parts of present-day Pakistan, Afghanistan and North-western India.

- **The Delhi Sultanate (1206 CE - 1526 CE)**
  - This empire was founded by Qutb-ud-din Aibak, and saw the rule of several dynasties, including the Mamluk dynasty, the Khalji dynasty, the Tughlaq dynasty, Sayyid dynasty and Lodhi dynasty.
  - "Ibn Battuta came to India during the time of the Tughlaq ruler Muhammad Tughlaq."
  - "During Qutb ud-Din's time, the capital of the Sultanate was Lahore."
- **The Vijayanagara Empire (1336 CE - 1646 CE)**
  - This empire, located in Southern India, was known for its achievements in art, architecture, and literature, and played a major role in resisting Islamic invasions in South India.
- **The Bahmani Sultanate (1347 CE - 1527 CE)**
  - This empire, located in Southern India, was founded by the Bahmani family, and saw the rule of several dynasties, including the Bahmani dynasty, the Barid Shahi dynasty and the Qutb Shahi dynasty.
- **The Mughal Empire (1526 CE - 1858 CE)**
  - This empire, founded by Babur, was known for its achievements in art, architecture, and literature, as well as its patronage of scholars and scientists. Prominent rulers were Babar, Humayun, Akbar, Jahangir, Shahjahan, Aurangzeb etc.
  - Sher Shah Suri introduced a currency called Rupiya and his tomb is located in Sasaram, Bihar.
- **The Maratha Empire (1674 CE - 1818 CE)**
  - This empire, founded by Shivaji, controlled a large portion of western and central India, and played a major role in resisting Mughal rule.

## Modern India

- **The British East India Company (1600 CE - 1858 CE)**
  - The British East India Company was a British trading company that gradually established control over large parts of India, leading to the colonisation of India by the British.
- **The Indian Rebellion of 1857 (also known as the Indian Mutiny)**
  - A widespread rebellion against British East India Company's rule in India, which started from Meerut which eventually led to the British Crown taking control of India. W.C, Banarjee was its first president.
- **The Indian National Congress (1885)**
  - The Indian National Congress (INC) was formed as a political organisation to voice the demands and grievances of Indians and to represent them in the British government.
- **The Indian National Movement (19th century - 20th century)**
  - This period saw the emergence of the Indian national movement, which aimed to achieve independence from British colonial rule.
- **The Partition of Bengal (1905)**
  - This event, also known as the "Bengal Divide," was a British government policy to weaken the nationalist movement by dividing Bengal into Hindu and Muslim-majority regions.
- **Jallianwala Bagh Massacre (1919)**
  - On April 13, 1919, in Amritsar, Punjab, India, a peaceful gathering of people was taking place in the Jallianwala Bagh, a public garden, to protest the arrest and deportation of two popular leaders of the Indian independence movement, Dr. Saifuddin Kitchlew and Dr. Satyapal.
  - The gathering was fired upon by British Indian Army soldiers under the command of Brigadier-General Reginald Dyer, who ordered his troops to open fire without warning on the unarmed crowd resulting in the deaths of hundreds of people.
- **The Non-Cooperation Movement (1920-1922)**
  - The Non-Cooperation movement was started by Mahatma Gandhi with an aim to achieve freedom through non-violent means, it was a significant event as it was the first countrywide movement against British colonial rule.
- **Simon Commission (1927)**
  - On 8 November 1927, the British Government announced the appointment of the Indian Statutory Commission, composed of seven members, headed by Sir John Simon, to go into the question of further constitutional reform. It came to be widely known as the Simon Commission.
  - It was opposed by Indians as it had no Indian member.
- **The Salt Satyagraha (1930)**
  - This was a non-violent civil disobedience movement against the British salt monopoly led by Mahatma Gandhi, it was a significant event which was started from Dandi on 12 March, 1930 as it brought the issue of Indian independence to the world stage.
- **The Quit India Movement (1942)**
  - This movement, launched by Mahatma Gandhi, called for an immediate end to British rule in India and was marked by widespread civil disobedience.
- **India's Independence and the Partition of India (1947)**
  - On August 15, 1947, India achieved independence from British colonial rule, and the country was partitioned into two separate states: India and Pakistan.
- **The Indian Constitution and the Formation of the Republic of India (1950)**
  - India adopted its own Constitution, and officially became the Republic of India on January 26, 1950.
- **Emergency in India (1975-1977)**
  - This period, also known as the "Internal Emergency," was a 21-month period during which Prime Minister Indira Gandhi suspended civil liberties and imposed press censorship.

- **The Indian Nuclear Tests (1998)**
  - India conducted a series of nuclear tests, which led to international condemnation and economic sanctions.

## Famous Wars and Battles of Indian History

### Ancient India

- **Battle of Kurukshetra (Mahabharata War)**
  - This battle, described in the Hindu epic the Mahabharata, took place around 3102 BC between the Kauravas and the Pandavas, two groups of cousins, for the throne of Hastinapura. This battle was fought for 18 days.
  - Lord Ganesha wrote Mahabharata while Vyasa narrating him.
- **Battle of the Ten Kings (Rigvedic Battle)**
  - This battle, described in the Rigveda, an ancient Indian sacred text, took place around 1500 BC and involved a coalition of ten kings who challenged the rule of Sudas, the king of the Bharatas.
- **Battle of the Hydaspes (Alexander's Invasion of India)**
  - This battle was fought in 326 BC between Greek ruler Alexander and King Porus, resulting in a Macedonian victory but also marking the end of Alexander's Indian campaign.
- **Conquest of Magadha**
  - This series of battles and wars were fought in the 4th century BC between the Nanda Empire and the expanding Maurya Empire, resulting in the establishment of the Maurya Empire as the dominant power in ancient India.
- **Kalinga War**
  - This war was fought in 260 BC between the Mauryan Empire and the Kingdom of Kalinga, resulting in a Mauryan victory and the annexation of Kalinga to Mauryan Empire. The war had a profound effect on the Emperor Ashoka, who renounced violence and adopted Buddhism.
- **The Tripartite Struggle**
  - This series of conflicts took place in the 3rd century BC between the Mauryan Empire, the Shunga Empire, and the Satavahana Empire for control of the Indian subcontinent.
- **First Battle of Tarain**
  - This battle was fought in 1191 AD between the Rajput king Prithviraj Chauhan and the Muslim ruler Muhammad Ghori. Prithviraj Chauhan defeated Muhammad Ghori.
- **Second Battle of Tarain**
  - The second battle of Tarain was fought between the Ghurid army led by Muhammad Ghori and the Rajput Chahamanas and their allies led by Prithvi Raj Chauhan in 1192. The battle saw the defeat of the Rajputs.
- **First Battle of Panipat**
  - This battle was fought in 1526 AD between the Mughal emperor Babur and the Sultan of Delhi, Ibrahim Lodi, resulting in a Mughal victory and the establishment of Mughal rule in India.
- **Battle of Khanwa**
  - This battle was fought in 1527 AD between the Mughal emperor Babur and the Rajput king Rana Sanga, resulting in a Mughal victory and the consolidation of Mughal rule in northern India.
- **Battle of Chausa**
  - This Battle was fought in 1539 AD between the Mughal emperor Humayun and the Afghan king Sher Shah Suri. The battle took place near the village of Chausa, in Buxar district of Bihar, India. Humayun was defeated and it resulted in the loss of control over northern India to Sher Shah Suri, who established the Sur Empire and ruled for a brief period of time.
- **Second Battle of Panipat**
  - This Bsttle was fought between the forces of Samrat Hem Chandra Vikramaditya, popularly called Hemu, the Hindu king who was ruling North India from Delhi, and the army of Akbar, on November 5, 1556. It was a decisive victory for Akbar's generals Khan Zaman I and Bairam Khan.
- **Battle of Talikota**
  - This battle was fought in 1565 AD between the Vijay-anagara Empire and an alliance of Deccan Sultanates, resulting in a crushing defeat for Vijayanagara Empire, which marked the end of the empire's power.
- **Battle of Haldighati**
  - This battle was fought in 1576 AD between the Mughal emperor Akbar and the Rajput king Maharana Pratap, resulting in a Mughal victory but with Maharana Pratap being able to retreat and maintain control over his kingdom.
- **Battle of Plassey**
  - This battle was fought in 1757 between the British East India Company and the Nawab of Bengal, Siraj-ud-daulah, resulting in the British victory and the establishment of British rule in Bengal.
- **Battle of Buxar**
  - This battle was fought in 1764 between the British East India Company and the combined forces of the Nawab of Bengal, the Nawab of Awadh, and the Mughal emperor Shah Alam II, resulting in a British victory which made their power reach its peak.
- **First Anglo-Mysore War (1766-1769)**
  - This war was sparked by the rise of Hyder Ali, the ruler of Mysore, who sought to expand his kingdom and challenge the British presence in southern India. The war ended with a treaty that recognized the independence of Mysore, but also imposed restrictions on its military power.
- **Second Anglo-Mysore War (1780-1784)**
  - This war was sparked by the continued expansion of Mysore under Hyder Ali and his son, Tipu Sultan. The war ended with a British victory and the Treaty of Mangalore, which imposed further restrictions on Mysore's military power.
- **Third Anglo-Mysore War (1789-1792)**
  - This war was sparked by the continued expansionist ambitions of Tipu Sultan, who sought to challenge

British control of southern India. The war ended with a British victory and the Treaty of Seringapatam, which imposed heavy fines on Mysore and reduced its territory.

- **Fourth Anglo-Mysore War (1798-1799)**
  - This war was sparked by the continued expansionist ambitions of Tipu Sultan and his alliance with the French, who were at war with the British. The war ended with a British victory and the Treaty of Seringapatam, which resulted in the death of Tipu Sultan and the annexation of Mysore by the British East India Company.
- **First Anglo-Maratha War**
  - This war was fought in 1775-1782 between the British East India Company and the Maratha Empire, resulting in a British victory and the establishment of British control over much of India.
- **Second Anglo-Maratha War**
  - This war was fought in 1803-1805 between the British East India Company and the Maratha Empire, resulting in a British victory and the end of the Maratha Empire as a major power in India.
- **Third Anglo-Maratha War**
  - This war was fought in 1817-1818 between the British East India Company and the Maratha Empire, resulting in the end of Maratha power and the establishment of British rule over much of India.
- **Anglo-Sikh Wars**
  - These wars were fought in 1845-1846 and 1848-1849 between the British East India Company and the Sikh Empire, resulting in British victory and the annexation of the Punjab region by the British.
- **Indian Rebellion of 1857 (First War of Indian Independence)**
  - This rebellion was a widespread uprising against British rule in India, sparked by a number of factors, including resentment towards British policies and the use of Indian soldiers in the Crimean War.
- **Partition of India**
  - In 1947, the British government announced its intention to transfer power to the Indians. This led to a period of communal violence and mass migration, as Muslims and Hindus were separated into two different countries: India and Pakistan.
- **Sino-Indian War**
  - This war was fought in 1962 between China and India over a disputed border, resulting in a Chinese victory.
  - In this India lost a large land area.

## Post Independence

- **Indo-Pakistani War of 1965**
  - This war was fought between India and Pakistan over the disputed region of Kashmir, resulting in a stalemate and a UN-mediated ceasefire.
- **Indo-Pakistani War of 1971**
  - This war was fought between India and Pakistan, resulting in the independence of East Pakistan (present-day Bangladesh) and a decisive Indian victory.
- **Kargil War**
  - This war was fought in 1999 between India and Pakistan in the Kargil district of Kashmir, resulting in an Indian victory and the withdrawal of Pakistani forces from Indian territory.

## Indian Freedom Struggle

- In ancient times India used to be known as the golden bird. At that time India's trade was spread across half the world. There was great demand for Indian spices, specially black pepper and cardamom, in European countries.
- This trade was carried out by the traders of Arab countries. In European countries Indian goods fetched a very high price.
- Vasco de Gama, a sailor from Portugal, was the first to come to India after a long sea voyage. His ship docked at the port of Calicut in 1498.
- After Vasco de Gama's journey the Portuguese started trading with India. They would buy goods at cheap prices from India and sell them at high prices in European markets.
- In a short time Portugal became a rich country. This made countries such as Britain, Italy and France also keen to do trade with India. Around this time, after the death of Aurangzeb in 1707, the condition of the Mughal Empire was not good.
- Small kingdoms sprang up in different parts of India. All this made it easier for European nations to find their footing in India.
- **Establishment of British Rule in India**
  - India was a rich country then Mughal kings were growing weak. Apart from Portugal, other European nations such as Holland, France and England also started trading here.
  - In order to trade with India English traders set up the East India Company (EIC) in 1600. This company first set up business establishments in Surat, Chennai, Kolkata and Mumbai.
  - In the battle of Plassey in 1757 Nawab Siraj ud-daulah of Bengal was defeated. The company took possession of Bengal. This victory was the beginning of British Empire in India.
  - After the battle of Buxar in 1764. The company became the zamindar of Bihar, Bengal and Orissa. It took control of a major part of India. In order to collect money the British now started committing atrocities on the people.
  - After his death, his son Tipu Sultan kept the English engaged in battles. He kept fighting for two years till his death in the battlefield. The British started grabbing the kingdoms of the Indian rulers. This happened with the Nawab of Oudh and the queen of Jhansi.
  - To maintain their rule in India the British adopted the policy of divide and rule and tried to harm the Hindu-Muslim unity.
  - This anger finally burst out in the shape of 1857 revolt. This revolt was spread across a major part of the country. In Indian history this revolt is termed as the first war of independence.

## Do You Know?

- The doctrine of Subsidiary Alliance was introduced by Lord Wellesley, the British Governor-General of India from 1798 to 1805. The Nizam of Hyderabad was the first to enter into such an alliance in 1798.
- Warren Hastings was the first governor general of British India.

- **Revolt of 1857**
  - There was anger in India's farmers, workers, weavers, nawabs and kings against the British. in British Empire in India.
  - The Indian soldiers in the British army were also angry at the unequal treatment given to them. On 29 March, 1857 a sepoy named Mangal Pandey in the Barrackpore branch of the Bengal regiment of the British army started the revolt. He refused to fire the cartridges greased with the lard of cow and pig.
  - The soldiers had to bite these cartridges with their teeth in order to fire them. Mangal Pandey shot dead a British officer. He was sentenced to death.
  - When this news reached Meerut cantonment the soldiers over there revolted on 10th May, 1857. Many Englishmen were killed. Imprisoned soldiers were set free. The sepoys reached Delhi the next day. They took control of the Red Fort and declared the old king Bahadur Shah Zafar as the emperor of India.
  - The fire of revolt spread all across North India. Peshwa Nana Sahib in Kanpur, Rani Laxmi Bai of Jhansi and Tantya Tope in Central India, Begum Hazrat Mahal in Lucknow and Kunwar Singh in Bihar led the revolt. In Allahabad, Bundelkhand, Kanpur, Delhi, Awadh, Ruhelkhand and parts of Bihar apart from the soldiers even the common people took part in this fight.
  - The mass killings of Britishers started in many towns. For the first time kings, soldiers and the common people fought together for freedom.
  - However, though fought bravely, the revolt could not succeed. This was because the Britishers had modern arms whereas the Indians fought with bows and arrows, axes, swords, spears etc.
  - Nevertheless, the revolt shook the foundations of the East India Company. Queen Victoria of England took the reins of administration of India in her own hands in 1858.
  - The rule of the East India Company in India came to an end. After 1857 the Viceroy became the ruler of India on behalf of the British government.
  - At this time Maharaja Ranjit Singh was the ruler of Punjab. He extended the Sikh empire by taking control of Kangra, Cuttack, Multan and Peshawar. Cleverly Ranjit Singh signed a treaty with the British.
  - Because of the treaty, for a long time, the British could not go to the west through Punjab. Although powerful yet the Marathas, Nizam and Raja Ranjit Singh could never unite against the British. This made it easy for the British to extend their empire.

- **Towards Freedom**
  - The 1857 fight for independence did not stop. The atrocities and exploitation by the Britishers increased. The struggle for independence also continued though its method changed. People realized that till the British were ruling the country they could not be happy.
  - In 1885 a British officer named Allen Octavian Hume founded the Indian National Congress (INC). In the beginning the aim of the congress was to attract the British attention towards the condition of the Indians.
  - Through the efforts of Dada Bhai Naoroji and Gopal Krishna Gokhale Indians got a platform in the form of the congress.
  - Gradually the number of members of the Congress started increasing. Apart from the educated, even the common man started joining it. Men of new ideas such as Bal Gangadhar Tilak, Madan Mohan Malviya, Lala Lajpat Rai, Arvind Ghosh, Ajmal Khan and Bipin Chandra Pal joined the Congress.
  - At the time of the growth of nationalist sentiment, Mohammad Iqbal wrote the song 'Sare Jahan Se Achcha Hindustan Hamara' in 1904. It is called Tarana-e-Hind.
  - With their coming the Congress was divided into two groups: Moderates and Radicals. Those with revolutionary ideas were in the Radical group while those who wanted to confront the British in peaceful ways were a part of the moderate group.
  - In the meantime, in 1916 Mahatma Gandhi became active in Indian politics. He had already faced the British in South Africa. The Congress gave the reins of the freedom movement in the hands of Mohandas Karamchand Gandhi. Later he was known as Mahatma Gandhi.
  - Mohandas Karamchand Gandhi had lived in Africa for 20 years. Over there he had seen the British discriminating against and committing atrocities on those with dark skin and also on Indians.
  - Lakhs of people joined this movement. Angered by police misbehaviour, agitators set fire to a police station in a place in Uttar Pradesh called Chauri Chaura. A police station was set on fire. Some policemen died in this incident. Gandhiji recalled the movement.
  - In 1917 Gandhiji started the Satyagraha Movement in Champaran district of Bihar in protest against atrocities on farmers by the British. It was a peaceful movement. In this peaceful movement Gandhiji was victorious.
  - On 13 April, 1919 in Amritsar's Jallianwala Bagh British soldiers opened fire raining bullets at the people assembled peacefully. Hundreds of unarmed people were killed. After this incident patriotic revolutionaries got together.
  - Revolutionaries such as Chandra Shekhar Azad, Bhagat Singh, Ram Prasad Bismil, Batukeshwar Dutt, Ashfaque Ullah Khan, Rajguru and Sukhdev kept the torch for freedom lit and aflame.
  - In 1920 Gandhiji launched the Non Cooperation Movement to oppose the Rowlatt Act and the Jallianwala

Bagh incident. This rendered the government handicapped.

- In 1929 Jawaharlal Nehru made a demand for 'Purna Swaraj' which means full independence from British rule. At that time only the government had the right to make salt.
- On 6 April, 1930 Gandhiji completed his Dandi March by breaking the 'salt law'. This is known as the Civil Disobedience Movement.
- In 1942 under the leadership of Gandhiji the people launched the Quit India Movement. Gandhiji said that we would either gain independence or die. The Azad Hind Fauj of Subhash Chandra Bose also engaged the British army.
- Finally on 15 August, 1947 India gained independence from the British Empire. As India's first Prime Minister Pandit Jawaharlal Nehru unfurled the tricolour from the ramparts of the Red Fort in Delhi.
- Since then every year 15 August is celebrated as Independence Day. We gained this freedom after a lot of struggle. We should protect it with our lives. It is said that even in our dreams slavery is not a happy situation.

## Important Personalities of the Freedom Struggle

- **Annie Besant**
  - Founded the Theosophical Society in India and started the Home Rule League.
  - Established Central Hindu School and College at Banaras.
  - National women's day is celebrated every year on 13 February in her memory.
  - President of the Calcutta Session of INC, AD 1917.
- **Lala Lajpat Rai**
  - He was a great freedom fighter of India and a member of the extremist trio of Congress 'Bal Lal Pal'. Along with Lala Hansraj, he established Dayanand Anglo Vedic Colleges all over the country.
- **Chandra Skekhar Azad**
  - He was a famous revolutionary activist, member of the Hindustan Republican Association and leader of the Hindustan Social Republican Army.
  - He was involved in the Kakori Conspiracy of 1925, Second Lahore Conspiracy, the Delhi Conspiracy, the killing of Saunders in Lahore and the Central Assembly bomb episode.
- **Lal Bahadur Shastri**
  - He was born in Varanasi in 1904 in a Kayastha family.
  - He gave up his surname Srivastava and adopted the educational title Shastri in protest against casteism. He became the Prime Minister of the country after the death of Jawaharlal Nehru in 1964.
  - He gave the slogan Jai Jawan Jai Kisan.
  - He died under suspicious circumstances in Uzbekistan in 1966.
- **Dadabhai Naoroji**
  - First to demand 'Swaraj' in the Calcutta Session of INC, 1906.
  - First Indian to be selected to the "House of Commons" on Liberal Party ticket.
  - He highlighted the draining of wealth from India by the British and its effect in his book "Poverty and un-British Rule in India "(1901).
  - He was known as "Grand Old Man of India"
- **Dr. B.R. Ambedkar**
  - He founded the Depressed Classes Institute (1924) and Samaj Samata Sangh (1927).
  - Participated in all the Three Round Table Conferences and signed the Poona Pact with Gandhiji in 1932.
  - Chairman of the Drafting Committee of Indian Constitution.
  - As the first Law Minister of Independent India, he introduced the Hindu Code Bill.
- **Dr. Rajendra Prasad**
  - Founded the National College at Patna.
  - Minister in charge of Food and Agriculture in the Interim Government (1946).
  - President of the Constituent Assembly.
  - First President of the Indian Republic.
  - Honoured with 'Bharat Ratna' in 1962.
- **Gopal Krishna Gokhale**
  - Gandhiji regarded him as his political guru.
  - President of the Banaras Session of INC, 1905, supported the Swadeshi Movement.
  - Founded the Servants of Indian Society in 1905.
- **Bal Gangadhar Tilak**
  - Bal Gangadhar Tilak was the top leader of India during the freedom struggle. He belonged to the extremist group. He gave the slogan 'Swaraj is my birth right, I will take it'.
  - He made Ganapati Puja and Shivaji Jayanti as a public festival.
- **Jawaharlal Nehru**
  - He was born in November 1889 in Prayagraj. His birthday is celebrated as Children's Day in India.
  - He started a newspaper named 'National Herald'.
  - He was appointed the chairman of the first Planning Committee of India.
  - General Secretary of INC in 1928 and its President in 1929.
  - The Independence resolution was passed under his Presidentship at the Lahore Session.
  - First Prime Minister of Republic India (from 1947 to 1964), also known as architect of Modern India.
  - He authored the Doctrine of Panchsheel and believed in the policy of non-Alignment.
- **Rabindranath Tagore**
  - He founded Shantiniketan near Bolpur on December 22, 1901.
  - He wrote 'Gitanjali', which fetched him the Nobel Prize in 1913.

- In 1915, the British Crown granted him a 'knighthood' which he renounced after the Jallianwala Bagh Massacre.
- His compositions were chosen as National Anthem by two nations:
  (i) India - Jana Gana Mana
  (ii) Bangladesh - Amar Shonar Bangla

- **Sarojini Naidu**
  - Popularly known as the "Nightingale of India", she was a nationalist and poetess from Uttar Pradesh.
  - She participated in the Dandi March with Gandhiji and presided over the Kanpur Session of Congress in 1925.
  - She was the first woman to become the Governor of Uttar Pradesh State.
- **Mahatma Gandhi**
  - Mahatma Gandhi was born in 1869 in Porbandar, Gujarat. His father's name was Karamchand Gandhi.
  - He advocated for non-violent civil disobedience and was a key figure in India's struggle for independence from British colonial rule. He is called the father of India.
  - He returned to India from South Africa in 1915. Then he established 'Sabarmati Ashram' in Ahmedabad. Gandhiji first used Satyagraha in Champaran in 1917. It was against the Tinkathia system.
  - Mahatma Gandhi gave the slogan 'Do or Die'.
  - Mahatma Gandhi did the Dandi March to break the salt law.
  - He edited and published news papers and magazines like Indian opinion, Navjeevan, Young India, Harijan.
  - He started his political career in 1917 from Champaran in Bihar.
  - He led many major campaigns like the Non-Cooperation Movement, Civil Disobedience Movement and Quit India Movement. On January 30, 1948, Mahatma Gandhi was assassinated by traitor Nathuram Godse. This day is celebrated as Martyr's Day.
- **Sardar Vallabh Bhai Patel**
  - He was a key figure in the Indian independence movement and played a key role in the integration of the princely states of India into a united nation.
  - He served as India's first deputy Prime Minister and Minister of Home Affairs after independence.
- **Subhash Chandra Bose**
  - He was born on 23 January 1897 in Cuttack, Odisha. His birthday is celebrated as Parakram Diwas. He broke away from the Congress in 1939 and formed the Forward Block.
  - He gave the slogan " Dilli chalo" and "You give me blood, I will give you freedom."
  - He established Azad Hind Fauz in 1943 in Singapore under the leadership of Captain Mohan Singh. He became its first commander.
- **Bhagat Singh**
  - A socialist revolutionary, he played a key role in the Indian independence movement and is considered a national hero for his acts of rebellion against British colonial rule. He formed the Naujawan Bharat Sabha in 1924.
  - He advocated for the use of violence as a means of achieving independence.
  - He threw a bomb the Central Legislative Assembly in 1928.
  - 'He wrote the book 'Why I am an Atheist' and gave the slogan 'Inquilab Zindabad'. The day of his hanging is celebrated as Martyrs Day in India.
- **Rani Lakshmibai**
  - A queen of the Maratha-ruled state of Jhansi in North India, She was one of the leading figures of the Indian Rebellion of 1857 and became an icon of resistance to British rule in India.
- **C. Rajagopalachari**
  - He served as the last Governor-General of India before it became a republic and was the Chief Minister of Madras state.
  - He started civil disobedience movement in Tamil Nadu.
- **Bankim Chandra Chattopadhyay**
  - Composed Vande Mataram, the national song of India.
- **Madan Mohan Malaviya**
  - Pandit Madan Mohan Malaviya founded the Central Hindu College in 1917 as part of educational reforms in India, which later developed into Banaras Hindu University.

## Social Reformers of India

### Raja Rammohan Roy

- Rammohan Roy (1772-1833) was one of the earlier reformers influenced by the Western ideas to initiate reforms. He was a great scholar, well-versed in Sanskrit, Arabic, Persian, and English apart from his knowledge in his mother tongue, Bengali.
- He founded Atmiya Sabha in 1915.
- His campaign played a key role in forcing Governor-General William Bentinck's legislation abolishing sati in 1829.
- He is called the "father of Indian Nationalism" and "the new morning star".
- A Vedanta college was opened in 1825. Raja Ram Mohan Ray helped in the opening of the Hindu college in Calcutta for higher learning.
- He also started a Bengali newspaper called Samvad Kaumudi.
- Rammohan Roy founded the Brahmo Samaj on 20 August 1828. He opened a temple in Calcutta, where there was no image.

### Maharishi Debendranath Tagore

- After the death of Rammohan Roy (1833), Maharishi Debendranath Tagore (1817-1905), the poet Rabindranath Tagore's father, carried on the work.

### Keshub Chandra Sen

- Debendranath was a moderate reformer. But his younger colleagues in the Sabha were in favour of rapid change. The most prominent of these was Keshab Chandra Sen, (1838-84) who joined the movement in 1857. But in 1866 the Brahmo Samaj split.

- Keshub left the Brahmo Samaj and founded a new organisation, the Adi Brahma Samaj.

### Ishwar Chandra Vidhyasagar

- Another outstanding reformer in Bengal was Ishwar Chandra Vidyasagar (1820-1891). He was the principal of Calcutta Sanskrit college. He devoted his entire life for the welfare of child widows of Hindu society. As a result of the movement and practices led by Vidyasagar, the then Governor General Lord Dalhousie passed the Widow Remarriage Reform Act 1856.

### Swami Dayanand Saraswati and Arya Samaj

- The Arya Samaj led the reform movement in North India and Punjab. It was founded (1875) in Bombay by an itinerant ascetic, Swami Dayanand Saraswati (1824-83). He was born in Maurvi, Gujarat.
- Swami Dayanand later settled in Punjab to propagate his views.
- He gave the slogan "Back to the Vedas".
- The primary achievements of the Arya Samaj were in the field of social reform and the spread of education. The Arya Samaj also started several Dayanand Anglo-Vedic (DAV) schools and colleges.

### Swami Vivekananda

- Narendra Nath Datta (l863-1902), later known as Swami Vivekananda, was the prime follower of Ramakrishna Paramahansa. His birthday is celebrated as National Youth day in India. He died in 1903 at the age of 39.
- He gave the call for 'Return to the Gita and founded the Ramakrishna Mission.
- He became famous for his addresses on Hinduism at the 1893 World Congress of Religions in Chicago.

### Jyotiba Phule

- Jyotiba Govindrao Phule was born in 1827 in Maharashtra to an agrarian family which was classified as a Shudra. He opened the first school for the so-called 'untouchables' in Poona in 1848, supported by his wife Savitribai Phule.
- He launched the Satyashodhak Samaj (Truth-Seeker Society) in 1873 to inspire the non-Brahmin masses to self-respect. It was founded with the aim of liberating the so-called lower castes and protecting them from exploitation and oppression.
- He was greatly influenced by the book “The Nation Man" by American writer Thomas Paine.
- In 1873, Jyotirao Phule dedicated his book 'Gulamgiri' to the American movement for emancipation of slaves. He compared the condition of black slaves in America to the condition of the so-called lower castes in India.
- In his famous book "Gulamgiri", he said that 'the upper castes have no right to the land, because in fact the land belongs to the indigenous people, *i.e*. the so-called lower castes.

### Dr. Bhimrao Ambedkar

- Ambedkar was born in a Mahar family in Mau, Madhya Pradesh.
- In 1927, Ambedkar launched a temple entry movement, in which his Mahar caste followers participated.
- Ambedkar founded the Independent Labour Party in August 1936 and the All India Scheduled Castes Federation in July 1942.
- He was appointed as the first Law Minister of India in 1947. He is known in India as Baba Saheb and the architect of the Constitution.
- His birthday on 14 April is celebrated as Ambedkar Jayanti and his death anniversary on 6 December.

### Sir Syed Ahmad Khan

- As part of Muslim religious reforms, Sir Syed Khan founded the Muslim-Anglo Oriental College in 1875, which later developed into Aligarh Muslim University.

## Important Questions

**1.** Who was the first Governor General of Independent India ?
(A) Rajagopalachari (B) Mahatma Gandhi
(C) Lord Mount Batten (D) Jawaharlal Nehru

**2.** Who has written ‘Sare Jahan Se Accha’?
(A) Rabindra Nath Tagore
(B) Bankim Chandra Chatterjee
(C) Muhammad Iqbal
(D) Subhash Chandra Bose

**3.** Who is known as ‘Iron man’ of India ?
(A) Jawaharlal Nehru (B) Mahatma Gandhi
(C) Sardar Patel (D) Subhash Chandra Bose

**4.** The English Government introduced the policy of divide and rule to :
(A) educate Indian (B) encourage nationalism
(C) reform Indians (D) suppress nationalism

**5.** Purna Swaraj means :
(A) non-cooperation
(B) civil disobedience
(C) boycott
(D) complete independence

**6.** Aligarh Muslim University is associated with :
(A) Rabindranath Tagore (B) Tansen
(C) Kalidas (D) Syyed Ahmad Khan

**7.** The Ashram of Gandhiji is situated in :
(A) Gandhi Nagar (B) Sabarmati
(C) Surat (D) Vardha

**8.** What is the nickname of Rabindranath Tagore ?
(A) Mahamana (B) Gurudev
(C) Badshah Khan (D) None of these

**9.** Dayanand Saraswati was the founder of which of the following missions ?
(A) Arya Samaj
(B) Prarthana Samaj
(C) Brahmo Samaj
(D) Chinmaya Mission

**10.** Which kingdom first used elephants in battles ?
(A) Kosal (B) Magadha
(C) Palas (D) Avanti

**11.** When did Jallianwala Bagh massacre take place ?
(A) 1919 (B) 1918
(C) 1917 (D) 1939

**12.** When did Quit India Movement take place ?
(A) 1943 (B) 1942
(C) 1944 (D) 1945

**13.** In which year did Gandhiji come to India from South Africa ?
(A) 1916 (B) 1917
(C) 1915 (D) 1919

**14.** Who abolished the practice of 'Sati' during the British period ?
(A) Dalhousie (B) Wellesley
(C) William Bentinck (D) Mayo

**15.** In which state the ancient city of Lothal situated ?
(A) Gujarat (B) Punjab
(C) Haryana (D) Odisha

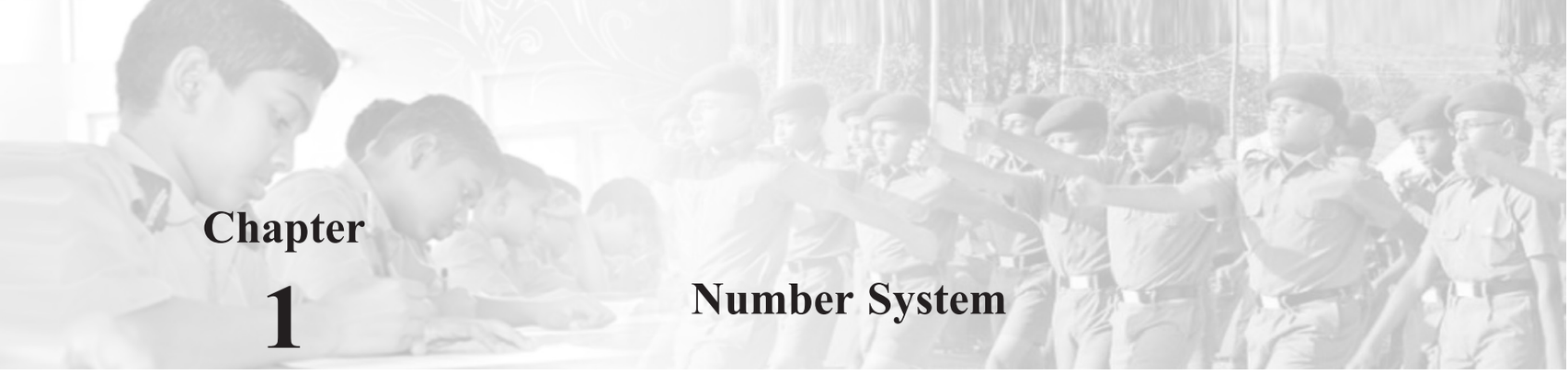
**16.** Where was the 'Azad Hind Fauj' established ?
(A) Singapore (B) India
(C) Canada (D) USA

**17.** Who introduced "Subsidiary Alliance" policy in India ?
(A) Lord William Bentinck
(B) Lord Auckland
(C) Lord Wellesley
(D) Lord Dalhousie

**18.** Who is known as the 'Tiger of Mysore' ?
(A) Tipu Sultan (C) Sabdar Ali
(B) Haider Ali (D) Fadak Haider

**19.** Who was not associated with the Champaran movement ?
(A) Jaiprakash Narayan
(B) Dr. Rajendra Prasad
(C) Anugrah Narayan Singh
(D) None of these

❑❑



# Chapter 1 Number System

## 1. MATHEMATICAL TERMINOLOGY

**I. Digits :** 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 are defined as digits in Mathematics. We can create many numbers by using these digits. For example: 10, 123, 456, 789, etc.

**II. Number System :** There are mainly two types defined in the number systems These are :

**(i) Decimal Number System :** It contains 0 to 9 digits. That's why it is called *decimal number system*. In this system, the numbers is read and written in two ways :

- **Indian number system**

  In the Indian number system or Hindi-Arabic system, the numbers are read and written as per their place values. These numbers are read as per the following table.

| Periods | Crores | | Lakhs | | Thousands | | Ones | | |
|---|---|---|---|---|---|---|---|---|---|
| Value | 10,00,00,000 (Ten Crores) | 1,00,00,000 (Crore) | 10,00,000 (Ten Lakhs) | 1,00,000 (Lakh) | 10,000 (Ten Thousands) | 1,000 (Thousand) | 100 (Hundred) | 10 (Ten) | 1 (One) |
| | $10^8$ | $10^7$ | $10^6$ | $10^5$ | $10^4$ | $10^3$ | $10^2$ | $10^1$ | $10^0$ |

**Example :** Number 51,45,42,786 can be read as Fifty-one Crores Forty-five Lakhs Forty-two Thousands Seven Hundred and Eighty-six. It is also called **number name.**

**Unit Conversions :**

- 1 tens = 10 units
- 1 Hundred = 10 tens = 100 units
- 1 Thousand = 10 Hundreds = 100 tens = 1000 units
- 10 Thousand = 100 Hundreds = 1000 tens
- 1 Lakh = 100 Thousands = 1000 Hundreds = 10000 tens
- 10 Lakhs = 1000 Thousands = 10000 Hundreds = 100000 tens

- **International number system**

  In International number system, the numbers are read and written as per the following table.

| Periods | Millions | | | Thousands | | | Ones | | |
|---|---|---|---|---|---|---|---|---|---|
| Value | 100,000,000 (Hundred Millions) | 10,000,000 (Ten Millions) | 10,00,000 (Millions) | 100,000 (Hundred Thousand) | 10,000 (Ten Thousand) | 1,000 (Thousand) | 100 (Hundred) | 10 (Ten) | 1 (One) |
| | $10^8$ | $10^7$ | $10^6$ | $10^5$ | $10^4$ | $10^3$ | $10^2$ | $10^1$ | $10^0$ |

**Example :** Number 14,542,786 can be read as Fourteen Million Five Hundred Forty-two Thousand Seven Hundred Eighty-six.

**(ii) Roman Number System :** In this system, numbers are represented by Latin alphabets. The Roman numerals used in, are based on seven symbols or letters.

| **Roman System** | I | V | X | L | C | D | M |
|---|---|---|---|---|---|---|---|
| **Hindu Arabic System** | 1 | 5 | 10 | 50 | 100 | 500 | 1000 |

**Example :** 25 can be written as XXV and 101 as CI.

**Note**

- If any symbol is repeated, its value is the sum of the number of times it occurs.
- No symbol is repeated more than three times.
- Symbols V, L and D are never repeated.
- If a symbol with a smaller value is placed to the right of a symbol with a larger value, the smaller value is added to the larger value.
- If a symbol with a smaller value is placed to the left of a symbol with a larger value, then the smaller value is subtracted from the larger value.
- The values of symbols V, L and D are never subtracted. The symbol I can be subtracted from V and X. The symbol X can be subtracted from L, M and C.

## 2. DIGITS OF NUMBER

- **Units :** Digit 0 to 9 are called Unit digits. The smallest and the largest number of 1-digit are 0 and 9 respectively.
- **Tens :** The numbers from 10 to 99 are called ten numbers. The smallest and the largest number of 2-digit are 10 and 99 respectively.
- **Hundred :** The numbers from 100 to 999 are called hundred numbers. The smallest and the largest number of 3-digit are 100 and 999 respectively.
- **Thousand :** The numbers from 1,000 to 9,999 are called thousand numbers. The smallest and the largest number of 4-digit are 1000 and 9999 respectively.
- **Ten thousand :** The numbers from 10,000 to 99,999 are called ten thousand numbers. The smallest and the largest number of 5-digit are 10,000 and 99,999 respectively.
- **Lakh :** The numbers from 1,00,000 to 9,99,999 are called lakh numbers. The smallest and the largest number of 6-digit are 1,00,000 and 9,99,999 respectively.
- **Ten Lakh :** The numbers from 10,00,000 to 99,99,999 are called ten lakh numbers. The smallest and the largest number of 7-digit are 10,00,000 and 99,99,999 respectively.

- **Crore :** The numbers from 1,00,00,000 to 9,99,99,999 are called crore numbers. The smallest and the largest number of 8-digit are 1,00,00,000 and 9,99,99,999 respectively.

## 3. PLACE VALUES AND FACE VALUES

- **Place value :** Place value helps us to determine the value of numbers. Our (base-10) number system contains numerals or digits only from 0 to 9, but we often need to use numbers greater than 9. We show numbers greater than 9 by using place value. Place value refers to the value of each digit in a number.

  **Example :** In a number 489765, place value of 7 will be 7 × 100 units, *i.e.*, 700. Similarly, the place value of 8 will be 8 × 10,000 = 80,000.

- **Face value :** The actual value of a digit in a number is the digit itself. The place value of the digit is ignored in the number.

  **For example,** in a number 59,438, the face value of 4 is 4, face value of 9 is 9, etc.

**Note**

If $x$ and $y$ be the tens digit and unit digit respectively, then the 2-digit number formed by these digits will be $10x + y$.

## 4. COMPARISON OF NUMBERS

- **When both numbers have unequal number of digits**

  The number having more digits is greater. It means

  5-digit number > 4-digit number > 3-digit number

  **Example :** Find out which is greater 5429683 or 65245893?

  **Solution :** Since, the first number 5429683 is of 7-digit number and the second number 65245893 is of 8-digit Therefore, the second number is greater than the first number.

- **When both numbers have equal number of digits**

  In case of the equal number of digits, we have to check the place value of the left-most digit of both numbers. If the digits of both numbers are also equal, then we move to its next digit placed on the right side and repeat the process until we get the desired result.

  **Example:** Arrange the following numbers in ascending order.

  5403100, 5460860, 5458087, 5420378

  **Solution:** At first, we check the place value of the leftmost digit of each number. Then repeat the same process until we get the answer. Here, in each number, two leftmost digits are equal. After that, we check ten thousand place values and then arrange the digits in ascending order. Hence, we get

  **540**3100 < **542**0378 < **545**8087 < **546**0860

## 5. CLASSIFICATION OF NUMBERS

There are several types of numbers exist in the number system for different purposes. These numbers are classified into different groups according to their properties. These are –

- **Natural Numbers :** Counting numbers starting from 1, 2, 3…, etc., are called natural numbers. It is represented by capital letter **N**. Its set is shown as

  $$N = \{1, 2, 3, 4, 5\ldots\}$$

- **Whole Numbers :** All natural numbers along with 0 is known as whole numbers. It is represented by capital letter **W**. Its set is shown as

  $$W = \{0, 1, 2, 3, 4\ldots\}$$

- **Even and Odd Numbers :** A number is even if it is a multiple of two, and is odd otherwise. **Even numbers** are denoted by capital letter **E** and odd **numbers** are denoted by capital letter **O**.

  $E = \{2, 4, 6, 8\ldots\}$ and $O = \{1, 3, 5, 7\ldots\}$

- **Integers :** Positive and negative counting numbers, with zero are called integers. Integers are denoted by capital letter Z.

  $$Z = \{\ldots -3, -2, -1, 0, 1, 2, 3\ldots\}$$

- **Prime Numbers :** An integer with exactly two positive divisors: itself and 1, is called prime number. For example, 2, 3, 5, 7, 11, 13…etc., are the **prime numbers**. 2 is the smallest prime number.

- **Composite Numbers :** All those numbers greater than 1 that are not prime are called **composite numbers**. For example, 4, 6, 8, 9, 10, etc., are few composite numbers.

- **Rational Numbers :** Numbers that can be expressed as a ratio of an integer to a non-zero integer. Moreover any repeating or terminating decimal represents a **rational number** Rational numbers are denoted by capital letter **Q**. All integers are rational, but the converse is not true.

  $$Q = \left\{\ldots \frac{2}{3}, -1, 0, \frac{1}{4}\ldots\right\}$$

- **Irrational Numbers :** All those real numbers that are not rational *i.e.,* those numbers that can not be written as a ratio as two integers are called irrational numbers. Moreover these numbers goes on forever without repeating. Irrational numbers are denoted by **I**.

  $$I = \left\{\ldots \frac{2}{3}, \sqrt{2}, \sqrt{3}\ldots\right\}$$

- **Real Numbers :** Positive, negative, zero and all types at decimal numbers are called real numbers. All rational numbers are real, but the converse is not true. These because they are not imaginary numbers.

## 6. APPROXIMATE VALUES OF NUMBERS

Place values are considered to be the base to find approximation values in numbers. Approximation value of few place values is determined by the following methods :

- **Approximate value nearest tens place :** If the number at units place is less than 5 then it is rounded of zero otherwise add 1 to the tens place and keeps unit place as zero.

  **Example :** 73 can be rounded off to 70, 156 can be rounded off to 160 and 4265 can be rounded off to 4270.

- **Approximate value nearest hundred place :** If the number at tens place is less than 5 then it is rounded of zero otherwise add 1 to the hundred place and keeps tens place and unit place as zero.

  **Example :** 510 can be rounded off to 500, 9573 can be rounded off to 9600 and 53650 can be rounded off to 53700.

- **Approximate value nearest thousand place :** If the number at hundred place is less than 5 then it is rounded of zero otherwise add 1 to the thousand place and keeps hundred place, tens place and unit place as zero.

  **Example :** 6240 can be rounded off to 6000, 17573 can be rounded off to 18000 and 553650 can be rounded off to 554000.

## 7. PREDECESSOR AND SUCCESSOR OF A NUMBER

We start counting from the number 1. Hence 1 is the first natural number and the next natural number is 2 which is obtained by adding 1 to the first number. Hence, numbers are represented in two ways according to their orderliness :

- **Antecedent Number :** The natural number immediately preceding a natural number is its predecessor.

  **Example :** Predecessor number of 65 = 65 – 1 = 64
  Predecessor number of 127 = 127 – 1 = 126

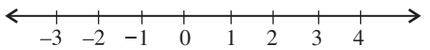
- **Subsequent Number :** The natural number immediately next to any natural number is its successor.

  **Example :** Successor number of 785 = 785 + 1 = 786
  Successor number of 109 = 109 + 1 = 110

## 8. INTEGERS

Integers are the collection of all positive and negative natural numbers including zero (0).

Representation of integers on number line :




- Numbers 1, 2, 3, 4, ..... are positive integers.
- Numbers –1, –2, –3, –4, ..... are negative integers.
- Zero (0) is neither negative nor positive.
- All positive integers lie to the right side of zero (0) and all negative integers lie to the left of zero (0).

**Predecessor and Successor Integers :** The integer, immediately to the left of an integer on the number line, is called its predecessor and the integer, immediately to the right of an integer on the number line, is called its successor.

**For example :** (i) The predecessor and successor of 2 are 1 and 3 repectively.

(ii) The predecessor and successor of –2 are –3 and –1 respectively.

(iii) The predecessor and successor of –1 and –2 and 0 respectively.

**Additive Inverse :** For any integers $a$,

$$a + (-a) = 0$$

So, $-a$ is the additive inverse of an integer $a$.

The sum of an integer and its additive inverse is always 0.

**For example,** (i) additive inverse of 6 = – 6

$\because$ $6 + (-6) = 0$

(ii) Additive inverse of – 8 = 8

$\because$ $(-8) + 8 = 0$

**Note**

- The additive inverse of a positive integer is a negative integer while the numerical value is the same.
- The additive inverse of a negative integer is a positive integer while the numerical value is the same.

## 9. FORMING NUMBERS

We can form the largest and smallest number using any given digits.

To form the largest number, arrange the digits in the descending order.

**For example,** the largest 8-digit number formed using the digits 3, 5, 1, 9, 8, 0, 4 and 2 is 9, 85, 43, 210.

To form the smallest number, arrange the digits in the ascending order.

**For example,** the smallest 8-digit number formed using the digits 3, 5, 1, 9, 8, 0, 4 and 2 is 1, 02, 34, 589.

We cannot put 0 as the first digit to form the smallest 8-digit number.

Hence, the smallest 8-digit number formed using the given digit is 1,02,34,589.

**Note**

- To find the greatest number up to given digits, then write the digit '9' equal to the number of the digits.

  **Ex. :** Greatest number of 3-digit = 999
  Greatest number of 5-digit = 99999

- To find the smallest number up to given digits, write the first digit '1' and then write '0' equal to the remaining the number of digits.

  **Ex. :** Smallest number of 4-digit = 1000
  Smallest number of 6-digit = 100000

## 10. DIVISIBILITY TEST OF NUMBERS

- **Divisibility by 2 :**

  If the unit digit of a number is any *i.e.*, 0, 2, 4, 6, 8, then the given number is divisible by 2.

  **Example :** 84, 786, 282, 1008, 5000……,etc., are divisible by 2.

- **Divisibility by 3 :**

  A number is divisible by 3, if the sum of all digits of the number is divisible by 3.

  **Example :** 786, here 7 + 8 + 6 = 21 (completely divisible by 3)

  So, the number 786 will be divisible by 3

- **Divisibility by 4 :**

  A number is divisible by 4, if the last two-digit of the number is divisible by 4.

  **Example :** 3464, here 64 is the last two-digit number which is divisible by 4.

  So, the number 3464 will be divisible by 4.

- **Divisibility by 5 :**

  A number is divisible by 5, if the unit digit of the number is either 0 or 5.

  **Example :** 3125, 2010, 2015, 6580……, etc. are divisible by 5.

- **Divisibility by 6 :**

  A number is divisible by 6, if the number is divisible by the numbers 2 and 3.

  **Example :** Test whether number 8202 is divisible by 6.

  (i) The unit digit of the number is 2 which is divisible by 2.

  (ii) The sum of digits of the number = 8 + 2 + 0 + 2 = 12 (divisible by 3)

  Since, it is clear from (i) and (ii) that the number 8202 is divisible by both 2 and 3. So, the number will be divisible by 6.

- **Divisibility by 7 :**

  Take the last digit of the given number and double it. Subtract this number from the rest of the digits in the original number. If this new number is either 0 or if it's a number that is divisible by 7, then the given number is also divisible by 7.

  **Example :** Test whether number 2492 is divisible by 7.

  **Solution:** Here, the unit digit of the number = 2

  $249 - 2 \times 2 = 245$ (divisible by 7). So, the number will be divisible by 7.

- **Divisibility by 8 :**

  A number is divisible by 8, if the last three-digit of the number is divisible by 8.

  **Example :** Test whether number 6288 is divisible by 8.

  **Solution:** Here, in the given number, 288 is the last three-digit number which is completely divisible by 8.

  So, the number 6288 will be divisible by 8.

- **Divisibility by 9 :**

  A number is divisible by 9, if the sum of its digits is divisible by 9.

  **Example :** Test whether number 7074 is divisible by 9.

  Sum of all digits of the number = 7 + 0 + 7 + 4 = 18 (divisible by 9).

  So, the number 7074 will be divisible by 9.

- **Divisibility by 11 :**

  A number is divisible by 11, if difference between the sum of digits at odd places and the sum of digits at even places, is divisible by 11.

  **Example :** Test whether number 86460 is divisible by 11.

  Sum of the all digits at even places in the number = 6 + 6 = 12

  Sum of the all digits at odd places in the number = 8 + 4 + 0 = 12

  Their difference = 12 – 12 = 0. So, the number 6288 will be divisible by 11.

## 11. SOME IMPORTANT EXAMPLES

**Example 1 :** Which of the following is the correct representation for number 99 ?

**Solution :** Roman number of 99 is XCIX.

**Example 2 :** Find the sum of 4-digit greatest number and 6-digit smallest number, each having 3 different digits.

**Solution :** Greatest number of 4-digit having 3 different digits = 9987

Smallest nubmer of 6-digit having 3 different digits = 100002

Required sum = 9987 + 100002

= 109989

**Example 3 :** Subtract 28,576 from the sum of the least and the greatest 5-digit number formed using the digits 3, 0, 5, 8 and 1.

**Solution :** Least number of 5-digit formed using the digits 3, 0, 5, 8, 1 = 10358

Greatest number of 5-digit formed using the digits 3, 0, 5, 8, 1 = 85310

Required answer

= (10358 + 85310) – 28576

= 95668 – 28576 = 67092

**Example 4 :** Which of the following are four consecutive composite numbers ?

(1) 22, 23, 24, 25

(2) 60, 61, 62, 65

(3) 56, 57, 58, 59

(4) 90, 91, 92, 93

**Solution :** We know that composite numbers are those numbers which have more than two factors.

(1) the number 23 is a prime number *i.e.* not a composite number.

(2) the number 61 is a prime number.

(3) the number 59 is a prime number.

(4) all the numbers 90, 91, 92, 93 are composite numbers, because the factors of these numbers are more than two.

Factors of 90 = 1, 2, 3, 5, 6, 9, 10, 15, 18, 30, 45, 90

Factors of 91 = 1, 7, 13, 91

Factors of 92 = 1, 2, 4, 23, 46, 92

Factors of 93 = 1, 3, 31, 93.

Hence, (4) is the correct answer.

**Example 5 :** Find the smallest five digit number using three different digits.

**Solution :** Smallest five digit number using three different digits is 10002.

**Example 6 :** Fill in the blank with the correct option.

CCCXC + LIX = ..... .

**Solution :** CCC XL + LIX

= 390 + 59

= 449

= CDXLIX

**Example 7 :** In a particular year, 76,43,872 students appeared for an exam. Out of them if 42,37,602 were girls, how many were boys?

**Solution :** Total students appeared = 76,43,872

Girls were = 42,37,602

The boys = Total students – girls

= 76,43,872 – 42,37,602

The number of boys were

= 34,06,270

# Important Questions

## 1. Mathematical Terminology

**1.** Which of the following is the correct representation for number 99 ?
(A) IC (B) XCVIII
(C) XCIX (D) L + XXXXIX

**2.** Fill in the blank with the correct option.
CCCXC + LIX = ..... .
(A) CCCCXLIX (B) CDXLIX
(C) CDCXLIX (D) CDXXXXIX

**3.** Seventy six lakh four thousand eighty three is written as ..... in the international number system.
(A) 7,640,083 (B) 76,483
(C) 7,60,483 (D) 76,04,083

**4.** Which of the following numbers in Roman Numerals is incorrect ?
(A) LXII (B) XCI (C) LC (D) XLIV

**5.** In Roman numeration, if a symbol is repeated, its value is not multiplied as many times as it occurs.
(A) True (B) False
(C) Cannot say (D) Both are equal

**6.** Write Roman numeral CDXXXIX in Arabic numeral.
(A) 439 (B) 449 (C) 529 (D) 539

**7.** Write Roman numerals CDXLIX in Arabic numerals :
(A) 569 (B) 449 (C) 549 (D) 469

**8.** Two lakh two thousand, in digits, is written as :
(A) 20200 (B) 200200 (C) 202000 (D) 22000

**9.** 16 lakhs, eight hundred thirteen is written as :
(A) 16813 (B) 160830 (C) 1600813 (D) 160713

**10.** Find the largest in the following.
(A) XLIII + XLIV (B) LXXIX – XXXIX
(C) XCIX – LXVIII (D) LVII + XL

**11.** One crore ten thousands six hundred eleven is written as :
(A) 10,10,611 (B) 10,10,10,611
(C) 1,00,10,611 (D) 100,00,10,611

**12.** The largest 3-digit roman number is :
(A) IXIXIX (B) CMIXIX
(C) CMXCIX (D) C MIIC

**13.** The roman numeral of 67 is :
(A) XLVII (B) LXVII (C) XXVII (D) DXVII

**14.** There are XC students in Class 8th. XL students are absent today. How many students are present (in roman numeral)?
(A) L (B) XL (C) LX (D) X

**15.** Write Roman numerals DXLIX in Arabic numerals.
(A) 569 (B) 549 (C) 369 (D) 469

**16.** Write 98 in Roman numerals.
(A) XCVII (B) XCVVI (C) XCVIII (D) XCVIV

**17.** The Roman numeral of 94 is?
(A) XCV (B) XCVI (C) XCIV (D) XCIII

**18.** Which of the following is the correct representation, using Roman Numerals of the number 199?
(A) ICC (B) CLXXXXIX
(C) CXCIX (D) ICCCD

**19.** A number written using Roman Numerals (XXI – XV) – VI + MCLXXIII is equal to :
(A) MCLXXIII (B) MCLXVII
(C) MCL (D) MCXLIII

**20.** 30009 is same as :
(A) 30 ten thousands and 9 tens
(B) 30 thousands and 9 hundreds
(C) 3 ten thousands and 9 ones
(D) 3 ten thousands and 9 tens

## 2. Digits of Numbers

**21.** Find the sum of 4-digit greatest number and 6-digit smallest number, each having 3 different digits.
(A) 109999 (B) 109989 (C) 110020 (D) 1000989

**22.** Subtract 28,576 from the sum of the least and the greatest 5-digit number formed using the digits 3, 0, 5, 8 and 1.
(A) 67,092 (B) 84,563 (C) 68,932 (D) 73,695

**23.** Choose the smallest possible 7-digit number that you can from using each of the following digits 5, 1, 8, 0, 3 :
(A) 1310058 (B) 1001358 (C) 1130058 (D) 1000358

**24.** Find the difference between the greatest and the least number that can be written using the digits 6, 2, 7, 4, 3 each only once.
(A) 52965 (B) 53965 (C) 52956 (D) 52659

**25.** The greatest 8-digit number using the digits 5, 8, 7, 5, 2, 0, 6 and 1 is :
(A) 88765210 (B) 87765210
(C) 88765521 (D) 87655210

**26.** The smallest odd number formed by using the digits 1, 2, 3, 4 and 5 is :
(A) 12345 (B) 12435 (C) 12453 (D) 12534

**27.** Find a 4 digit number, formed by different digits, in which 9 is at the place of tens ?
(A) 1092 (B) 1290 (C) 2091 (D) 2190

**28.** The smallest even number formed by using the digits 9, 5, 0, 2, 4 is .....
(A) 20594 (B) 20459 (C) 02594 (D) 02459

**29.** What is that smallest number made up of by using the digits 4, 5, 0 and 3 (The repitition of digits is possible) ?
(A) 30450 (B) 30045 (C) 34500 (D) 30540

**30.** The difference of largest and smallest number of 5 digits which is made up of 0, 3, 6, 8 and 9 digits. (each digit can be used once only) ?
(A) 94941 (B) 61821 (C) 61740 (D) 67941

**31.** The largest even number of 5 digits, which is made up of 3, 0, 5, 7 and 8 is :
(A) 83570 (B) 85703 (C) 87530 (D) 87350

**32.** The largest number of 5 digits which is made by 9, 6, 3 and 0 (any digit can be used twice) is :
(A) 96630 (B) 96300 (C) 99630 (D) 90963

**33.** What is the largest even number of 5 digits formed by digits 4, 0, 6, 7, 3 & 8 ?
(A) 70648 (B) 87643 (C) 87634 (D) 87640

**34.** Find the smallest number of four digits whose each every digit is different ?
(A) 1000 (B) 1023 (C) 1032 (D) 1230

**35.** The smallest number of 5 digit formed with the digits 3, 0, 8, 4 and 1.
(A) 10843 (B) 10834 (C) 10348 (D) 18034

**36.** Find the largest number which can be formed by 3, 8, 7, 9 ?
(A) 8973 (B) 9873 (C) 9783 (D) 3789

**37.** Write the smallest 3-digit number which will not change on reversing the digits
(A) 100 (B) 888 (C) 999 (D) 101

**38.** The greatest 5-digit number is :
(A) 99999 (B) 100000 (C) 98765 (D) 56789

**39.** The greatest 8-digits number with given digits 5, 8, 7, 5, 2, 0, 6 and 1 is :
(A) 88765210 (B) 87765210
(C) 88765521 (D) 87655210

## 3. Place Value and face Value

**40.** In 563672, the place value of 6 at the ten thousands place is ..... times the place value of 6 at the hundreds place.
(A) 1000 (B) 100 (C) 10 (D) 10000

**41.** Sum of place values of the underlined digits in the given number is ..... .
$69\underline{5}28\underline{1}$ $5\underline{3}485\underline{7}3$
(A) 305071 (B) 300551 (C) 305017 (D) 3005071

**42.** What is the sum of the place value of 5 in the number 584356 ?
(A) 10 (B) 50050 (C) 5050 (D) 500050

**43.** Which digit has the maximum place value in the number 59368 ?
(A) 9 (B) 8 (C) 5 (D) 6

**44.** Place value of 7 in the number 9374293 is :
(A) 700 (B) 7000 (C) 70000 (D) 700000

**45.** What is the difference between the place value and face value of 7 in 329075?
(A) 63 (B) 36 (C) 49 (D) 490

**46.** Find the place value of 7 in 874213:
(A) 1000 (B) 7 (C) 74213 (D) 70000

## 4. Comparison of Numbers

**47.** Which of the following numerals are arranged in ascending order ?
(A) 6821, 6862, 6261, 2861
(B) 9075, 7905, 9701, 5907
(C) 10529, 12049, 12509, 15249
(D) 23124, 23213, 21467, 2764

**48.** Choose the correct option if number 52806, 52086, 52860, 52800 and 58260 are arranged in ascending order.
(A) 52086<52806<52860<52800<58260
(B) 52800<52860<52086<58260<52806
(C) 52086<52800<52806<52860<58260
(D) 52800<52806<52860<52086<58260

**49.** Which is largest number of the following four numbers ?
8080, 8800, 8008, 8880
(A) 8080 (B) 8008 (C) 8880 (D) 8800

**50.** Write the following in ascending order :
11023, 11032, 12031, 12013
(A) 11023, 12031, 12013, 11032
(B) 11032, 12013, 11023, 12031
(C) 11023, 11032, 12013, 12031
(D) 11032, 11023, 12013, 12031

**51.** Arrange the following numbers in ascending order :
98230, 98023, 89320, 98032
(A) 98230, 98023, 89320, 98032
(B) 89320, 98230, 98032, 98023
(C) 89320, 98032, 98023, 98230
(D) 89320, 98023, 98032, 98230

**52.** The descending order of the numbers 45405, 45450, 45504, 45449 is :
(A) 45504, 45450, 45449, 45405
(B) 45405, 45449, 45450, 45504

(C) 45450, 45504, 45405, 45449

(D) 45504, 45405, 45449, 45450

**53.** Which of the following number is the largest ?
45600, 45606, 46506, 40566
(A) 45600 (B) 45606 (C) 46506 (D) 10566

## 5. Classification of Numbers

**54.** A pair of twin prime number between 70 and 100 is ..... .
(A) 71, 73 (B) 79, 83 (C) 97, 99 (D) 87, 89

**55.** What is the sum of the first four prime numbers ?
(A) 10 (B) 11 (C) 26 (D) 17

**56.** Which of the following statement is correct ?
(A) Zero is an odd number
(B) Zero is an even number
(C) Zero is a prime number
(D) Zero is neither odd nor even number

**57.** The largest prime number of 2 digits is :
(A) 93 (B) 97 (C) 91 (D) 99

**58.** How many prime numbers of 2 digits will be there whose each digit is also a prime number ?
(A) 3 (B) 4 (C) 6 (D) 9

**59.** All natural numbers and 0 are called as ..... Numbers.
(A) Rational (B) Integers (C) Whole (D) Prime

**60.** The sum of the smallest even and smallest odd prime number is :
(A) A composite number (B) An even number
(C) A prime number (D) None of these

**61.** – 5 is a ..... .
(A) Integer (B) Prime number
(C) Composite number (D) None of the above

**62.** Which of the numbers are twin prime?
(A) (5, 7) (B) (18, 25) (C) (11, 17) (D) (23, 62)

**63.** The smallest natural number is :
(A) 0 (B) – 1 (C) 2 (D) 1

**64.** Sum of all the prime numbers between 10 and 25 is :
(A) 72 (B) 83 (C) 66 (D) 70

**65.** Which of the following numbers are co-prime ?
(A) (14, 35) (B) (18, 25) (C) (31, 93) (D) (23, 69)

**66.** By using the digit 9, 8 and 0 (When every digit can be used only once) how many natural numbers can be made ?
(A) 4 (B) 7 (C) 8 (D) 10

**67.** The even prime number is :
(A) 2 (B) 6 (C) 4 (D) 8

**68.** The sum of first eight prime numbers is?
(A) 76 (B) 78 (C) 77 (D) 79

**69.** I am a prime number. If you subtract 1 from me, I will become divisible by 9. Who am I ?
(A) 29 (B) 19 (C) 17 (D) 11

**70.** The smallest composite number is :
(A) 4 (B) 1 (C) 9 (D) 6

**71.** The sum of all prime numbers between 58 and 68 is
(A) 179 (B) 178 (C) 187 (D) 183

**72.** How many three-digit numbers are there in all ?
(A) 900 (B) 999 (C) 499 (D) 566

**73.** The sum of all prime number, less than 21, is :
(A) 77 (B) 67 (C) 41 (D) 48

**74.** Which of the following statements are NOT correct?
(1) Composite numbers are always even
(2) Prime numbers are always odd.
(3) Sum of two prime numbers is always prime.
(4) Product of two composite numbers is always composite.
(A) 1 and 4 only (B) 2 and 3 only
(C) 1, 2 and 3 only (D) 1, 2, 3 and 4

## 6. Approximate Value of Numbers

**75.** Rounding off 7348561 to the nearest hundred is ..... .
(A) 7348000 (B) 7348600
(C) 7348560 (D) 7348500

**76.** Estimate the product 5980 × 428 by rounding off each number to the nearest hundreds.
(A) 236000 (B) 240000
(C) 2400000 (D) 3000000

**77.** Round off 37507 to the nearest hundreds is :
(A) 37500 (B) 37000 (C) 38000 (D) 30000

**78.** Find the nearest value to ten thousands of 56789 and 98765–
(A) 59000, 10009 (B) 60000, 100000
(C) 59900, 10080 (D) 62000, 10675

**79.** The difference between the nearest thousands value of 14510 and the nearest Hundreds value of 8849 is :
(A) 5200 (B) 5700 (C) 6200 (D) 6150

**80.** What is nearest value to tens place of number 12056 ?
(A) 12000 (B) 12060 (C) 12100 (D) 12150

**81.** The expenditure of a family per month is as follows :
Kitchen = ₹ 9,378
Education = ₹ 3,780
Conveyance = ₹ 2,817
Sundry Expenses = ₹ 4,388.
Rounded off total monthly expenditure of the family to the nearest thousand is :
(A) ₹ 21,000 (B) ₹ 24,000
(C) ₹ 20,000 (D) ₹ 23,000

**82.** Sumit weighs 107 kg and Sanjay weighs 82 kg. The difference of their weight if the weight of each is rounded off to the nearest tens is :
(A) 30 kg (B) 100 kg (C) 40 kg (D) 20 kg

## 7. Predecessor and Successor of a Numbers

**83.** The successor of 1 million is :
(A) 2 millions (B) 1000001
(C) 100001 (D) 10001

**84.** The product of a non-zero whole number and its successor is always :
(A) Divisible by 3 (B) An odd number
(C) A prime number (D) An even number

**85.** If $a$ is predecessor of $b$, then find the value of $(a - b)$ and $(b - a)$ :
(A) – 1 and 1 (B) 1 and – 1
(C) 0 and –1 (D) 1 and 0

**86.** The difference between the predecessor and the successor of one million is _____
(A) 1 (B) 2
(C) 1,000,000 (D) 1000001

## 8. Divisibility Test of Numbers

**87.** The smallest 5-digits number that is divisible by 19 is :
(A) 10019 (B) 10013 (C) 10032 (D) 10000

**88.** Which of the following number is completely divisible by 18 ?
(A) 444444 (B) 555555 (C) 666660 (D) 666666

**89.** The sum of its digits is subtracted from a number. The resulting number will always be divided :
(A) By 2 (B) By 5 (C) By 8 (D) By 9

**90.** How many numbers are there between 1 and 100 which are completely divisible by 6 ?
(A) 15 (B) 17 (C) 16 (D) 19

**91.** 297144 is divisible by :
(A) 3 (B) 6 (C) 9 (D) 3, 6 and 9

**92.** The largest 4-digit number divisible by 459 is :
(A) 9639 (B) 9999 (C) 9759 (D) 9649

**93.** The largest 3-digit number divisible by 29 is :
(A) 999 (B) 957 (C) 968 (D) 986

**94.** The largest 3-digit number divisible by 19 is :
(A) 969 (B) 998 (C) 988 (D) 999

**95.** Find the smallest 3 digit number which is completely divisible by 15?
(A) 999 (B) 101 (C) 105 (D) 909

**96.** Which of the following option is correct?
(i) If the number is divisible by 3, it must be divisible by 9.
(ii) If the number is divisible by 8, it must be divisible by 4.
(A) (i) True and (ii) True (B) (i) True and (ii) False
(C) (i) False and (ii) True (D) (i) False and (ii) False

**97.** Find the sum of all numbers less than 27 which are divisible by 9 :
(A) 18 (B) 54 (C) 27 (D) 36

**98.** What least value must be given to *so that the number 3*63504 is divisible by 11?
(A) 0 (B) 2 (C) 3 (D) 4

**99.** Which one of the following number is divisible by 3?
(A) 8003 (B) 6896 (C) 4878 (D) 2690

**100.** The number of two digit natural numbers is :
(A) 69 (B) 90 (C) 91 (D) 99

**101.** Which of the following numbers is divisible by 3 ?
(A) 518932 (B) 117342 (C) 213454 (D) 337625

**102.** The sum of the digits of a number is subtracted from the number. The resulting number is always divisible by :
(A) 2 (B) 7 (C) 5 (D) 9

**103.** The sum of three consecutive odd numbers is always divisible by :
(A) 3 (B) 9 (C) 15 (D) 21

**104.** The least number of 4 digits exactly divisible by 7 is
(A) 1007 (B) 1001 (C) 1,006 (D) 1009

## 9. Miscellaneous

**105.** Select values of $m$, $n$ to make the statement true.
$127 \times 15 = (\ldots..\underline{m}\ldots.. \times 15) + (\ldots.\underline{n}\ldots \times 15)$
(A) $m = 100$, $n = 15$ (B) $m = 120$, $n = 15$
(C) $m = 15$, $n = 27$ (D) $m = 100$, $n = 27$

**106.** I am a five-digit even number. I have 9 at my tens place. The digit at the ten thousands place is three less than the digit at the tens place. The digit at the hundreds place is half the value of the digit at the ten thousand place. The digit at the thousand place is double the digit at the ones place. Who am I ?
(A) 68494 (B) 61392 (C) 64391 (D) 68394

**107.** Ram, Rahul and Rohit shared a bag of marbles. The bag had 272 marbles. How many marbles were left over after the friends shared them equally ?
(A) 90 (B) 91 (C) 9 (D) 2

**108.** There are 17 rooms in a school, every room has two fans and four LED bulbs. How many switches are required for the school if every fan requires a switch and one switch is required for every two bulbs ?
(A) 34 (B) 68 (C) 102 (D) 17

**109.** Which of the following two-digit number when added to 27, gets reversed ?
(A) 27 (B) 24 (C) 47 (D) 70

**110.** A tall office building has 85 floors. Each floor has 48 windows. Each window is to be decorated with 64 tiny bulbs. How many bulbs would be needed to decorate all the windows ?
(A) 261120 (B) 273920 (C) 456960 (D) 209920

**111.** If the sum of numbers of each row, each column and each diagonal is same, then write the values of $a$, $b$ and $c$ respectively.

| | | |
|---|---|---|
| 8 | 1 | $a$ |
| 3 | $b$ | $c$ |
| 4 | 9 | 2 |

(A) 6, 5, 7 (B) 5, 6, 7 (C) 7, 6, 5 (D) 6, 7, 5

**112.** The addition of two numbers is 234560. If one number is Ten thousand ten more than another number, then what will be the larger number ?
(A) 112275 (B) 122285 (C) 132285 (D) 117280

**113.** The difference in the largest odd number and smallest odd number of 5 digits which is formed by 0, 3, 6, 7 and 9 (repetition of digits is not allowed) ?
(A) 66951 (B) 66924 (C) 20700 (D) 19564

**114.** If product of three numbers is 6720, out of these product of two numbers is 240, then the third number is :
(A) 28 (B) 24 (C) 16 (D) 15

**115.** To complete the division, choose two numbers from the given box.

| 4, 5, 9, 31, 38, 44, 48, 132 |
|---|

□ ÷ □ = 11

(A) 132, 12 (B) 99, 9 (C) 44, 4 (D) 38, 5

**116.** What is the sum of prime numbers less than 25?
(A) 78 (B) 75 (C) 77 (D) 100

**117.** The difference between the greatest and the smallest 5-digit numbers, formed by the digits 0, 3, 6, 7 and 9 without repetition, is :
(A) 93951 (B) 67061 (C) 66951 (D) 60840

**118.** If *a* 4-digit number 2*x y*8 is exactly divisible by 3, then which of the following is the least value of $(x + y)$?
(A) 2 (B) 4 (C) 6 (D) 5

**119.** Which of the following can give the result as 'the square of a natural number '*n*' ?
(A) Sum of the squares at first *n* natural numbers.
(B) Sum of the first *n* natural numbers.
(C) Sum of the first $(n - 1)$ natural numbers.
(D) Sum of the first '*n*' odd natural numbers

**120.** X is a two-digit number, Y is the number obtained on reversing the digits of X. Which of the following is true ?
(A) X + Y is divisible by 10.
(B) X – Y is divisible by 6.
(C) X – Y is divisible by 9.
(D) X + Y is divisible by 8.

**121.** Which of the following is not true ?
(A) 8/7 + 3/8 = 3/8 + 8/7 (B) 8/7 × 3/8 = 3/8 × 8/7
(C) 8/7 / 3/8 = 8/7 × 8/3 (D) 8/7 – 3/8 = 3/8 – 8/7

**122.** How many natural numbers exist between the squares of 28 and 29 ?
(A) 30 (B) 58 (C) 56 (D) 60

**123.** The nature of $(-5 + 2\sqrt{5} - \sqrt{5})$ is :
(A) natural (B) integer (C) rational (D) irrational

**124.** The price of 10 chairs is equal to the price of 4 tables. The total price of 15 chairs and 2 tables is ₹ 4000. The total price of 12 chairs and 3 tables is :
(A) ₹ 3750 (B) ₹ 3840 (C) ₹ 3500 (D) ₹ 3900

**125.** The sum of a two digit number and the number obtained by reversing the digits is 55. If the digits of the number differ by 1, find the number :
(A) 32 (B) 12 (C) 76 (D) 34

**126.** Which type of numbers are NOT co-prime?
(A) Any two consecutive even numbers
(B) Any two consecutive odd numbers
(C) Any two prime numbers
(D) Any two consecutive number

**127.** Which of the following pairs of numbers are relatively prime?
(A) 24 and 68 (B) 24 and 92
(C) 39 and 68 (D) 24 and 38

**128.** Which of the following pairs reprsents the co-prime numbers ?
(A) (15, 235) (B) (51, 441)
(C) (15, 141) (D) (15, 94)

**129.** How many Prime numbers are there between 40 and 50?
(A) 3 (B) 2 (C) 5 (D) 4

**130.** Two consecutive natural numbers are always..... .
(A) even numbers (B) co-prime numbers
(C) odd numbers (D) prime numbers

**131.** Which of the following is a prime number ?
(A) 701 (B) 679 (C) 657 (D) 697

**132.** If the sum of all the prime numbers is '*x*' and that of all the odd prime numbers is '*y*', then what is the value of *x*-*y* ?
(A) 0 (B) 2 (C) ∞ (D) 1

**133.** The sum of three consecutive even numbers is always divisible by _____.
(A) 12 (B) 6 (C) 18 (D) 24

**134.** The face value of 6 in 16008 is :
(A) 6000 (B) 6 (C) 60 (D) 600

**135.** The number 5769116 is divisible by which of the following numbers?
(A) 4 (B) 8 (C) 12 (D) 5

**136.** The sum of three consecutive odd numbers is always divisible by _____.
(A) 3 (B) 9 (C) 15 (D) 21

**137.** How many hundreds are there in 25347 ?
(A) 300 (B) 253 (C) 2534 (D) 25300

**138.** What is the difference of the place values of two 7s in the number 276875 ?
(A) 69993 (B) 699730 (C) 699970 (D) 69930

**139.** Two third of three twentieth is :
(A) Two twentieth (B) Three tenth
(C) One twentieth (D) Four tenth

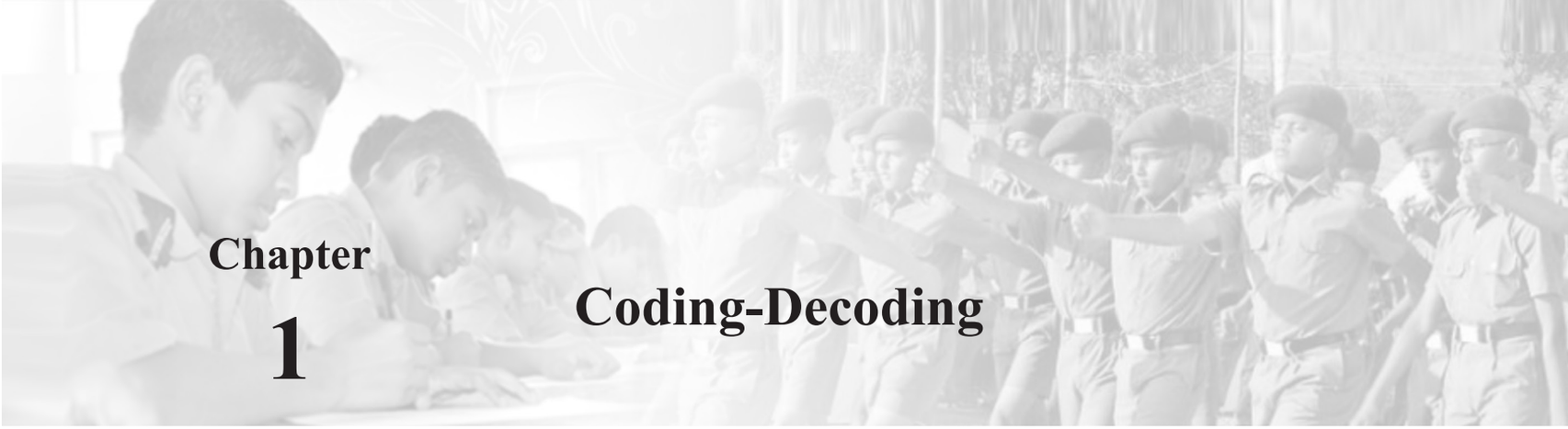
**140.** What is the difference between the face value of the number 7 in the numbers 4782 and 32170.
(A) 630 (B) 712 (C) 0 (D) 770

**141.** What will be the remainder when 10011 is divided by 101 ?
(A) 9 (B) 11 (C) 12 (D) 13

**142.** The product of the place values of two sixes in 786364 is :
(A) 36 (B) 36000 (C) 360000 (D) 6060

**143.** The sum of place values of 5 in 6251, 6521 and 5621 is :
(A) 550 (B) 15 (C) 5550 (D) 5050

❑❑



Chapter

# 1 Coding-Decoding

## 1. Coding

When any letter/word/sentence is written and said in such a language that hides the actual meaning of that particular letter/word/sentence from others except the desired person.

## 2. Decoding

Decoding means to find out the actual meaning of a coded letter/word/sentence. Generally, decoding is done on the basis of the letters of the English alphabet and their corresponding positions.

## 3. The Position of Letters in English Alphabet

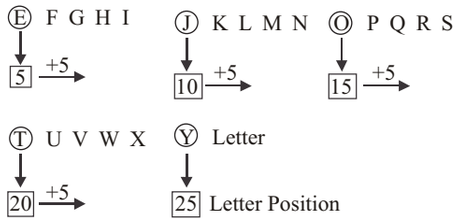
There are 26 letters (A to Z) in the English alphabet. The position of the letters are fixed in English alphabets *i.e.*, if letter A is 1, B is 2, C is 3.....X is 24, Y is 25 and Z is 26. *i.e.*,

| English Alphabet | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Forward Position | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |

| English Alphabet | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Forward Position | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |

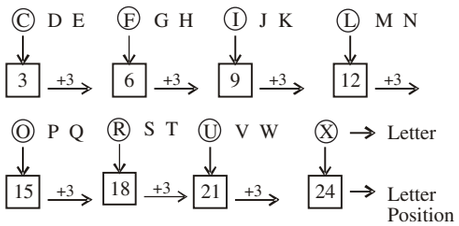
The position of letters in alphabetical order can be remembered in the following ways :

**I.** It should be learnt by the formulae 'EJOTY'. Here is a gap of four letters between each letter.




**EJOTY** sounds like a girl that is 'JOTI', so it could be easily remembered by this name.

**II.** It should be learnt by the formulae 'CFILORUX'. Here is a gap of two letters between each letter.




**CFILORUX** sounds like an injection name because the injections which are prescribed by doctors are having strange names.

## 4. Opposite Letters

Questions based on Coding-Decoding are also found on the basis of the opposite letters. First we know that what are opposite letters ? Opposite letters can be learnt in the following way :

*e.g.* In the English alphabet, the first letter from left is A and the first letter from right is Z, are opposite to each other.

The second letter from left is B and the second letter from right is Y, are opposite to each other.

*i.e.*,

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| From Beginning | A | B | C | D | E | F | G | H | I | J | K | L | M |
| From End | Z | Y | X | W | V | U | T | S | R | Q | P | O | N |
| | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 |

Now, it is clear that the above presentation of two letters is called opposite letters of each other.

**Trick to Remember**

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| ↕ | ↕ | ↕ | ↕ | ↕ | ↕ |
| Z | Y | X | W | V | U |
| (A to Z) | (Boy) | (Crax) | (Dew) | (Evening) | (Few) |

| G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|
| ↕ | ↕ | ↕ | ↕ | ↕ | ↕ | ↕ |
| T | S | R | Q | P | O | N |
| (G.T. Road) | (Honey Singh) | (Indian Railway) | (Jaipur Queen) | (Kanpur) | (Love) | (Man) |

## 5. Based on Letter Coding

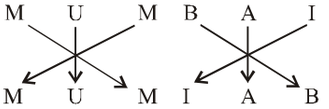
### I. Coding based on re-arrangement of letters

**Ex. :** If in a certain code, 'MADRAS' is written as 'DAMSAR'. then how will 'MUMBAI' be written in that code ?

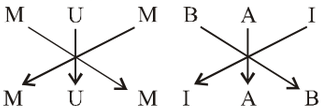
(A) BAIUMM (B) MBIAUM

(C) MUMIAB (D ) IMBUAM

**Sol.** (C) : As,




Same as,




∴ MUMBAI → MUMIAB

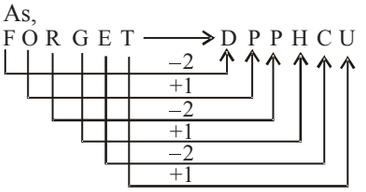
## II. Coding based on replacement of letters forward/ backward

**Ex. :** In a certain code, FORGET is written as DPPHCU then How will DOCTOR be written in that code ?

(A) BPARPP (B) BPAUPS

(C) EMDRPP (D) BPAUMS

**Sol.** (D) **:** As,

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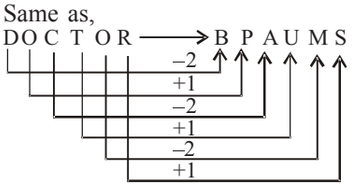



∴ DOCTOR → BPAUMS

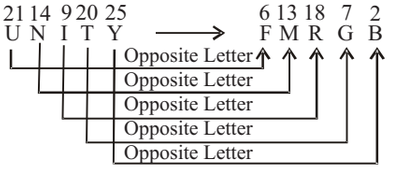
## III. Coding based on opposite letters

**Ex. :** In a certain code, 'UNITY' is written as 'FMRGB' then How is 'TRANQUIL' written in that code ?

(A) GMPFZROI (B) MJROIZBS

(C) TZMFJROM (D) GIZMJFRO

**Sol.** (D) : As,

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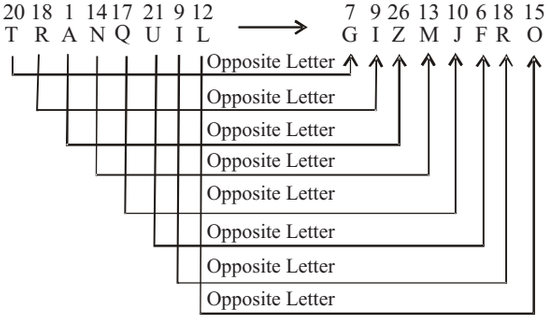



∴ TRANQUIL → GIZMJFRO

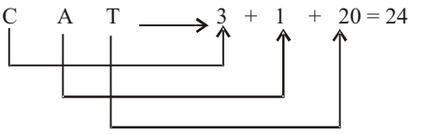
## 6. Coding Based On Numbers

**Ex. 1.** If 'CAT' is coded as '24', then 'DOG' will be coded as,

(A) 20 (B) 23

(C) 26 (D) 28

**Sol.** (C) : As,

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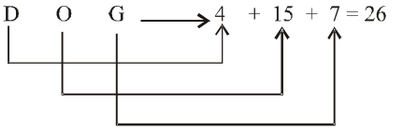


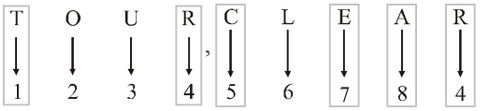

∴ DOG → 26

**Ex. 2.** A certain code, 'TOUR' is coded as '1234', 'CLEAR' is coded as '56784' and 'SPARE' is coded as '90847'. How would 'CARETS' be written in that code ?

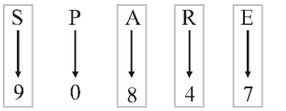
(A) 584719 (B) 684729

(C) 584279 (D) 729580

**Sol.** (A) **:** As,




And




Same as,


∴ CARETS → 584719

## 7. Coding Based On Words

**Ex. :** If 'flower' is called 'tree', tree is called 'red', red is called 'gold' and 'gold' is called 'white', then which of the following items, jewellery is made ?

(A) Tree (B) Red

(C) White (D) Gold

**Sol.** (C) : 'Jewellery' is made of 'gold', but here gold is called 'white'. Hence in this case 'jewellery' is made of 'white'.

## Important Questions

**1.** If in a certain language 'PARROT' is written as '123345' and 'SOAT' is written as '6425', then how would 'ROAST' be written in that code ?
(A) 34625 (B) 32564
(C) 32456 (D) 34265

**2.** If 'WAY' is coded as 679, 'MAY' is coded as 579, then 'YAW' will be coded as :
(A) 976 (B) 769
(C) 679 (D) 579

**3.** In a code, 'BOMBAY' is coded as 'CNNABX', then what will be the code of 'DELHI' ?
(A) EDMJG (B) GMDEJ
(C) DEGMJ (D) EDMGJ

**4.** In a certain code language, COMPUTER is written as RFUVQNPC. How will MEDICINE be written in that code langauge ?
(A) MFEDJJOE (B) EOJDEJFM
(C) MFEJDJOE (D) EOJDJEFM

**5.** If STATEMENT is coded as TNEMETATS then POLITICAL will be coded as :
(A) LACITILOP (B) LCATILIOP
(C) OPILITACL (D) LACITIPOL

**6.** If in a certain code DEAF is written as 3587 and FILE is written as 7465 then IDEAL will be written as :
(A) 43568 (B) 43586
(C) 63548 (D) 48536

**7.** If in a certain code MBS is coded as ODU then BRL will be coded as ?
(A) DTN (B) DUN
(C) CSM (D) CTN

**8.** If TRAIN is written as WUDLQ, then BUS would be written as ..... .
(A) EXU (B) DWU
(C) EXV (D) VXE

**9.** In a certain code, 'commit also make policy' is written as %e4 !y6 #t6 @04', 'policy craze anger mobile' is written as '!y6 @r5 %e6 #e5', 'allow mild course prize' is written as '!e5 %d4 #e6 @w5', and 'craze manner pump artist' is written as '%r6 #e5 !p4 @t6' Then, what does '#e6 #e5 @04' stand for ?
(A) commite also mind (B) policy anger mobile
(C) craze also course (D) allow mind pump

**10.** In a certain code language, 'pen pencil' is written as '$%' and 'eraser sharpener' is written as '@#' and 'pencil eraser' is written as '$@'. Then what is the code for 'pen' ?
(A) # (B) $
(C) @ (D) %

**11.** In a certain code, TELEPHONE is written as ENOHPELET. How is ALIGATOR written in that code ?
(A) ROTAGILA (B) ROTAGAIL
(C) ROTAGILE (D) ROTEGILA

**12.** If husband is called wife, wife is called grandfather, grandfather is called grandmother, grandmother is called maternal grandmother, maternal grandmother is called maternal grandfather, maternal grandfather is called maternal uncle and maternal uncle is called maternal aunt, then what will the father of the mother be called ?
(A) Maternal grandmother (B) Maternal uncle
(C) Maternal grandfather (D) Maternal aunt

**13.** In a certain code language, '3' is coded as 'Z', '4' is coded as 'Y', '5' is coded as 'X', '6' is coded as 'W' and '7' is coded as 'V'. Find the code for '5734'.
(A) XVZY (B) YZVX
(C) ZVXY (D) VZXY

**14.** In a certain code language if 'Cow' is called 'Goat'; Goat is called 'Lion'; 'Lion' is called 'Dog', then which of the following animals is the king of forest ?
(A) Lion (B) Dog
(C) Cow (D) Goat

**15.** If a certain code language, MICROWAVE is written as LJBSNXZWD, how is POPULAR written in that code ?
(A) QBIKVPAV (B) OPKVPAV
(C) OPOVKBQ (D) KBQVOPA

**16.** If the TAP is coded as SZO, then how is FREEZE coded ?
(A) ATSSTS (B) EQDDYD
(C) ESDDYD (D) EQDDZD

**17.** In a certain code IMTITJU is written as TMIIUJT, How is TEMREMP Written in that code ?
(A) METERPM (B) METRPME
(C) ETRMMEP (D) MTERPME

**18.** If in a certain code ROPE is coded as 6821, CHAIR is coded as 73456 what will be the code for CRAPE ?
(A) 73456 (B) 76421
(C) 77246 (D) 77123

**19.** In certain code language, NOIDA is coded as OPJEB, How is DELHI coded in that language ?
(A) CDKGH (B) EFMIJ
(C) FGNJK (D) IHLED

**20.** In certain code, TREE is written as UQFD. How is LEAF written in that code ?
(A) MFBG (B) KDZE
(C) MDBE (D) MBZE

**21.** In certain code, if HAT is coded as 8120, how is BAN coded in this code ?
(A) 2124 (B) 2114
(C) 2021 (D) 2020

**22.** In certain code, ARMY is written ASOB. How is JUDGE written in that code ?

(A) KVEHF (B) JVFJI

(C) ITCFD (D) JWGKJ

**23.** If 'SWEET' is written as 'TXFFU' , then 'HORSE' is :

(A) IPSTF (B) IPGSH

(C) JPSTG (D) KJDHD

**24.** If DREAM is coded as '78026' and CHILD is coded as '53417', how can DEALER be coded ?

(A) 702180 (B) 702108

(C) 702018 (D) 701208

**25.** If 'FISH' is 'EHRG', then 'JUNGLE' is:

(A) ITNFKD (B) KVOHMF

(C) TIMFKD (D) ITMFKD

**26.** In a certain code, 'GIGANTIC' is written as 'GIGTANCI' How is 'MIRACLES' written in that code.

(A) MIRCLCAES (B) MIRLACSE

(C) RIMCALSE (D) RIMLCAES

**27.** In a certain code language, 'LEARNING' is written as 'LGNINRAE', How will 'SURPRISE' be written in the code language ?

(A) ESRIPRUS (B) RUSEPSIR

(C) SESIRPRU (D) NONE

**28.** If AT = 20, BAT = 40, the CAT will be equal to:

(A) 30 (B) 50

(C) 60 (D) 70

**29.** If air is called water, water is called green, green is called dust, dust is called yellow and yellow is called cloud, which of the following does fish live in ?

(A) Air (B) Water

(C) Green (D) Dust

**30.** In a certain code, 'CERTAIN' is coded as 'BFQVZJM'. How is 'MUNDANE' code in that code languages ?

(A) LVMEZOD (B) NTCOMBF

(C) NTOCNBF (D) LTMCZOF

**31.** In a certain code, 'SUGAR' is written as BCDZF and 'WATER' is written as 'PZQMF'. Put the word TEARS in the same code :

(A) QCMPB (B) QZFBD

(C) QMZFB (D) QBDPM

❑❑

# Chapter 1 Reading Comprehension

**Direction (Q. No. 1 to 95)**

There are twenty passages in this section. Each passage is followed by fine quetions. Read each passage carefully and answer the questions that follow for each question, four options as (A),(B), (C) and (D) are given only one out of these is correct.

**Passage (1)**

If you want to send a letter by post today, you have to paste a stamp on the envelope. But long ago there were no stamps. People who wanted to send a letter would fold it and stick it with wax. Then the post office would send the letter and the person who got it whould have to pay for receiving the letter. The first stamp was printed in England. It was black and had a picture of Queen Victoria on it. It cost one penny (The British Paise). That is why it was called the 'Penny Black'.

The hobby of collecting stamps is known as Philately. Stamps have been brought out in many shapes and sizes. Some stamps are very valuable and can sell for a lot of money.

**1.** Choose the correct option to fill in the blank.

The first stamp was printed in ..... .

(A) India (B) England
(C) America (D) Australia

**2.** Choose the correct statement.

(A) The first stamp had a picture of a lion.
(B) The first stamp had a picture of Queen Victoria.
(C) The first stamp had a picture of Queen Elizabeth.
(D) The first stamp had a picture of a goat.

**3.** Choose the correct option.

The hobby of collecting stamps is called ..... .

(A) Gardening
(B) Fashion Designing
(C) Cooking
(D) Philately

**4.** It was black and had a picture of 'Queen Victoria'.

Identify the part of speech for "black" from the given sentence.

(A) Noun (B) Pronoun
(C) Adjective (D) Verb

**5.** Choose the opposite of 'send'.

(A) receive (B) cost
(C) brought (D) sell

**Passage (2)**

From far out in space, Earth looks like a blue ball. Since water covers three-fourths of the Earth's surface, blue is the colour we see most. The continents look brown, like small islands floating in the huge, blue sea. White clouds wrap around the Earth like a light blanket. The Earth is shaped like a sphere or a ball. It is 25,000 miles around ! It would take more than a year to walk around the whole planet. A spaceship can fly around the widest part of the sphere in only 90 minutes.

Even though spaceships have travelled to the Moon, people cannot visit the Moon without special suits. The Moon has no air or water. Plants and animals can't live there either. Astronauts first landed on the Moon in 1969. After that, there were six more trips to the Moon. They brought back Moon rocks, which scientists are still studying. There are holes or craters, all over the Moon's surface. Scientists believe that meteorites smashed into the Moon millions of years ago and formed the craters.

The Sun is the closest star to Earth. A star is a hot ball of burning gas. The Sun looks very big because it is so close. But the Sun is just a medium sized star. Billions of far-away stars are much bigger than our Sun. The burning gases from the Sun are so hot that they warm the Earth from 93 million miles away ! Even though the Sun is always glowing, the night here on Earth is dark. That's because the Earth rotates or turns around, every 24 hours. During the day, the Earth faces the Sun, then we see light. During the night, the Earth turns away from the Sun, then it faces the darkness of space. Each day we learn more about the Earth, the Moon and the Sun.

**6.** Why is blue the colour we see most when looking at Earth from outer space ?

(A) Because most of the Earth is covered in land.
(B) Because the Sun's rays make the Earth look blue
(C) Because most of the Earth is covered in water
(D) Because clouds wrap around the Earth

**7.** What does 'formed' mean ?

(A) hit (B) made
(C) broke (D) stopped

**8.** What causes daylight of Earth ?

(A) The full Moon causes daylight
(B) Daylight is caused by the Earth facing away, from the Sun.
(C) The heat of the Sun's rays causes daylight
(D) Daylight is caused by the Earth facing toward the Sun.

**9.** Which of the following sentences best describes the Sun ?

(A) The Sun looks small because it is so far from Earth
(B) The Sun is a ball of burning gases that gives the Earth heat and light.
(C) The Sun is a small star.
(D) The Sun is not as hot as it looks.

**10.** Why did the astronauts bring rocks back from the Moon ?
(A) Because they didn't know if they would return to the Moon ever again
(B) Because they wanted to prove that they went to the Moon.
(C) Because they wanted to remember how the Moon looked.
(D) Because they wanted to study them and learn more about the Moon.

**Passage (3)**

Snakes belong to a class of animals called reptiles. This group also includes crocodiles, lizards and turtles. Snakes are found almost everywhere, in forests, deserts and lakes. They cannot survive in places where the ground is frozen all through the year. The snake has very poor eye sight. It uses its other senses to escape damage and find food. Some snakes smell with their noses but most of them smell with their tongue. The body of a snake is covered with scales made up of layers of cells. A few times every year a snake sheds the outer layer of dead skin. The cells underneath at once form the outer layer which is a protective covering for the snake.

**11.** Snakes are called ..... .
(A) lizards (B) scales
(C) reptiles (D) turtles

**12.** Snakes cannot survive in ..... .
(A) frozen places (B) deserts
(C) forests (D) lakes

**13.** Snakes have poor ..... .
(A) sense of smell
(B) hearing
(C) sense of touch
(D) eyesight

**14.** ..... protect/protects the snake from injury.
(A) Tongue (B) Scales
(C) Dead skin (D) Nose

**15.** The word 'survive' means ..... .
(A) live (B) move
(C) escape (D) belong

**Passage (4)**

Once we visited a village where many families were selling clay products made by them. What attracted us most were artificial fruits and vegetables made by a certain family. We saw apples, oranges and tomatoes of such fine shapes and colours that we could hardly distinguish them from the real ones. They received much praise from all and sundry.

**16.** A certain family made ..... of clay.
(A) tables and chairs
(B) fruits and vegetables
(C) toys and pots
(D) piggy bank and balls

**17.** We could hardly distinguish the ..... fruits from the real ones.
(A) natural (B) artificial
(C) original (D) actual

**18.** The word 'such' is a/an ..... .
(A) verb (B) adverb
(C) adjective (D) conjunction

**19.** ..... is the synonym of 'differentiate'.
(A) Distinguish (B) Mix-up
(C) Confuse (D) Mistake

**20.** ..... means the same as 'all and sundry' .
(A) Specific (B) Exact
(C) Everyone (D) Few

**Passage (5)**

There are only two simple rules to follow to lose weight or to maintain a healthy weight. They are to eat a balanced diet with less fat and sugar and to exercise more. You don't have to starve to lose weight. If you eat less sugar, cakes, biscuits and eat more fruits and vegetables and drink plenty of water, you will lose weight and be healthier. Go for a walk or cycling every day. Be more active instead of watching television or playing video games.

**21.** How can we remain healthy ?
(A) By eating biscuits only
(B) By doing exercise only
(C) By eating a balanced diet and doing exercise
(D) By eating more fruits

**22.** What do we have to eat more to lose weight ?
(A) Sugar and cakes
(B) Fruits and vegetables
(C) Biscuits and sugar
(D) Biscuits and fruits

**23.** What do we have to drink in plenty to remain healthier ?
(A) Colas (B) Fruit juice
(C) Water (D) Vegetable juice

**24.** Which is a good exercise for all ?
(A) Walking and cycling
(B) Kite flying
(C) Playing video games
(D) Watching television

**25.** Which word is opposite in meaning to the word, 'active' ?
(A) Dull (B) Inactive
(C) Interested (D) Energetic

**Passage (6)**

Travelling is both recreational and educative. It has always been regarded as an important part of education. In Europe, a young man is considered fully educated only when he has travelled through many countries of Europe. In ancient India also, our sages understood the great value of travelling. They made it a pious duty of all to visit various pilgrim centres situated in different parts of India. This encouraged the feeling of oneness among Indians.

**26.** It is important to.....if one wants to get real education.
(A) study (B) work
(C) travel (D) meditate

**27.** Which one of the following words is a synonym of "recreational" ?
(A) edudcational (B) thrilling
(C) tiring (D) sight-seeing

**28.** Visiting the.....centres was considered holy in ancient India.

(A) training (B) pilgrim
(C) city (D) business

**29.** People have a feeling of oneness with others if they.....a lot.
(A) travel (B) talk
(C) play (D) question

**30.** A sage is a person who is..... .
(A) learned (B) smart
(C) free (D) wicked

**Passage (7)**

Fire is to blame for the loss of countless lives and billions of rupees each and every year. Firefighters help protect people and their property from injury and damage. They put their lives on the line every time they respond to a call.

While on duty, firefighters must be ready to respond in a matter of minutes to just about any disaster that may occur. At every fire scene, a superior fire officer takes command and directs the jobs of all the people at the scene. Some firemen connect the hose lines to hydrants. Others manually operate the pumps to send water to the hoses. Teams of firefighters also operate ladders used to reach distances high in the air.

**31.** Which is not true about the firefighters ?
(A) They are brave
(B) They often put their lives in danger
(C) They never put their lives in danger
(D) They are highly trained

**32.** A firefighter has to prepare to extinguish a fire in :
(A) minutes (B) hours
(C) days (D) weeks

**33.** Firefighters put their lives on the line means :
(A) They stand in a line
(B) They fight fire
(C) They put their lives in danger
(D) They connect the hose line to hydrant

**34.** To 'operate manually' means to :
(A) make a man work
(B) work with their hands
(C) use a machine
(D) use one's body

**35.** The word 'occur' means the same as :
(A) come (B) happen
(C) call (D) fire

**Passage (8)**

India is a land of pilgrims and pilgrimages. These holy places, whether in the hills or in the plains, are **generally** situated on river banks or by the sea. It is not only the religious people who visit these places of pilgrimages, but also travellers and sight-seers from all over India and abroad. Wherever two or more rivers meet, pilgrims come to bathe and worship because that place is supposed to be holy. One such place is Haridwar which is situated on the bank of river Ganga.

**36.** Holy places are visited by religious people, sight-seers as well as.....
(A) children (B) travellers
(C) traders (D) voyagers

**37.** Which one of the following is a synonym of the word 'generally'?
(A) usually (B) publicly
(C) occasionally (D) eventually

**38.** The place is considered 'holy' where two or more rivers meet. Here the antonym of the word 'holy' is :
(A) godly (B) religious
(C) cursed (D) pious

**39.** People come to bathe and worship in the Ganga as its water is :
(A) holy (B) clear and clean
(C) cool (D) healthy

**40.** People go on a pilgrimage because they are :
(A) curious (B) religious
(C) explorers (D) old

**Passage (9)**

Our voyage was very prosperous, but I shall not trouble the reader with a journal of it. The captain called in at one or two ports and sent in his long-boat for provisions and fresh water, but I never went out of the ship still we came into the Downs, which was on the 3rd day of June, 1706, about nine months after my escape. I offered to leave my goods in security for payment of my freight, but the captain protested he would not receive one farthing. We took kind leave of each other, and I made him promise that he would come to see me at my house in Redriff. I hired a house and a guide for five shillings which I borrowed from the captain.

**41.** When the writer uses the word 'prosperous' to describe the voyage, he means that :
(A) it made him rich
(B) it made him healthy
(C) it was very pleasant
(D) it was uneventful

**42.** On the voyage, the author :
(A) left the ship at intervals
(B) was not able to leave the ship because it did not stop
(C) never left the ship at all
(D) never left the ship till they came into the Downs

**43.** In the context of the passage, the word 'provisions' means :
(A) mainly food
(B) mainly security
(C) money
(D) mainly ammunition

**44.** For the payment of the author's freight, the captain :
(A) kept his goods as security
(B) refused to accept any money
(C) protested against being paid only a farthing
(D) accepted a sum of money

**45.** From the passage, it is clear that the captain's attitude to the author was :

(A) one of hostility
(B) one of indifference
(C) one of extreme friendliness and kindness
(D) one of disgust and irritation

**Passage (10)**

One day a wolf found a sheepskin. He covered himself with the sheepskin and got into a flock of sheep grazing in a field. He thought, "The shepherd will shut the sheep in the pen after sunset. At night I will run away with a fat sheep and eat it.

All went well till the shepherd shut the sheep in the pen and left. The wolf waited patiently for the night to advance and grow darker. But then an unexpected thing happened. One of the servants of the shepherd entered the pen. His master had sent him to bring a fat sheep for supper. As luck would have it, the servant picked up the wolf dressed in the sheepskin. That night the shepherd and his guests had wolf for supper.

**46.** Why did the wolf cover himself with the sheepskin and get into a flock of sheep ?
(A) He wanted to look like a beautiful sheep.
(B) He wanted to eat a sheep.
(C) He wanted to enter into the pen.
(D) He wanted to make friends with the sheep.

**47.** How did the wolf meet his end ?
(A) All the sheep attacked the wolf and killed him.
(B) The shepherd recognised the wolf in sheep's clothing and killed him.
(C) The shepherd's servant picked up the wolf dressed in the sheepskin for supper.
(D) The wolf died of a serious disease.

**48.** Why did the servant pick the wolf for supper ? Select the most appropriate answer.
1. Because he wanted to have the tasty meat of wolf.
2. Because the wolf was in sheep's clothing.
3. Because the servant thought the wolf to be a fat sheep,
(A) Only 1 (B) Only 2
(C) Only 3 (D) Only 1 and 2

**49.** What is the antonym of the word 'shut' as used in the passage ?
(A) kill (B) close
(C) imprison (D) free

**50.** What is the moral of the passage ?
(A) An evil design has an evil end.
(B) Pen is mightier than the sword.
(C) Might is right
(D) Die in harness

**Passage (11)**

Desert is a place where there is sand all around. It is a hot and dry place. There is very little rain in Deserts. So, very few trees grow there. The only plants that grow in the deserts are cactus, date palms and thorny bushes which do not need much water to grow.

The Sahara is the biggest desert in the world. It stretches across the whole of North Africa. The Arabian desert is also a very large desert. In India too, there is a desert called Thar desert in Rajasthan. Life in a desert is tough. The days are very hot and nights are cool.

**51.** The biggest desert in the world is in :
(A) India (B) Africa
(C) Arabia (D) America

**52.** In desert regions :
(A) there is no rainfall
(B) it rains heavily
(C) there is enough rain
(D) there is a little rain

**53.** The climate in a desert is :
(A) pleasant (B) difficult
(C) comfortable (D) cold

**54.** Date palms grow in :
(A) plains (B) hilly regions
(C) deserts (D) snowy regions

**55.** Very few trees grow in deserts because :
(A) most trees need water to grow
(B) there is sand all-around
(C) nights are very cold
(D) there is no one to take care of trees

**Passage (12)**

Since, the most ancient times, India has been not only periodically invaded by greedy hordes but also visited by tradesman and travellers, scholars and sight-seers. Some of them have written books. The books of these writers become all the more important because there were not too many of them and they have served as rich sources for the historian. It is especially in this context that observations provided by the great Chinese writer Hiuen Tsang become very relevant.

Already in the 7th century, Buddhism was a powerful cultural force among the educated classes of China. It was common for Chinese pilgrims to come to India, the native land of the Buddha, to pay their respects to the founder of their religion. Perhaps the most famous of them all was this gentle observer who had studied and travelled extensively in China before entering the Indian sub-continent. Being both scholar and sophisticated, he was not given to easy praise. Within India itself he traversed deserts and climbed mountains, stayed in villages and lived in capitals, practised in monasteries and studied in universities and spent time in some royal courts as well.

**56.** Why are the writings of Hiuen Tsang considered as relevant ?
(A) He had spent sometime in some royal courts
(B) He visited India as a trader and sight-seer
(C) He had travelled to many Asian countries
(D) He was a gentle observer

**57.** Chinese pilgrims commonly come to visit :
(A) mountains
(B) villages
(C) deserts
(D) the native land of Buddha

**58.** What probably prompted Hiuen Tsang to travel to India ?
(A) To study influence of Buddhism on Hindu religion
(B) To spread his religion in India
(C) To undertake pilgrimage and enhance knowledge
(D) To study the powerful cultural force in India

**59.** In the most ancient times, India was visited by except :
(A) scholars (B) tradesman
(C) farmers (D) sight-seers

**60.** Hiuen Tsang did all of the following travel in India except
(A) travelled in deserts
(B) lived in villages
(C) followed the schedule in Monasteries
(D) taught in the university

**Passage (13)**

Man made satellites play a very important role in the modern man's world today. It helps in the study of space which has fascinated and inspired people for centuries and also helps us to find out more about the earth and our solar system. Advances in satellite technology have diversified to such an extent that it has improved our quality of life. Satellites help us communicate with people anywhere in the world, forecast weather, look at climate change and monitor disaster. Almost everyone today use satellite technology. Paying by credit card, or using an ATM machine-all involve satellite technology. Thus satellites have become an integral part of present-day man.

**61.** Satellites help in the study of :
(A) animals (B) space
(C) plastics (D) bacteria

**62.** The word 'fascinated' used in the paragraph means :
(A) pleased (B) interested
(C) affected (D) enthused

**63.** Which of the following sequences is correct as mentioned in the paragraph ?
(A) Technology–Monitor–Study
(B) Monitor–Study–Technology
(C) Study–Monitor–Technology
(D) Technology–Study–Monitor

**64.** The phrase 'present-day man' means :
(A) man who is present
(B) man present everyday
(C) man of everyday
(D) man of today

**65.** Satellite technology cannot be used for :
(A) speaking to a friend in America
(B) washing and drying clothes
(C) taking out money from a bank
(D) warning against a storm

**Passage (14)**

There is no general agreement about how the planets were formed. The most widely accepted theory is that about 5000 millions years ago swirling clouds of matter began to condense. Through the action of centrifugal force, the heavier molecules were concentrated near the centre of the eddies and the lighter, gaseous material was thrown out towards the periphery. Such is the theory. What is known is that nine satellites began orbiting round the sun. These are the planets.

The planet on which man lives is the third closest to the sun, with the third shortest orbit. It also has something none of the others has–an atmosphere that can support life in all the manifold forms that exist on our planet.

There may be satellites circling other stars in other parts of the universe that have the right ingredients for some sort of life to evolve, but the earth is the only one in the solar system.

**66.** According to the passage, the planets are:
(A) nothing but condensed clouds
(B) a collection of gaseous material
(C) a collection of condensed swirling material
(D) a collection of centrifugal forces

**67.** The theory of the formation of the planets :
(A) is generally agreed upon by everyone
(B) is a debatable one
(C) covers a very wide area
(D) is fairly well-known

**68.** A planet is a 'heavenly body' which moves round :
(A) the sun
(B) a star
(C) a satellite of the solar system
(D) the universe

**69.** One essential difference between the earth and the other planets is that :
(A) the atmosphere of the earth makes possible the presence of life on it
(B) the earth draws the heavier molecules into its centre through the action of centrifugal force
(C) only the earth is on the periphery of the solar system
(D) the earth has the capacity to come into closer contact with the sun

**70.** The writer claims that the life-supporting atmosphere :
(A) is there on other planets in the solar system
(B) may be there on the other satellites in the universe
(C) may evolve on other satellite circling other stars in the universe
(D) cannot evolve anywhere outside the earth

**Passage (15)**

A completely uneducated farmer's work is far more important than that of a professor. We can live without education, but we die if we have no food. If no one cleaned our streets and took the rubbish away from the house, we should get terrible diseases in our towns. In countries where there are no servants, because every one is ashamed of doing house work, the professors have to waste much of their time doing house work.

In fact when we say that all of us must be educated in such a way that firstly, each of us can do whatever job is suited to his ability and brain and secondly that we can realize that all jobs are necessary to society and that it is very bad to be ashamed of one's work or to scorn someone else's. Only such type of education can be called valuable to society.

**71.** If no one cleans our streets we should :
(A) be unclean (B) be unhappy
(C) get diseases (D) get dirty

**72.** Only such type of education can be called valuable. Such type of education refers to :

(A) that which enables us to do any thing
(B) that which enables us to scorn some one else's work
(C) that which develops dislike in us
(D) that which enables us to do any work and not to hate any work.

**73.** Which word in the passage is one word for 'one who is a university teacher'?
(A) teacher (B) professor
(C) educationist (D) lecturer

**74.** A completely uneducated farmer's work is more important than :
(A) that of a businessman
(B) that of a professor
(C) that of an artist
(D) that of an advoacate

**75.** Professors, in some countries waste their time because :
(A) they have to do house work
(B) they have to teach lower classes
(C) they have to help the students
(D) they have to wait for train

**Passage (16)**

Youth today do not realise that one is modern only when his thoughts and actions bring out something new, which can set an example to the rest of the world. Imitating only the Western outlook in lifestyle, leaving aside their values, is not what modernism is. Should we consider a youth modern if he opts for a dozen girlfriends and then pretends to be ignorant when dowry in marriage is concerned ?

The family also plays a vital role in shaping one's life. If the urban population in India is divided into two broad divisions, the elite and the middle class, we will find that youths belonging to both these classes suffer from severe frustrations. The parents in the higher society are so busy with their work that their children are left neglected. Loneliness, tensions arising out of parent's unhappy relations and family feuds result in psychiatric depression in the youth.

The case is similar in the middle class families, though with a difference. Lack of attention at home ruins them. The situation is not so grave with the girls as they generally prefer to stay at home, whatever its conditions be. But young men, desperate to find some refuge; quite often come in contact with drugs, alcohol and other illegal activities. Neither are they happy with the society nor is the society happy with them.

**76.** The, passage is concerned with :
(A) the urban youth
(B) the elite class youth
(C) the middle class youth
(D) the modern girls

**77.** Youths in the elite class families are :
(A) lonely and depressed
(B) prone to drug-addiction
(C) desperate for revenge
(D) angry and defiant

**78.** Being truly modern means :
(A) imitating the West
(B) opting for a dozen girl-friend
(C) accepting dowry in marriage
(D) doing something exemplary

**79.** The situation in case of the girls is :
(A) desperate (B) menacing
(C) not so serious (D) gloomy

**80.** Young men seek refuge in :
(A) dozen girl-friends
(B) modernism
(C) drugs, alcohol etc.
(D) dowry in marriage

**Passage (17)**

Once upon a time, there lived a Rajput king at Malwa. His kingdom was small, quiet and peaceful. There were no major battles on political problems. So his one aim in life was to make his people happy.

One year there was a severe drought. The fields were dry and cracked, and the, trees were bare. There were no flowers and fruits in the land or crops of any kind. The king was worried. How was he to save the people from famine ?

He walked to the river Narmada, knelt down and prayed. "O Sacred Narmada, bless us with rain. Save my people from famine, and I shall offer you my first born child."

Before long, the sky was overcast with clouds and it rained heavily. The wet Earth was ploughed, seeds were sown and a few months later a bumper crop was harvested. The people rejoiced.

**81.** What was the king's problem ?
(A) Wars (B) Politics
(C) Famine (D) Flood

**82.** Which statement does show that the Rajput king loved his people ?
(A) The king offered his first-born child to river Narmada
(B) He opened the gates of the state granary for his people
(C) He forced his neighbouring states to contribute food
(D) He set up relief camps to feed the hungry

**83.** When there is drought :
(A) there is lot of rain
(B) the Earth is dry and cracked
(C) people are very happy
(D) people sow the seeds

**84.** The king prayed Narmada for :
(A) grains (B) famine
(C) a child (D) rain

**85.** 'Before long' means :
(A) a long time ago
(B) for a long time
(C) very soon
(D) in the past

**Passage (18)**

Two diseases of banana, spreading fast in Africa, are becoming danger to about 3 crore people who bank upon this fruit for their food and earning as well. To check this fast spreading disease, the scientists had an emergency meeting with policy makers. They

found the disease incurable, therefore they suggested powerful scheme; such as ploughing the large banana fields, spray the insecticide or burn the plants. They felt, if steps were not taken in time, the disease would turn into epidemic and 90% of the crop would be destroyed.

**86.** Why did the writer say that the banana disease is becoming danger to the people ?
(A) It would soon spread among the people and kill them
(B) It would soon destroy the crop, which is the means of living and earning of the people
(C) The trees would turn poisonous
(D) This would spread epidemic among the people

**87.** Why did scientists have emergency meeting ?
(A) To find the solution of the problem
(B) To tell the government, that they have found out the solution
(C) To be awarded by the government
(D) To tell the government that the problem is serious

**88.** To check the disease, the scientists suggested :
(A) All the people should be inhabited elsewhere
(B) People should be given some other employment for their earning
(C) People should plant something else
(D) All the affected plants must be burnt out or sprayed with insecticide

**89.** Epidemic means :
(A) Frequently spread disease
(B) Drought
(C) A method to cure plants
(D) A disease to attack only human being

**90.** Which sentence is used to mean incurable disease ?
(A) None could survive after contracting AIDS
(B) On spreading swine flu, to check the spread the government has to take strict steps
(C) The fire was so furious that the entire building turned into ashes within no time
(D) There was a powerful change in the people's life after the erection of factory in the village

**Passage (19)**

Laws of nature are not commands but statements of facts. The use of the word "Law" in this context is rather unfortunate. It would be better to speak of uniformities of nature. This would do away with the elementary fallacy that a law implies a law-giver. If a piece of matter does not obey a law of nature, it is not punished. On the contrary, we say that the law has been incorrectly stated.

**91.** If a piece of matter violates nature's law, it is not punished because :
(A) it is not binding to obey it
(B) there is no superior being to enforce the law of nature
(C) it cannot be punished
(D) it simply means that the facts have not been correctly stated by the law

**92.** The author is not happy with the word 'law' because :
(A) it expresses rigidity and harshness
(B) it implies an agency which has made them
(C) it does not convey the sense of nature's uniformity
(D) it gives rise to false beliefs

**93.** Laws of nature differ from man-made laws because :
(A) the former state facts of nature
(B) they must be obeyed
(C) they are nature
(D) unlike human laws, they are systematic

**94.** The laws of nature based on observation are :
(A) conclusive about the nature of the universe
(B) true and unfalsifiable
(C) figments of the observer's imagination
(D) subject to change in the light of new facts

**95.** The antonyms of 'obey' is :
(A) disobey (B) refused
(C) accept (D) obedient

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