



— IAS 2022 —

Prelims/Mains TEST SERIES

Test Answer sheet

GENERAL STUDIES TEST - 05

ANSWERS AND EXPLANATION

Maximum Marks: 200

Q 1.C

- There are mainly two types of distinct architecture related to the caves, i.e. Chaitya and Viharas.
- Stupa, **vihara and chaitya are part of Buddhist and Jaina monastic complexes** but the largest number belong to the Buddhist religion. **Hence, statement 1 is correct.**
 - **Chaitya:** It is a rectangular prayer hall with a stupa placed in the centre. The Chaitya was divided into three parts, and had an apsidal ending, that is, a semicircular rear end, The central part of the hall (also called the nave) was separated from the two aisles by two rows of pillars, The chaityas also had polished interior walls, semicircular roofs and horse-shoe shaped windows called the Chaitya windows.
 - **Viharas:** They were dwelling place of monks. Pali texts indicate the structure of the viharas. The earlier structures were made of wood & soon developed from the primitive thatched huts into large sangharamas. In course of time the sangharamas developed into educational institutions & centres of Buddhist learning, such as those at Nalanda, Vikramasila, Somapura.
- **Origin of Chaitya and Viharas**
 - Both early Chaityas and Viharas were made by woods and later stone-cut Chaityas and Viharas were made.
 - The practice of making rock-cut caves was started during the Mauryan period and reached its zenith during the 2nd century AD under the Satavahana rule. **Hence, statement 2 is correct.**
 - Ashoka constructed eight **rock-cut halls in the Barabar & Nagarjuni hills and the one near Rajgir dedicated to Jaina monks.** The Lomas Rishi, the Sudama (both in the Barabar hills) and the Sitamarhi (Nagarjuni hills) caves are fine examples of the Chaityas which resembled the wooden buildings of the period.
 - The final form of rock-cut architecture that developed from these early forms can be seen all over India in Andhra Pradesh, Kathiawar in Gujarat and in Ajanta & Ellora.

Q 2.C

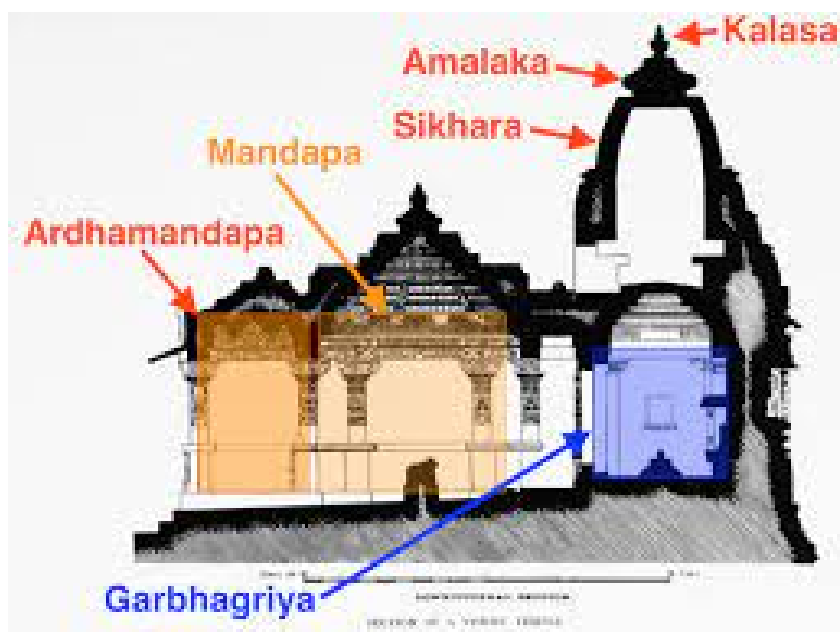
- The Gupta Empire existed from the mid-to-late 3rd century CE to 543 CE. This period is considered the Golden Age of India by historians.
- It was founded by Sri Gupta and some of the notable rulers of the dynasty were Chandragupta I, Samudragupta, and Chandragupta II alias Vikramaditya.
- We get some idea of the economic life of the people of Gupta times from the accounts of Fa-Hsien, who visited different parts of the Gupta empire.
- **Statement 1 is correct:** In ancient India, **the Guptas issued the largest number of gold coins**, which were called dinaras in their inscriptions. They vividly portray Gupta kings, indicating later love for war and art.
- **Statement 2 is not correct:** Compared to the earlier period we notice a decline in long-distance trade. Till 550 AD India carried on some trade with the Eastern Roman Empire to which it exported silk. Around 550 AD the people of the Eastern Roman Empire learned from the Chinese the art of growing silk, which adversely affected the export trade of India.
- **Statement 3 is correct:** The striking development of the Gupta period was **the emergence of priestly landlords at the cost of local peasants**. Land grants made to priests brought many virgin lands under cultivation. But these beneficiaries were imposed from above on the tribal peasants.

Q 3.C

- Some of the new kingdoms that emerged in the Deccan and further south, including the chiefdoms of the **Cholas, Cheras and Pandyas in Tamilakam** (the name of the ancient Tamil country, which included parts of present-day Andhra Pradesh and Kerala, in addition to Tamil Nadu), proved to be stable and prosperous.
 - The Cheras ruled over large parts of modern-day Kerala with their capital at Vanji. **Hence pair 1 is correctly matched.**
- Shakas** were people of Central Asian origin who established kingdoms in the north-western and western parts of the subcontinent, derived revenues from long-distance trade. **Hence pair 2 is correctly matched.**
- Kushanas** ruled over a vast kingdom extending from Central Asia to northwest India. They are considered to be one of the five branches of the Yuezhi tribe who lived in the **Chinese frontier or central Asia**. Kanishka is considered as the greatest Kushana king and also a great king of ancient India. **Hence pair 3 is not correctly matched.**

Q 4.B

- Three main styles of temple architecture are the Nagara or the Northern style, the Dravida or the Southern style and the Vesara or Mixed style.
- Some features of Nagara Style are:
 - It is common here to build an entire temple on a stone platform with steps leading up to it.
 - It doesn't usually have elaborate boundary walls or gateways.
 - Earliest temples had only one shikhara (tower), but in the later periods, multiple shikharas came.
 - The garbhagriha is always located directly under the tallest tower.
- The basic elements that comprise a Nagara Temple are given below:
 - Jagati:** This is common in north Indian temples and is a raised platform where devotees can sit and pray.
 - Mandapa:** The entrance to the temple or a hall where worshippers stand.
 - Antarala:** It is a vestibule between the Garbhagriha and the Mandapa.
 - Garbhagriha:** Literally means womb-house. It is a cave-like sanctum which houses the main icon of the temple. In earlier times, it was a small cubicle with one entrance. In later periods, it grew into a larger chamber.
 - Shikhara/Vimana:** Noticed from the 5th century CE. It is a mountain-like spire on top. In north India, it is called Shikhara and is curving in shape. In the south, it is like a pyramidal tower and is called Vimana.
 - Amalaka:** Stone-like disc seen at the top of the temple. Mostly in north Indian temples.
 - Kalasha:** It is the topmost part of the temple. Mainly seen in north Indian styles.
 - Vahana:** It is the vehicle of the main deity which along with the standard pillar or Dhvaj which are placed axially.
 - The sequence of parts of the temple is depicted below as one starts moving inside the temple.



- Hence option (b) is the correct answer.

Q 5.C

- The Harappans procured materials for craft production in various ways. For instance, they established settlements such as Nageshwar and Balakot in areas where shell was available.
- Other such sites were Shortughai, in far-off **Afghanistan**, near the best source of lapis lazuli, a blue stone that was apparently very highly valued, and **Lothal which was near sources of carnelian (from Bharuch in Gujarat), steatite (from south Rajasthan and north Gujarat) and metal (from Rajasthan)**.
- Another strategy for procuring raw materials may have been to send expeditions to areas such as the **Khetri region of Rajasthan (for copper) and south India (for gold)**.
- These expeditions established communication with local communities. Occasional finds of Harappan artefacts such as steatite micro beads in these areas are indications of such contact.
- There is evidence in the Khetri area for what archaeologists call the Ganeshwar-Jodhpura culture, with its distinctive non-Harappan pottery and an unusual wealth of copper objects. It is possible that the inhabitants of this region supplied copper to the Harappans.
- **Hence, option (c) is the correct answer.**

Q 6.C

- Some of the earliest bhakti movements (c. sixth century) were led by the **Alvars (literally, those who are “immersed” in devotion to Vishnu) and Nayanars (literally, leaders who were devotees of Shiva)**. **Hence statement 1 is correct.**
- They traveled from place to place singing hymns in Tamil in praise of their gods.
- During their travels, the Alvars and Nayanars identified certain shrines as abodes of their chosen deities. Very often large temples were later built at these sacred places. These developed as centers of pilgrimage.
- The importance of the traditions of the Alvars and Nayanars was sometimes indicated by the claim that their compositions were as important as the Vedas. For instance, **one of the major anthologies of compositions by the Alvars, the Nalayira Divyaprabandham, was frequently described as the Tamil Veda, thus claiming that the text was as significant as the four Vedas in Sanskrit that was cherished by the Brahmanas. Hence statement 2 is correct.**

Q 7.C

- The **founder of the Chola Empire** was **Vijayalaya**, who was at first a feudatory of the Pallavas. He captured Tanjore in 850 AD. By the end of the 9th century, the Cholas had defeated both the Pallavas of Kanchi and weakened the Pandyas, bringing the Southern Tamil country (Tondamandala) under their control. But the Cholas were hard put to defend their position against Rashtrakutas. **Hence statement 1 is correct.**
- The Cholas rulers **built a network of royal roads** that were useful for trade as well as for the movement of the army. Trade and commerce flourished in the Chola empire, and there were some gigantic trade guilds **that traded with Java and Sumatra.**
- The Cholas also **paid attention to irrigation**. The river Kaveri and other rivers were used for this purpose and many tanks for irrigation were built and a **tank committee** that looked after the distribution of water to the fields was formed.
- The Cholas also had a **strong navy**, as we have seen, which dominated the Malabar and Coromandal coast and for some time, the entire Bay of Bengal. **Hence, statement 2 is correct.**

Q 8.D

- The Indus people sowed seed in the flood plains in November, when the floodwater receded, and reaped their harvest of wheat and barley in April, before the advent of the next flood. They produced wheat, barley, rice, peas, sesame, mustard and rice. **Hence, statement 1 is correct.**
- Foodgrains were stored in huge granaries in both Mohenjodaro and Harappa. Probably, cereals were received as taxes from peasants and stored in granaries for the payment of wages as well as use during emergencies.
- No hoe or ploughshare has been discovered, but the furrows discovered in the pre-Harappan phase at kalibangan show that the fields were ploughed in Rajasthan in the Harappan period. The Harappans probably used the **wooden ploughshare**. We do not know whether the plough was drawn by men or oxen. Stone sickles may have been used for harvesting the crops. **Hence, statement 2 is not correct.**
- The Indus people were the earliest people to produce cotton. Because cotton was first produced in this area the Greeks called it “sindon”, which is derived from Sindh. **Hence, statement 3 is correct.**
- Ragi or finger millet is **not known** so far to any of the Harappan sites in north India. **Hence, statement 4 is not correct.**

Q 9.D

- The Paleolithic Period or Old Stone Age is the earliest period of human development, which lasted until approx 8000 BC. It is divided into two eras: the Lower Paleolithic (to 40,000 BC) and the Upper Paleolithic (40,000–8000 BC). During the Paleolithic period, man was a hunter and food gatherer. The human being used to use simple chipped and chopped type stone tools for hunting and other purposes.
- In India, the earliest paintings have been reported from the **Upper Palaeolithic times. Hence, statement 1 is not correct.**
- The paintings of the **Upper Palaeolithic phase** are linear representations, in green and dark red, of huge animal figures, such as bison, elephants, tigers, rhinos, and boars besides stick-like human figures. A few are wash paintings but mostly they are filled with geometric patterns. The green paintings are of dancers and the red ones of hunters. For example, the rock shelters on banks of the River Suyal at Lakhudiyar, about twenty kilometers on the Almora–Bareilly road, bear these prehistoric paintings. Lakhudiyar literally means one lakh caves. The paintings here can be divided into three categories: **man, animal, and geometric patterns in white, black, and red ochre.** Humans are represented in stick-like forms. A long-snouted animal, a fox, and a multiple-legged lizard are the main animal motifs. Wavy lines, rectangle-filled geometric designs, and groups of dots can also be seen here. **Hence, statement 2 is not correct.**
- During the **Mesolithic period**, the themes were multiple but the paintings are smaller in size. Hunting scenes predominate. The hunting scenes depict people hunting in groups, armed with barbed spears, pointed sticks, arrows and bows. In some paintings, these primitive men are shown with traps and snares probably to catch animals. The hunters are shown wearing simple clothes and ornaments. Sometimes, men have been adorned with elaborate head-dresses, and sometimes painted with masks also. Elephant, bison, tiger, boar, deer, antelope, leopard, panther, rhinoceros, fish, frog, lizard, squirrel, and at times birds are also depicted. **Hence, statement 3 is not correct.**

Q 10.A

- The Mahājanapadas were sixteen kingdoms or oligarchic republics that existed in Northern ancient India from the sixth to fourth centuries BCE.
 - Magadha (in present-day Bihar) became the most powerful mahajanapada. Various factors responsible were:
 - Magadha was a region where agriculture was especially productive.
 - **Besides, iron mines (in present-day Jharkhand) were accessible and provided resources for tools and weapons. Hence statement 1 is correct.**
 - **Elephants, an important component of the army, were found in forests in the region. Hence, statement 2 is correct.**
 - Also, the Ganga and its tributaries provided a means of cheap and convenient communication
 - Advancement in education and growth of revolutionary ideas like Buddhism and Jainism.
- **However, early Buddhist and Jaina writers who wrote about Magadha attributed its power to the policies of individuals: ruthlessly ambitious kings of whom Bimbisara, Ajatasatru, and Mahapadma Nanda are the best known, and their ministers, who helped implement their policies. Hence, statement 3 is correct.**
- Initially, Rajagaha was the capital of Magadha. Interestingly, the old name means “house of the king”. Rajagaha was a fortified settlement, located amongst hills. Later, in the fourth century BCE, the capital was shifted to Pataliputra, present-day Patna, commanding routes of communication along the Ganga.

Q 11.B

- Ajivika is one of the nāstika or "heterodox" schools of Indian philosophy. Makkhali Gosala is considered as its founder in 5th century BCE. Several rock-cut caves belonging to Ajivika are dated to the times of the Mauryan emperor Ashoka who patronized the Ajivika sect. **Hence statement 1 is not correct.**
- The rock-cut cave carved at **Barabar hills** near Gaya in Bihar is known as the **Lomas Rishi cave. The facade of the cave is decorated with the semicircular chaitya arch as the entrance. Hence statement 2 is correct.**
- The elephant frieze carved in high relief on the chaitya arch shows considerable movement. The interior hall of this cave is rectangular with a circular chamber at the back.

Q 12.D

- The end of the Neolithic period saw the use of metals. The metals to be used first was copper and several cultures were based on the use of stone and copper implements. The Chalcolithic people mostly used copper and stone objects but they also occasionally used low-grade bronze. **Hence option (a) is correct.**

- These people were expert coppersmiths and also good workers in stone. We have tools, weapons, and bangles of copper of this age. They manufactured beads of steatite, carnelian, and quartz crystal. **Hence, option (b) is correct.**
- People knew the art of spinning and weaving because spindle whorls have been discovered in Malwa. Cotton, flax, and silk threads made of cotton silk of semal/silk have been found in Maharashtra. This shows that these people were well acquainted with the manufacture of cloth. **Hence, option (c) is correct.**
- The people of the chalcolithic phase used different types of pottery: black and red were the most prevalent, others were black-on-red (found in Jorwe) and ochre-colored pottery (OCP) which roughly covered the period between 2000 B.C and 1500 B.C. The OCP people were junior contemporaries of the Harappans and the area in which they lived was not far removed from that of the Harappans. **Hence option (d) is not correct.**

Q 13.D

- The Delhi Sultanate was an Islamic empire based in Delhi that stretched over large parts of the Indian subcontinent for 320 years. Five dynasties ruled over the Delhi Sultanate sequentially: the Mamluk dynasty, the Khalji dynasty, the Tughlaq dynasty, the Sayyid dynasty, and the Lodi dynasty
- **The Dagh and Chehra system was introduced by Alauddin Khilji (1296–1316)** and consisted of two practices: Ala-ud-din introduced a system of chehra, an identity card system for every soldier, and dagh to brand horses to be used specifically for wars. **Hence statement 1 is not correct and statement 2 is correct.**
- **Ghiasuddin Balban introduced a separate military department (Diwan-i-Ariz)** and appointed Kotwal.
- **Firoz Tughlaq made iqta system hereditary and introduced a separate department of slaves called diwan-i-bandagan.** Hence statement 3 is correct.

Q 14.C

- **Gupta Administration**
 - The king was assisted in his administration by a council consisting of a chief minister, a Senapati or commander-in-chief of the army, and other important officials. A high official called Sandivighraha was mentioned in the Gupta inscriptions, most probably minister for foreign affairs.
 - **The king maintained close contact with the provincial administration through a class of officials called Kumaramatyas and Ayuktas. They were important officers in the Gupta administration and were appointed by the king.** Hence, option (c) is the correct answer.
 - Provinces in the Gupta Empire were known as Bhuktis and provincial governors as Uparikas. They were mostly chosen from among the princes.
 - Bhuktis were subdivided into Vishyas or districts. They were governed by Vishyapatis. Nagara Sreshtis were the officers looking after the city administration. The villages in the district were under the control of Gramikas.

Q 15.A

- Akbar introduced a number of Social and Educational Reforms:
 - He stopped sati-unless, she herself, of her free will persistently desire for it. This led to a restriction on sati, not a blanket ban. **Hence option (a) is not correct.**
 - Widow marriages were legalized. **Hence option (b) is correct.**
 - The age of marriage was raised to 14 for girls and 16 for boys. **Hence option (c) is correct.**
 - The sale of wines and spirits was restricted.
 - Akbar, was also against having more than one wife unless the first wife was barren.
 - He revised the education syllabus, laying more emphasis on Moral education and mathematics and on secular subjects. **Hence option (d) is correct.**

Q 16.C

- The contribution of women writers in different languages deserves special attention.
- **Women writers like Ghosha, Lopamudra, Gargi, Maitreyi, Apala, Romasha Brahnavadini, etc.,** right from the days of the Vedas, focused on the image of women in mainstream Sanskrit literature.
- The songs of **Buddhist nuns (6th century B.C.) like Mutta and Ubbiri and Mettika in Pali** express the torment of feelings for the life left behind.
- The **Alwar women poets (6th century A.D.), like Andal and others,** gave expression to their love for the divine.

- **Lal Ded (1320-1384), the Muslim poetess from Kashmir Lalded & Habba Khatun**, represented the Sant tradition of bhakti and wrote Vakhs (maxims), which are peerless gems of spiritual experience.
- **Meera Bai, in Gujarati, Rajasthani and Hindi** (she wrote in three languages),
- **Avvayyar, in Tamil, and Akkamahadevi in Kannada**, are well known for their sheer lyrical intensity and concentrated emotional appeal.
- Their writings speak to us about the social conditions prevailing at that time, and the position of woman at home and in society.
- They all wrote small lyrics or poems of devotional fervour, metaphysical depth, and with a spirit of dedication and utmost sincerity. Behind their mysticism and metaphysics is a divine sadness. They turned every wound inflicted by life into a poem.
- **Hence option (c) is the correct answer.**

Q 17.A

- During the Vedic age, the king's influence was strengthened by various rituals, such as
 - **Rajasuya Sacrifice:** Supposed to confer supreme power on him. It is a king's inaugural sacrifice. After conquering the kings of several other kingdoms and collecting tribute from the conquered land, the vanquished kings are invited to attend the Rajasuya yajna. All the vanquished kings would consider the performer of this yajna as their Emperor (King of kings). **Hence, pair 1 is correctly matched.**
 - **Vajapeya Sacrifice:** Chariot race which a royal chariot was made to win the race against his kinsmen. **Hence, pair 2 is not correctly matched.**
 - **Ashvamedha Sacrifice:** Unquestioned control over the area on which the royal horse ran uninterrupted. **Hence, pair 3 is not correctly matched.**
 - **Hence, option (a) is the correct answer.**

Q 18.D

- The World Bank's Board of Executive Directors has approved a \$500 million program to support India's nationwide initiative to revitalize the MSME sector. The \$500 million Raising and Accelerating Micro, Small and Medium Enterprise (MSME) Performance (RAMP) Program is the World Bank's second intervention in this sector, the first being the \$750 million MSME Emergency Response Program, approved in July 2020 to address the immediate liquidity and credit needs of millions of viable MSMEs severely impacted by the ongoing COVID-19 pandemic.
- The RAMP program will provide better access to finance and working capital for MSMEs by strengthening the receivable financing markets, and scale up online dispute resolution mechanisms to address the problem of delayed payments. Such efforts are expected to improve the cost-effectiveness, quality, accessibility, impact, and outreach of such schemes. The \$500 million loans from the International Bank for Reconstruction and Development (IBRD), has a maturity of 18.5 years including a 5.5-year grace period.
- **Hence option (d) is the correct answer.**

Q 19.D

- Sangam literature is the compilation of the earliest available Tamil literature. The word 'Sangam' literally means association. It implies an association of Tamil poets that flourished in ancient southern India. The three chief Tamil kingdoms of this period were the Cheras, the Cholas, and the Pandyas. The Sangam period roughly extends between 300 BC and 300 AD, although most of the work is believed to have been composed between 100 CE and 250 CE.
- The Sangam texts are different from the Vedic texts, particularly the Rig Vedic texts. They do not constitute religious literature. The short and long poems were composed by numerous poets in praise of numerous heroes and heroines. Thus they are secular in nature. **Hence, statement 1 is correct.**
- They are not primitive songs, but they show a high quality of literature. Many poems mention a warrior or a chief or a king by name and describe his military exploits in detail. The gifts made by him to bards and warriors are celebrated. These poems may have been recited in the courts. **Hence, statement 2 is correct.**
- The Sangam texts refer to many settlements including Kaveripattanam whose flourishing existence is now attested archaeologically. They also speak of the Yavanas (foreigners) coming in their own vessels purchasing pepper with gold and supplying wine and women slaves to the natives. This trade is not known only from Latin and Greek writings but also from archaeological records. The Sangam literature is a very major source of our information for the social, economic and political life of the people living in deltaic Tamil Nadu in the early Christian centuries. **Hence, statement 3 is correct.**

Q 20.C

- **The earliest literature of South India is represented by a group of texts in old Tamil, often collectively referred to as Sangam literature.**
- The Sangam corpus includes six of the eight anthologies of poems included in the *Ettutokai* (The Eight Collections), and nine of the ten *pattus* (songs) of the *Pattuppattu* (The Ten Songs). The earliest parts of the first two books of the *Tolkappiyam* can also be included in Sangam literature. The *Tolkappiyam* is essentially a work on grammar, but it also includes a discussion of phonology, semantics, syntax, and literary conventions.
- The style and certain historical references in the poems suggest that they were composed between the 3rd century BCE and the 3rd century AD.
- **The poems are of two types—*akam* (love poems) and *puram* (heroic poems).**
- The poets had diverse social backgrounds and their poems, modelled on the songs of the humble bards and drummers of earlier times, are a rich and evocative source for the society of *Tamilakam* (the Tamil land) between the 3rd century BCE and the 3rd century AD.

Q 21.A

- Recently on the occasion of World Environment Day, the **Prime Minister of India launched the E-100 project. The ambitious project aims to set up a network for the production and distribution of ethanol across the nation. Hence option (a) is the correct answer.**
- Ethanol extracted from sugarcane as well as damaged food grains such as wheat and broken rice and agriculture waste is less polluting and its use also provides farmers with an alternate source of income.
- The Prime Minister also released the '**Report of the Expert Committee on Road Map for ethanol blending in India 2020-2025**', in line with the theme for World Environment Day this year - **promotion of biofuels for a better environment**. The government has resolved to meet the target of 20 percent ethanol blending in petrol by 2025. Earlier the resolve was to achieve the target by 2030 which is now preponed by 5 years.

Q 22.B

- **Mohiniyattam Dance:**
 - It is one of the **classical dances** from the state of Kerala.
 - It gets its name from the word Mohini – a historical enchantress avatar of the Hindu god Vishnu, who helps the good prevail over evil by developing her feminine powers.
 - It traces its roots from the Natya Shastra – the ancient Hindu Sanskrit text on performance arts.
 - It follows the Lasya style described in Natya Shastra, that is a dance which is delicate, eros-filled and feminine. It is **traditionally a solo dance performed by women** after extensive training.
 - The repertoire of Mohiniyattam includes music in the Carnatic style, singing and acting a play through the dance, where the recitation may be either by a separate vocalist or the dancer herself.
 - It was structured into the present-day classical format by the Travancore Kings, Maharaja Kartika Tirunal and his successor Maharaja Swati Tirunal (18th -19th century C.E.).
- **Salient Features of Mohiniyattam Dance:**
 - Mohiniyattam is **characterized by graceful, swaying body movements with no abrupt jerks or sudden leaps**. It belongs to the lasya style which is feminine, tender and graceful.
 - The movements are emphasized by the glides and the up and down movement on toes, like the waves of the sea and the swaying of the coconut, palm trees and the paddy fields.
 - The foot work is not terse and is rendered softly. Importance is given to the hand gestures and Mukhabhinaya with subtle facial expressions.
 - **Movements have been borrowed from Nangiar Koothu and female folk dances Kaikottikali and the Tiruvattirakali.**
 - The hand gestures, 24 in number, are mainly adopted from Hastalakshana Deepika, a text followed by Kathakali. Few are also borrowed from Natya Shastra, Abhinaya Darpana and Balaram Bharatam.

Q 23.C

- Recently, the **country's first CAR-T cell therapy was done at the Bone Marrow Transplant unit at ACTREC, Tata Memorial Centre in Mumbai. The CAR-T cells were designed and manufactured at the Bioscience and Bioengineering (BSBE) department of IIT, Bombay.**
- The **Chimeric Antigen Receptor T-cell (CAR-T)** therapy has emerged as a breakthrough in cancer treatment. Clinical trials conducted globally have shown promising results in end-stage patients, **especially in patients suffering from acute lymphocytic leukemia. Hence option (c) is the correct answer.**

- The development of the CAR-T cell technology for diseases including acute lymphocytic leukemia, multiple myeloma, glioblastoma, hepatocellular carcinoma, and type-2 diabetes is supported through DBT.
- **Chimeric antigen receptor T cells are T cells that have been genetically engineered to produce an artificial T-cell receptor for use in immunotherapy.** Chimeric antigen receptors are receptor proteins that have been engineered to give T cells the new ability to target a specific protein. Chimeric antigen receptor (CAR) T-cell therapy is a way to get immune cells called T cells (a type of white blood cell) to fight cancer by changing them in the lab so they can find and destroy cancer cells. CAR T-cell therapy is also sometimes talked about as a type of cell-based gene therapy because it involves altering the genes inside T cells to help them attack cancer.
- **Acute lymphocytic leukemia (ALL)** is a type of cancer of the blood and bone marrow — the spongy tissue inside bones where blood cells are made. The word "acute" in acute lymphocytic leukemia comes from the fact that the disease progresses rapidly and creates immature blood cells, rather than mature ones. The word "lymphocytic" in acute lymphocytic leukemia refers to the white blood cells called lymphocytes. Acute lymphocytic leukemia is also known as acute lymphoblastic leukemia.

Q 24.C

- The Jataka stories are a voluminous body of literature **concerning the previous births of Buddha in both human and animal form. Hence statement 1 is correct.**
- Among the Jataka stories that are frequently depicted are Chhadanta Jataka, Vidurpundita Jataka, Ruru Jataka, Sibi Jataka, Vessantara Jataka and Shama Jataka.
- Jataka stories were depicted on the **railings and torans of the stupas. Hence statement 2 is correct.**
- Mainly synoptic narrative, continuous narrative and episodic narrative are used in the pictorial tradition. While events from the life of the Buddha became an important theme in all the Buddhist monuments, the Jataka stories also became equally important for sculptural decorations. The main events associated with the Buddha's life which were frequently depicted were events related to the birth, renunciation, enlightenment, dhammachakra- pravartana, and mahaparinibbana (death).

Q 25.D

- On the ruins of the Kushan empire arose a new empire, which established its sway over a good part of the former dominions of both the Kushans and Satavahanas. This was the empire of the Guptas.
- Although the Gupta empire was not as large as the Maurya empire, it kept north India politically united for more than a century from AD. 335 to 455. The Guptas were possibly the feudatories of the Kushans in Uttar Pradesh, and seem to have succeeded them without any wide time-lag.
- **Factors that led to the rise and growth of the Gupta Empire:**
 - In the Kushan scheme of things, horse-chariots and elephants had ceased to be important. Horsemen played the main part in the case with the Guptas. Although some Gupta kings are described as excellent and unrivaled chariot warriors, **their basic strength lay in the use of horses.** All these gave them mobility and made them excellent horsemen. **Hence option 1 is correct.**
 - The Guptas enjoyed certain material advantages. The center of their operations **lay in the fertile land** of Madhyadesha covering Bihar and Uttar Pradesh. They could exploit the **iron ores of central India and south Bihar. Hence option 2 is correct.**
 - Further, **they took advantage of their proximity to the areas in north India which carried on silk trade** with the Eastern Roman empire. also known as the Byzantine empire. **Hence option 3 is correct.**

Q 26.C

- **Manipuri** is one of the main styles of Indian Art or Classical Dances that originated in the state of Manipur.
- The dance in Manipur is associated with rituals and traditional festivals, there are legendary references to the dances of Shiva and Parvati and other gods and goddesses who created the universe.
- **Lai Haraoba** is one of the main festivals still performed in Manipur which has its roots in the pre-Vaishnavite period. Lai Haraoba is the earliest form of dance which forms the basis of all stylized dances in Manipur.
- **Manipur dance has a large repertoire, however, the most popular forms are the Ras, the Sankirtana and the Thang-Ta.** There are five principal Ras dances of which four are linked with specific seasons, while the fifth can be presented at any time of the year. In Manipuri Ras, the main characters are Radha, Krishna and the gopis.

- The Kirtan form of congregational singing accompanies the dance which is known as **Sankirtana in Manipur**.
 - The male dancers play the Pung and Kartal while dancing. The masculine aspect of dance - the Choloms are a part of the Sankirtana tradition. The **Pung and Kartal choloms are performed at all social and religious festivals**.
- **Hence, option (c) is the correct answer.**

Q 27.A

- The **Ministry of Social Justice and Empowerment launched the SAGE (Seniorcare Aging Growth Engine) initiative and SAGE portal for elderly persons. Hence statement 2 is not correct.**
- **The SAGE portal will be a “one-stop access” of elderly care products and services by credible start-ups.** The start-ups will be selected on the basis of innovative products and services, which they should be able to provide across sectors such as health, housing, care centers, apart from technological access linked to finances, food and wealth management, and legal guidance. **Hence statement 1 is correct**
- SAGE program and SAGE portal have been launched with a view to help such persons who are interested in entrepreneurship in the field of providing services for elderly care. The Ministry has designed the SAGE program as per the suggestions of the Empowered Committee on start-ups for the elderly to solicit the involvement of youth and their innovative ideas for elderly care. This will help to make the programs for elderly care a national movement than just a government program.
- An allocation of Rs 25 crores has been made for the SAGE project in the current financial year i.e 2021-22. The start-ups will be selected by an independent screening committee of experts. A fund of up to Rs.1 crore as one-time equity will be granted to each selected start-up.
- The SAGE project aims to identify, evaluate, verify, aggregate, and deliver products, solutions, and services directly to the stakeholders. The Ministry will act as a facilitator, enabling the elderly to access the products through these identified start-ups.

Q 28.D

- The **Indian Space Research Organisation’s Vikram Sarabhai Space Centre (VSSC) in Thiruvananthapuram, has developed three different types of ventilators and an oxygen concentrator** at a time when a shortage of this critical medical equipment resulted in the deaths of many Covid-19 patients across the country. **PRANA, SVASTA, and VaU** (read as Vayu) are the names of the models.
- The design of 'PRANA' - standing for 'Programmable Respiratory Assistance for the Needy Aid' - is based on an Ambu bag (a commercial manual respirator bag) PRANA delivers oxygen-rich air to the patient by automated compression of the Ambu bag using an actuator.
- Short for Space Ventilator Aided System for Trauma Assistance (SVASTA) is designed to work without electric power. The system operates on compressed air and achieves different modes of ventilation through mechanical settings alone.
- VaU, a pneumatic circuit-based system expanded as a Ventilation assist Unit is a more ambitious project that eyes a low-cost, state-of-the-art ventilator that can match the high-end, expensive ones in the market. VaU is a dual-mode ventilator that can work with either medical oxygen from the hospital or with ambient air.
- **Hence option (d) is the correct answer.**

Q 29.A

- **Rural expansion:** In South India, during the ancient period we come across **three types of villages; ur, sabha, and nagaram**.
 - **Ur was the usual type of village** inhabited by peasant castes, who perhaps held that in common; it was the responsibility of the village headman to collect and pay taxes on their behalf. These villages were mainly found in Southern Tamil Nadu.
 - The **sabha type of village** consisted of brahmadeya villages or those granted to the Brahmanas, and of agraahara villages. The brahmana owners enjoyed individual rights in the land but carried on their activities collectively.
 - The **nagaram type of village** consisted of the village settled and dominated by combinations of traders and merchants.
- **Hence option (a) is the correct answer.**

Q 30.A

- The Vaiseshika school was based on a theory of the atom, explaining the cosmic process in which the soul was involved. Atomism is a theoretical approach that regards something as interpretable through analysis into distinct, separable, and independent elementary components. **Hence statement 1 is correct.**
- The Vaiseshika, like the Sankhyas, held that the soul was wholly different from the cosmos and that its salvation lay in fully realizing this difference. **Hence statement 2 is correct.**
- The Yoga, which is in general agreement with the entire metaphysical position of the Sankhya, thinks that the elements leading to a positive misconception or misidentification of the Purusha as being of the same nature as the guna complexes are responsible for the possibility of the nissus and the resulting experience. **Hence statement 3 is not correct.**

Q 31.C

- Indian classical music is categorized based on two traditions, the Carnatic music prevalent in South India and the Hindustani classical music in North India.
- Carnatic Music is composed of a system of Ragam (Raga) and Thalam (Tala). There are various musical forms in both styles:
- **Musical form of Carnatic Music:**
 - Gitam: It is the simplest type of composition with an easy and melodious flow of raga.
 - **Tanam:** It is raga alapana in Madhyamakala or medium speed. There is perceptible rhythm in this. The rhythmical flow of music, flowing in fascinating patterns, makes tanam singing the most captivating part of raga exposition. **Hence option 3 is correct.**
 - **Tilanna:** It is mainly a dance form, but on account of its brisk and attractive music, it sometimes finds a place in music concerts as a conclusion piece. It usually begins with jatis. The music is of comparatively slow tempo in Tillanas meant for dance purposes. **Hence option 1 is correct.**
 - Suladi: The Suladi is a talamalika, the sections being in different talas.
 - Svarajati: It consists of three sections, called Pallavi, Anupallavi and Charanam. The theme is either devotional, heroic or amorous.
 - Jatisavaram: It is noted for the use of rhythmical excellence and the Jati pattern.
 - Varnam: It is the only form which does not find a counterpart in Hindustani music. This form is called a Varnam because many of the Svara group patterns called 'Varnas' in ancient music are interwoven in its texture.
 - Kirtanam: It is valued for the devotional content or Bhakti Bhava of the Sahitya.
 - Kriti: It developed from the Kirtanam. It is a highly evolved musical form.
 - Pallavi: This is the most important branch of creative music. It allows improvisation.
- The major vocal forms or **styles associated with Hindustani classical music** are dhrupad, khyal, and tarana. Light classical forms include dhamar, trivat, chaiti, kajari, **tappa**, tap-khyal, ashtapadis, thumri, dadra, ghazal and bhajan; these do not adhere to the rigorous rules of classical music. **Hence option 2 is not correct.**
 - **Tappa** consists of the song uttered in fast note patterns. It is a difficult composition and needs much practice. Both the Thumri and Tappa require special training as do the Dhrupad and Khyal forms of singing. Ragas in which Tappa compositions are set remain same as in Thumri style.

Q 32.A

- The Group of Monuments at Mahabalipuram is a collection of 7th- and 8th-century CE religious monuments in Tamil Nadu. The monuments were built during the Pallava dynasty. The group contains several categories of monuments:
- **Ratha temples**
 - They are with monolithic temples carved in the shape of chariots.
 - The best-known are the five monolithic structures known as the Five Rathas or the Pandava Rathas: Dharmaraja Ratha, Bhima Ratha, Arjuna Ratha, Nakula-Sahadeva Ratha and Draupadi Rathas.
 - Other ratha monuments at Mahabalipuram include the late-7th-century **Ganesha Ratha**. It is three--storeyed and of better workmanship, it resembles the Bhima-ratha in roof form. **Hence option 2 is correct.**
- **Structural temples**
 - The structural (free-standing) temples at Mamallapuram have been built with cut stones as building blocks. Some of the major temples are:
 - > **Shore Temple:** It consists of a large temple, two smaller temples and many minor shrines, open halls, gateways, and other elements, much of which is buried by sand. **Hence option 1 is correct.**

- > Olakkanesvara temple: It was built in the early 8th century from grey granite by King Rajasimha. The walls of the temple depict the Ravananugraha legend from the Ramayana and a relief of Dakshinamurti (Shiva as a yoga teacher).
- > Mukundanayanar temple: It has ratha-like architecture.
- **Rock reliefs**
 - The best-known rock relief is the Descent of the Ganges also known as Arjuna's Penance or Bhagiratha's Penance.
 - It has two primary interpretations: the effort needed to bring the Ganges from the heavens to earth, and the Kirātārjunīya legend and the chapter from the Mahabharata about Arjuna's efforts to gain the weapon he needed to help good triumph over evil.
- **Cave temples:**
 - Varaha cave
 - Kotikal cave
 - Dharmaraja cave
 - Ramanuja Cave
- **Lad Khan temple** (or Chalukya Shiva Temple), dedicated to Shiva, is one of the oldest Hindu temples and is located in the group of monuments at **Aihole** in the state of Karnataka. **Hence, option 3 is not correct.**

Q 33.C

- **The Administration of the Chola Empire**
 - Settlements of peasants, known as ur, became prosperous with the spread of irrigation agriculture. Groups of such villages formed larger units called Nadu. The village council and the Nadu performed several administrative functions including dispensing justice and collecting taxes. Rich peasants of the Vellala caste exercised considerable control over the affairs of the Nadu under the supervision of the central Chola government. The Chola kings gave some **rich landowners titles** like **muvendavelan (a velan or peasant serving three kings), araiyar (chief)**, etc. as markers of respect, and entrusted them with important offices of the state at the center.
- **Northern India: Age of the Three Empire**
 - **Political Ideas and organization:**
 - The village was the basic unit of administration. The village administration was carried on by the village headman and village accountant whose posts were generally hereditary. They were paid by grants of rent-free lands. The headman was often helped in his duties by the **elder called grama-mahajana or grama-mahattara**.
 - During this period we also hear of **officials of the royal household** which were called **antahpur**.
 - **Hence option (c) is the correct answer.**

Q 34.B

- **Kathak Dance:** It is one of the eight major forms of Indian classical dance.
- Its **origin is traditionally attributed to the traveling bards in the North of Ancient India known as Kathakars or storytellers.**
 - Sankaradeva was the Vaishnava saint and reformer of Assam who introduced Sattriya dance as a powerful medium for the propagation of the Vaishnava faith. **Hence, statement 1 is not correct.**
- Kathak evolved during the Bhakti movement, particularly by incorporating the childhood and stories of the Hindu god Krishna, as well as independently in the courts of north Indian kingdoms.
- Kathak is found in three distinct forms, called "gharanas", named after the cities where the Kathak dance tradition evolved – Jaipur, Banaras and Lucknow.
- **Features:**
 - It emphasizes rhythmic foot movements, adorned with small bells (Ghungroo) and the movement harmonized to the music.
 - The legs and torso are generally straight, and the story is told through a developed vocabulary based on the gestures of arms and upper body movement, facial expressions, neck movements, eyes and eyebrow movement, stage movements, bends and turns.
- **It is the only classical dance of India having links with Muslim culture. It represents a unique synthesis of Hindu and Muslim genius in art.**
- **Kathak is the only form of classical dance wedded to Hindustani or North Indian music.** Both of them have had a parallel growth, each feeding and sustaining the other. **Hence, statement 2 is correct.**

Q 35.C

- **Narasimhavarman I:**
 - Narasimhavarman I, surnamed **Mahamalla (630-668 A.D.)**, was the son and successor of **Mahendravarman I** and considered as the greatest of the Pallava rulers. He is credited with **repelling the second invasion of Pulakesin II, killing him and capturing the Chalukyan capital Vatapi and won thereby the title of Vatapikonda (conqueror of Vatapi)**. Hence option (c) is the correct answer.
 - It was possibly in his struggle with Pulakesin II that he received **aid from the Sinhalese Prince Mana-Vamma** whom he afterward assisted in securing the crown of Ceylon. **Hiuen Tsang visited Kanchi about the year 642 A.D.** during the reign of Narasimhavarman I. He is also said to have defeated the Cholas, the Cheras, the Pandyas, and the Kalabhras.
 - He was an ardent lover of art and consecrated cave temples at different places such as Trichinopoly and Pudukkottai. His name is, however, best known in connection with the so-called **Rathas of Mahabalipuram**. The original name of the place, Mahamallapura commemorates its royal founder, Mahamalla, i.e., Narasimhavarman I.

Q 36.C

- **Pulakeshin II (609–642 CE)** was the most famous Chalukya king. He is known to us from his eulogy written by the **court poet Ravikirti** in the **Aihole inscription**. This inscription is an example of poetic excellence reached in Sanskrit, and in spite of its exaggeration is a valuable source for the biography of Pulakeshin. He subjugated the Kadamba capital at Banavasi and compelled the Gangas of Mysore to acknowledge his suzerainty. In his conflict with the Pallavas, he almost reached the Pallava capital, but Pallavas purchased peace by ceding their northern provinces to Pulakeshin II.
- The most notable military achievement of Pulakeshin was his **victory over** the powerful northern emperor **Harsha-Vardhan**, whose failure to conquer the Chalukya kingdom is attested by the Chinese pilgrim **Hiuen Tsang who visited his kingdom**.
- **About King Harsha** - Harshavardhana belonged to the Pushyabhuti dynasty, founded by Naravardhana close of the 5th or beginning of the 6th century A.D. It was only under the king of Thaneshwar Prabhakarvardhana (father of Harshavardhana), the Pushyabhuti dynasty flourished and he assumed the title of Maharajadhiraja. Harshavardhana succeeded the throne in 606 A.D. at the age of sixteen after his elder brother Rajyavardhana was killed by Sasanka while going to suppress the kings of Gauda and Malwa.
- **Hence option (c) is the correct answer.**

Q 37.B

- A major feature of the Chishti tradition was austerity, including maintaining a distance from worldly power. **However, this was by no means a situation of absolute isolation from political power.** Hence **statement 1 is correct.**
- The sufis **accepted unsolicited grants and donations from the political elites. The Sultans in turn set up charitable trusts (auqaf) as endowments** for hospices and granted tax-free land (inam). Hence **statement 2 is correct.**
- The Chishtis **accepted donations in cash and kind.** Rather than accumulate donations, they preferred to use these fully on immediate **requirements such as food, clothes, living quarters and ritual necessities (such as sama).** Hence **statement 3 is correct.**

Q 38.B

- **Bhavai is a popular folk theatre form in Gujarat with a 700-year old history. The word Bhavai derives its meaning from a combination of two words—bhav meaning emotion, and Vahini meaning carrier—thus it is named as an art form which is a carrier of emotions. Hence pair 1 is correctly matched.**
 - The centers of this form are Kutch and Kathiawar.
 - The instruments used in Bhavai are bhungal, tabla, flute, pakhaawaj, rabaab, sarangi, manjeera, etc.
 - In Bhavai, there is a rare synthesis of devotional and romantic sentiments.
- **Maach is a prominent folk theatre form of Madhya Pradesh. Gopalji Guru of Bhagsipura, Ujjain, is touted to be the one who introduced maach in Madhya Pradesh; he eventually authored many maach plays himself. Hence pair 2 is correctly matched.**
 - Traditionally, maach is performed around the Indian festival of Holi and it is also believed that maach originated to entertain the local communities as there was no other mode of entertainment available in those times.

- The term maach is a Malwi translation of the Hindi word manch (stage). Essentially, the term maach signifies two meanings, the stage itself and the play/performance.
- Maach is basically a musical play where a group of performers sing and dance along with dramatic representation of many mythological, religious and historical stories.
- Maach is mainly performed by men who also perform the roles of the female characters.
- Maach, through its stories, discusses the ideas of power, splendour, injustice, violence and social issues with the audience, which largely comprises farmers, with the help of relatable historical figures, and mythical and religious characters
- In maach, dialogues are called bol, rhyme in the narrative structure is known as vanag and the melodies of this folk theatre are called rangat. Being a musical theatre form, songs take precedence over dialogues.
- **Krishnattam is a folk theatre art of Kerala which came into existence in the middle of 17th century A.D. under the patronage of King Manavada of Calicut. Hence pair 3 is not correctly matched.**
 - Krishnattam is a cycle of eight plays performed for eight consecutive days. The plays are Avataram, Kalamandana, Rasa krida, kamasavadha, Swayamvaram, Bana Yudham, Vivida Vadham, and Swargarohana.
 - The episodes are based on the theme of Lord Krishna - his birth, childhood pranks, and various deeds depicting the victory of good over evil.
 - The most unique and distinguishing feature of Krishnattam is the use of masks for some of the characters. The masks are larger than life, with the features exaggerated, some even deformed.
 - The instruments that are used in the Krishnattam stage are 'Maddalam', 'Chengalam', 'Elatalam', Conch, and 'Edakka'.

Q 39.C

- **The Indian Navy participated for the first time in the French naval exercise La Perouse in the Bay of Bengal.** The participating nations also include the other **Quadrilateral Security Dialogue (Quad) member countries -- Australia, Japan, and the United States of America (USA).**
- This is the first time that the Indian Navy was of the France-led war game 'La Perouse'. Until now, India was not invited to the French naval exercise. Exercise La Pérouse witnessed complex and advanced naval operations including surface warfare, anti-air warfare, and air defense exercises, weapon firing exercises, cross deck flying operations, tactical maneuvers, and seamanship evolutions such as replenishment at sea. The exercise showcased high levels of synergy, coordination, and interoperability between the friendly navies. Participation by the Indian Navy in the exercise demonstrated the shared values with friendly navies ensuring freedom of seas and commitment to an open, inclusive Indo-Pacific and a rules-based international order.
- Indian Navy Ships INS Satpura (with an integral helicopter embarked) and INS Kiltan along with P8I Long Range Maritime Patrol Aircraft participated in the exercise.
- The Quad, officially the Quadrilateral Security Dialogue, is a group of four countries: the United States, Australia, India, and Japan. Maritime cooperation among them began after the Indian Ocean tsunami of 2004.
- **Hence option (c) is the correct answer.**

Q 40.C

- The entire period from 800 to 1200 (early medieval) may be regarded as one for the purpose of studying economic, social, and religious aspects.
- In north India, this period is often considered a period of stagnation and even of decline. **This is seen in the steady decline of towns. Hence, statement 3 is correct.**
- **Also, there was the absence of gold and silver coins between the 7th and 10th centuries.** The absence of gold and silver coins is sometimes traced to the collapse in the west of the Roman empire with which India had a flourishing and profitable trade. **Hence, statement 2 is not correct.**
- **While India's trade with the western areas declined, trade with south-east Asia and China grew steadily.** The lead in this trade was taken by south India. **Hence, statement 1 is not correct.**

Q 41.C

- **States of the Deccan and South India:**
 - The Ikshvakus were supplanted by the Pallavas.
 - The term **Pallava means creeper** and is a Sanskrit version of the Tamil word tondai, which also carries the same meaning. The Pallavas were possibly a local tribe who established their authority in

the **Tondainadu or the land of creepers**. But it took them some time to be completely civilized and acceptable because in Tamil the word Pallava is also a synonym of the robber.

- The authority of Pallavas extended over both southern Andhra and northern Tamil Nadu. They set up their capital at Kanchipuram. The early Pallavas came into conflict with the Kadambas, who had founded their rule in northern Karnataka and Konkan in the fourth century A.D. **Hence, statement 1 is correct.**
- Pallavas granted numerous villages free of taxes largely to the Brahmanas. We have as many as 16 land charters of the early Pallavas. A few, which seem to be **earlier, are written on stone in Prakrit**. But **most of them were recorded on copper plates in Sanskrit**. **Hence, statement 3 is not correct.**
- The **Pallavas, the Kadambas, the Chalukyas of Badami, and their other contemporaries** were great champions of Vedic sacrifices. They performed Ashvamedha and Vajapeya sacrifices. **Hence, statement 2 is correct.**

Q 42.A

- To help out horticulturists who face crop damage due to hailstorms, the Himachal Pradesh government will be testing the use of indigenously developed ‘anti-hail guns’. In 2010, the state government had imported three anti-hail guns from the United States and installed them in three separate villages in the apple-growing belt of Shimla, where hailstorms in summer cause severe damage to the fruit every year.
- An anti-hail gun is a machine that generates shock waves to **disrupt the growth of hailstones in clouds**. It comprises a tall, fixed structure somewhat resembling an inverted tower, several meters high, with a long and narrow cone opening towards the sky. The gun is “fired” by feeding an explosive mixture of acetylene gas and air into its lower chamber, which releases a shock wave (waves that travel faster than the speed of sound, such as those produced by supersonic aircraft). **These shock waves supposedly stop water droplets in clouds from turning into hailstones, so that they fall simply as raindrops. Hence option (a) is the correct answer.**
- It is this hail formation process that the shock waves from anti-hail guns try to disrupt in a radius of 500 meters, so that the water droplets fall down before they can be lifted by the updrafts. The machine is repeatedly fired every few seconds during an approaching thunderstorm.

Q 43.B

- The twelfth century witnessed the emergence of a new movement in Karnataka, led by a Brahmana named Basavanna (1106-68) who was a minister in the court of a Kalachuri ruler. **His followers were known as Virashaivas (heroes of Shiva) or Lingayats (wearers of the linga).**
- Lingayats continue to be an important community in the region to date. They worship Shiva in his manifestation as a linga, and men usually wear a small linga in a silver case on a loop strung over the left shoulder. Those who are revered include the jangama or wandering monks. **Hence statements 1 is correct.**
- **Lingayats believe that on death the devotee will be united with Shiva and will not return to this world.** Therefore they do not practise funerary rites such as cremation, prescribed in the Dharmashastras. Instead, they ceremonially bury their dead. **Hence statements 2 and 3 is correct.**
- The Lingayats challenged the idea of caste and the “pollution” attributed to certain groups by Brahmanas.

Q 44.D

- The age of the **Shakas, Kushans, Satavahanas (200 B.C.- A.D. 300)** and the first Tamil states was the most flourishing period in the history of crafts and commerce in ancient India.
- The **Digha Nikaya** which belongs to pre-Mauryan times, mentions nearly 2 dozen occupations, but the **Mahavastu**, which belongs to this period, catalogues 36 kinds of workers living in the town of Rajgir.
- Cloth-making, silk-weaving and the making of arms and luxury articles also made progress.
 - **Mathura was a great centre for the manufacture of a special type of cloth which was called shataka. Hence statement 1 is correct.**
 - Dyeing was a thriving craft in south Indian towns.
 - A **brick-built dyeing** vat has been unearthed from Uraiyur in Tamilnadu and Arikamedu.
- Shell industry was in a very thriving state.
- Numerous beads and bangles made of shell were found.
- **Coin minting was an important craft, and the period is noted for numerous types of coins made of gold, silver, copper, bronze, lead and potin.**
 - **The craftsmen also made fake Roman coins. Hence statement 2 is correct.**

- Various coin moulds belonging to the period have been found both in north India and in the Deccan.
- **The urban handicrafts were supplemented by the manufacture of beautiful pieces of terracotta, which were found in profuse quantities.**
 - They have been found in **almost all Kushan and Satavahana sites**, but special mention may be made of Yelleshwaram in Nalgonda district, where we find the largest number of terracottas and the moulds in which they were manufactured. **Hence statement 3 is correct.**
- Artisans were organised into **guilds** which were called **shrenis**.

Q 45.A

- **Chauth (from Sanskrit meaning one-fourth) was a tax or tribute imposed, from the early eighteenth century, by the Maratha Empire in India. It was nominally levied at 25% on revenue or produce, hence the name. Hence statement 1 is correct.**
- The right to assess and collect this tax was asserted first by Shivaji in the later seventeenth century, on spurious grounds that his family was hereditary tax collectors in Maharashtra. **The sardeshmukhi was an additional 10% levy on top of the chauth on those lands which the Marathas claimed hereditary rights. Hence statement 2 is correct.**
- Chauth and sardeshmukhi were the taxes collected not in the Maratha kingdom but in the neighboring territories of the Mughal Empire or Deccan sultanates. **Hence statement 3 is not correct.**

Q 46.D

- Jainism recognized the existence of the gods but placed them lower than Jina. Jina, in Jainism, means a great teacher who has attained liberation from karma. **Hence statement 1 is correct.**
- It did not condemn the varna system, as Buddhism did. According to Mahavira, a person is born in a high or in lower varna in consequence of the sins or the virtues acquired by him in the previous birth, Mahavira looks for human values even in a chandala. In his opinion through pure and meritorious life members of the lower casts can attain liberation. Jainism mainly aims at the attainment of freedom from worldly bonds. It is not necessary to use any ritual for acquiring such liberation. It can be attained through full knowledge and action. Full knowledge, action, and liberation are considered to be the three gems or ratnas of Jainism. **Hence statement 2 is correct.**

Q 47.B

- Folk music is music that is played or sung by ordinary people (not professional musicians). It is traditional music that people generally learn by listening to other people playing it and then copying them.
- Indian folk music is diverse because of India's vast cultural diversity. It is sung in various languages and dialects throughout the length and breadth of this vast nation and exported to different parts of the world owing to migration. Some of the prominent folk music are listed below.
- **Chhakri, Kashmir**
 - Chhakri is a group song which is the most popular form of Kashmir's folk music.
 - It is sung to the accompaniment of the noot (earthen pot) rababs, sarangi and tumbaknari (an earthen pot with high neck). **Hence, pair 1 is not correctly matched.**
- **Burrakatha, Andhra Pradesh**
 - Burrakatha is a highly dramatic form of ballad.
 - A bottle shaped drum (tambura) is played by the main performer while reciting a story.
 - The ballad singers, like stage actor, wear make up and a highly stylised costume. **Hence, pair 2 is correctly matched.**
- **Daskathia, Odisha**
 - Daskathia is a form of ballad singing prevalent in Odisha.
 - Daskathia is a name derived from a unique musical instrument called "Kathi" or "Ram Tali", wooden clappers used during the presentation.
 - The performance is a form of worship and offering on behalf of the "Das", the devotee. **Hence, pair 3 is not correctly matched.**

Q 48.B

- The traditional marionettes or string puppets of Rajasthan are known as Kathputli puppets.
- Carved from a single piece of wood, these puppets are like large dolls that are colourfully dressed. Their costumes and headgears are designed in the medieval Rajasthani style of dress, which is prevalent even today.
- The Kathputli play is accompanied by a highly dramatized version of regional music.
- **Oval faces, large eyes, arched eyebrows, and large lips are some of the distinct facial features of these string puppets. Hence, statement 1 is not correct.**

- **These puppets wear long trailing skirts and do not have legs. Hence, statement 2 is correct.**
- Puppeteers manipulate puppets with two to five strings which are normally tied to their fingers.
- In Kathputli's play, the puppeteer narrates the stories through soulful ballads. Kathputli features puppet plays based on popular legends being performed by skillful puppeteers.
- Music or ballads form an integral part of Kathputli as the entire performance is based on the ballad.
- Sometimes, the puppeteer accompanies the ballads with various sound effects to give the show a greater impact. Kathputli features historic anecdotes, tales of love, and includes a lot of screeching and high-pitched sounds as the puppets twist and bend to the tunes of the puppeteer at the time of performance.

Q 49.B

- Recently, a record number of **fake online pharmacies have been shut down under Operation Pangea XIV targeting the sale of counterfeit and illicit medicines and medical products.** The operation **Pangea XIV coordinated by INTERPOL** involved police, customs, and health regulatory authorities from 92 countries. It resulted in 113,020 web links including websites and online marketplaces being closed down or removed, the highest number since the first Operation Pangea in 2008. **Hence option (b) is the correct answer.**
- Indian agencies including the CBI also participated in the operation. It showed that criminals were continuing to cash in on the huge demand for personal protection and hygiene products due to the COVID-19 pandemic. More than half of all the medical devices seized during the operation from May 18 to 25 were fake and unauthorized COVID-19 test kits.

Q 50.B

- Abdur Razzaq, an ambassador sent by the ruler of Persia to Calicut (present-day Kozhikode) in the fifteenth century and **mentioned seven lines of forts. These encircled not only the city but also its agricultural hinterland and forests. The outermost wall linked the hills surrounding the city. Hence statement 1 is correct.**
- The **massive masonry construction was slightly tapered. No mortar or cementing agent was employed anywhere in the construction. The stone blocks were wedge-shaped,** which held them in place, and the inner portion of the walls was of earth packed with rubble. Square or rectangular bastions projected outwards. **Hence statement 2 is correct.**
- **Due to the surrounding areas being arid, elaborate arrangements had to be made to store rainwater and conduct it to the city. The most important such tank was built in the early years of the fifteenth century and is now called the Kamalapuram tank.**
 - One of the most prominent waterworks to be seen among the ruins is the Hiriya canal. This canal drew water from a dam across the Tungabhadra and irrigated the cultivated valley. **Hence statement 3 is correct.**

Q 51.C

- The Treaty on Open Skies was set up after the Cold War to build confidence between Russia and NATO members by allowing signatory states to conduct unarmed aerial surveillance missions over each other's territory. The information gathered during surveillance, such as on troop movements, military exercises, and missile deployments, has to be shared with all member States.
- NATO (North Atlantic Treaty Organization) is an international alliance that consists of 30 member states from North America and Europe. It was established at the signing of the North Atlantic Treaty on 4 April 1949. Canada is the founding member of NATO and Germany became a member of the Alliance in 1955.
- Recently, **Russian President Vladimir Putin signed into law the country's departure from the Open Skies treaty, following in the footsteps of the former and current US presidential administrations who withdrew from the treaty in November 2020 itself. Hence both the USA and Russia have left the Treaty on Open Skies now.**
- **India is not a signatory to the Treaty on Open Skies.**
- The failure of the Open Skies Treaty follows the demise of another significant arms control accord, the Intermediate-Range Nuclear Forces (INF) Treaty, after both the US and Russia left it in 2019. This treaty aimed at eliminating their stocks of intermediate-range and shorter-range (or "medium-range") land-based missiles which could carry nuclear warheads.
- **Hence option (c) is the correct answer**

Q 52.B

- The old stone age or the Palaeolithic culture of India developed in the Pleistocene period of the Ice Age. The Pleistocene is the geological epoch that lasted from about 2,580,000 to 11,700 years ago, spanning the world's most recent period of repeated glaciations. **Hence, statement 1 is correct.**

- People from the Paleolithic period were hunters and food gatherers. The Puranas speak of these people who lived on roots and fruits, some of these people have been living in the hills and caves till modern times. Domestication of animals only started in the Mesolithic period. The Mesolithic people lived on hunting, fishing, and food gathering and at a later stage they also domesticated animals.
- The Middle Palaeolithic industries were mainly based upon flakes. These flakes were found in different parts of India and show regional variations. The principal tools were varieties of blades, points, borers, and scrapers made of flakes. The microlithic industry developed during the Mesolithic phase. **Hence, statement 2 is not correct.**
- The Upper Paleolithic phase was less humid. It coincided with the last phase of the ice age when the climate became comparatively warm. The Paleolithic sites are found in hilly slopes and river valleys of the country and are absent in the alluvial plains of the Indus and the Ganga. **Hence, statement 3 is correct.**

Q 53.B

- Translations of Sanskrit texts such as the Mahabharata and the Ramayana into Persian were commissioned by the Mughal emperors. **The Mahabharata was translated as the Razmnama (Book of Wars).**
- Akbar commissioned translation and illustration of revered Sanskrit texts into Persian. The Persian translation and illustrated version of the Hindu epic Mahabharata did this period came to be known as RazmNama. This was completed in 1589 under the supervision of master artist Daswant. This manuscript was scribed in ornate calligraphy and contained 169 paintings. **Hence statement 1 is correct.**
- **All books in Mughal India were manuscripts, that is, they were handwritten.** The centre of manuscript production was the imperial kitabkhana.
 - **Although kitabkhana can be translated as library, it was a scriptorium, that is, a place where the emperor's collection of manuscripts was kept and new manuscripts were produced. Hence statements 2 and 3 are correct.**

Q 54.B

- **The art of bronze-casting was practised on a wide scale by the Harappans.** Their bronze statues were made using the 'lost wax' technique in which:
 - the wax figures were first covered with a coating of clay and allowed to dry;
 - then the wax was heated and the molten wax was drained out through a tiny hole made in the clay cover.
 - The hollow mould thus created was filled with molten metal which took the original shape of the object.
 - Once the metal cooled, the clay cover was completely removed.
- **Hence option (b) is the correct answer.**

Q 55.B

- Recently, **Denmark's parliament has given the go-ahead to build Lynetteholmen, a giant artificial island** that will protect Copenhagen's harbour waters from rising sea levels at the same time as providing homes for 35,000 people. **Hence option (b) is the correct answer.**
- It is being claimed that Lynetteholmen is an ambitious vision for a new and sustainable district, which will also form part of the necessary climate protection for the city. of Copenhagen. The artificial island will house at least 35,000 people who will be connected to the downtown by a harbor tunnel and a subway line.
- The artificial island will be built north of the trendy Refshale Island which is a former industrial area. The plan has been facing backlash for not having investigated enough to go through the environmental consequences that will take place because of its construction, among other issues.

Q 56.C

- Nearly 1500 Harappan sites are known so far in the Indian subcontinent. Most of them are late-Harappan, post-urban sites.
- These including Bhagwanpura, generally lie on the banks of the Hakra-Ghaggar channel. They belong to early, mature and late phases of the Harappan culture. But the number of sites belonging to the mature phase is limited, and of them only a few can be regarded as cities.
- Of these, the two most important cities were Harappa in Punjab and Mohenjodaro in Sindh (both in Pakistan). A third city lay at **Chanhudaro about 130 km south of Mohenjodaro in Sindh and fourth in Lothal in Gujarat** at the head of the Gulf of Cambay. A fifth city lay at Kalibangan in Rajasthan. Sixth called Banawali is situated in Hissar, Haryana.

- Mature phase is also found in coastal cities of **Sutkagendor (Makran coast near Gwadar, Pakistan)** and **Surkotada (Kutch, Gujarat)**, each one of which is marked by a citadel.
- The later Harappan phase is found in **Rangpur and Rojdi in the Kathiawar peninsula in Gujarat**. In addition to these, Dholavira lying in Kutch, Gujarat shows Harappan fortification and the three phases of the Harappan culture. These phase also appear in Rakhigarhi (Haryana).
- **Hence, option (c) is the correct answer.**



Q 57.B

- The shadow puppet art form that is being described in the passage is Tholu bommalata. It literally means the dance of the leather puppets. **Tholu bommalata is the shadow puppetry tradition of Andhra Pradesh, Telangana.**
- **Tholu bommalata puppets are the most peculiar for their large sizes.** The heights of these puppets range from 120 to 180 centimetres and at times almost two meters as well.
- **These puppets have joints along the arms, legs, waist, head, and neck and the different segments are held together with strings; a central stick supporting the torso allows the puppeteer to firmly hold the puppet while performing. The head is generally supported by a separate stick that allows rapid movements and twists.**
- **Puppets are coloured on both sides. Hence, these puppets throw coloured shadows on the screen.**
- Music plays a crucial role in Tholu Bommalata performances—the scenic sounds are obtained through the use of wood planks and anklets of bells. The performances are accompanied by live music and songs.
- The musical instruments used are tablas, mridangam, muddala (percussions), harmonium, cymbals, shanka (conch), and mukhaveena (wind instrument).
- Music in Tholu Bommalata helps in rendering the dramatization of the scenes. Entrances, dialogues, fights: every part of the performance is enlivened by appropriate music and songs and the type of music is a mix of classical and folk traditions
- **The themes of the puppet plays are drawn from the Ramayana, Mahabharata, and Puranas.**
- **Hence, option (b) is the correct answer.**

Q 58.D

- By the beginning of the Christian era, six philosophical schools or systems have emerged in Hinduism. Though differing vary widely, they were all looked on as orthodox, since they all accepted the inspiration of the Vedas and the claim of the brahmins to ritual supremacy. They were linked together in pairs, as complementing one another or otherwise showing close relations. The six orthodox schools are:
 - Sankhya
 - Yoga
 - Nyaya
 - Vaisheshika
 - Mimamsa
 - Vedanta or Uttara-Mimamsa.
- About the time of the rise of Buddhism, there was a sect of religious mendicants, the **Ajivikas** (heterodox school), who held unorthodox views. In the strict sense, this name is applied to the followers of one **Makkhali Gosala**, but in a wide sense, it is also applied to those who taught many different shades of heretical teachings.
- **Hence option (d) is the correct answer.**

Q 59.A

- **Statement 1 is correct: The structure of the society was undergoing a change in the Gupta period and the caste system became rigid as the supremacy of the Brahmanas was increasing and they occupied the top ladder of the society.** They were getting large-scale land grants not only from the rulers but from other people also. The land was given along with administrative rights and tax exemptions. Thus, a new class of brahmana landlords was created.
- **Statement 2 is correct: The position of Shudras improved somewhat during the Gupta period. They were allowed to listen to religious texts like Ramayana and Mahabharata and the Puranas.** They could also perform some domestic rituals that were earlier prohibited for them. In the seventh century, Hsuan Tsang calls Shudras as agriculturists and the vaishyas as traders. **Like shudras, women were allowed to listen to religious texts.**
- **Statement 3 is not correct: The position of women had also become miserable during the Gupta period. The subjection of women to men was thoroughly regularized. But it was insisted that they should be protected and generously treated by men. Women of higher-order did not have access to independent sources of livelihood in Gupta times.** Women of lower varna were free to earn their livelihood gave them considerable freedom which was denied to women of upper varnas.

Q 60.D

- During the rule of Ashoka, arrangements were made for disposing of affairs of the people and to receive regular reports about them.
- **Pativedakas** were appointed to report about the affairs of the people at all times to the Ashoka.
- Epigraphists have translated the term **Pativedaka as a reporter.**
- **Hence option (d) is the correct answer.**

Q 61.C

- **Sravana Belagola is a prominent Jain site in the state of Karnataka which has a rich heritage of Jain shrines.**
 - It houses the famous **statue of Gomateshwara.**
 - It is a **granite statue of lord Bahubali** (the son of lord Rishabhanatha who was the first of the 24 Jain Tirthankaras) which stands eighteen metres or 57 feet high, is the **world's tallest monolithic free-standing structure.**
 - It is located on **Vindhyagiri Hill.**
 - **It was commissioned by Chamundaraya, the general-in-Chief and Prime Minister of the Ganga Kings of Mysore.**
 - The base of the statue has an inscription in Prakrit, dating from 981 AD.
 - The inscription praises the king who funded the effort and his general, Chavundaraya, who erected the statue for his mother.
 - Every twelve years, thousands of devotees congregate here to perform the Mahamastakabhisheka, a spectacular ceremony in which the statue is anointed with Water, Turmeric, Rice flour, Sugar cane juice, Sandalwood paste, saffron, and gold and silver flowers. Chandragupta Maurya is said to have died here in 298 BCE after he became a Jain monk and assumed an ascetic lifestyle.
 - **Hence, option (c) is the correct answer.**

Q 62.A

- **Phad Paintings:**
 - They are **long, horizontal, cloth scrolls painted to honour folk deities of pastoral communities inhabiting the region around Bhilwara in Rajasthan.**
 - For such communities, safeguarding their livestock is the foremost concern. Such concerns purposely reflect in their myths, legends and worship patterns.
 - Among their gods are defied cattle heroes, who are brave men who sacrificed their lives while protecting the community's cattle from robbers.
 - Designated by the broad term bhomia, these heroes are honoured, worshiped and remembered for their acts of martyrdom.
 - > Bhomias, such as Gogaji, Jejaji, Dev Narayan, Ramdevji and Pabhuji, have inspired widespread cult following among the communities of Rabaris, Gujjars, Meghwals, Regars and others.
 - Illustrating the valorous tales of these bhomias, the phads, are carried by bhopas, the itinerant bards, who travel the territory, displaying them while narrating tales and singing devotional songs **associated with these hero-deities in night-long storytelling performances.** A lamp is held against the phad to illuminate images that are being spoken about.
 - The bhopa (singing priests) and his companion perform to the accompaniment of musical instruments, such as ravanahattha and veena, and employ the Khyal style of singing.
 - Through the phads and phad banchan, the community remembers the hero as a martyr and keeps his story alive. Phads, however, are not painted by the bhopas.
 - **They have traditionally been painted by a caste called 'Joshis' who have been painters in the courts of the kings of Rajasthan. These painters specialised in court patronised miniature paintings. Hence, the association of skilled practitioners, bard musicians and court artists place phads higher than other similar cultural traditions. Hence option (a) is the correct answer.**
- **Puri patas** or paintings evidently acquire their claim to recognition from the temple city of Puri in Odisha. It largely comprises the pata (initially, done on palm leaf and cloth but now done on paper as well). A range of themes are painted, such as the daily and festival veshas (attires) of Jagannath, Balabhadra and Subhadra.
- **Pithoro painting** is done by Rathva Bhils of the Panchmahal region in Gujarat and Jhabua in the neighbouring State of Madhya Pradesh, these paintings are done on the walls of houses to mark special or thanksgiving occasions. These are large wall paintings, representing rows of numerous and magnificently coloured deities depicted as horse riders.
- **Basohli painting** is school of Pahari miniature painting that flourished in the Indian hill states during the late 17th and the 18th centuries, known for its bold vitality of colour and line. The colours are always brilliant, with ochre yellow, brown, and green grounds predominating. A distinctive technique is the depiction of jewellery by thick, raised drops of white paint, with particles of green beetles' wings used to represent emeralds.

Q 63.D

- The establishment and expansion of the Delhi Sultanate led to the evolution of a powerful and efficient administrative system. The Sultan was assisted by a number of departments and officials in his administration. The post of Naib was the most powerful one. The Naib practically enjoyed all the powers of the Sultan and exercised general control over all the departments. Next to him was the Wazir who was heading the finance department called Diwani Wizarat.
- The **military department was called diwan-i-arz and was headed by Arz-i-mamalik.** He was responsible for recruiting, equipping and paying the army. But the commander-in-chief of the army was Sultan himself. **Hence statement 1 is not correct.**
- **Diwan-i-insha was the department that dealt with all state correspondence-formal and confidential-between ruler and sovereign of other states, with subordinate officials, etc. Hence statement 2 is correct.**
- **Barids were intelligence agents who reported to the rulers about the occurrences in the different parts of the empire. Hence statement 3 is correct.**

Q 64.B

- The theatre art form that is being described in the above passage is Tamaasha. It is a traditional Marathi folk theatre art form of Maharashtra.
 - **It has evolved from the folk forms such as Gondhal, Jagran and Kirtan.**
 - **Unlike other theatre forms, in Tamaasha the female actress is the chief exponent of dance movements in the play. She is known as Murki.**

- **Classical music, footwork at lightning speed, and vivid gestures make it possible to portray all the emotions through dance.**
- It is a women-dominated art form. Women are dressed in traditional saree in bright red or green worn in Maharashtrian style called 'Kachi', hair tied like a juda with flowers covering it, wearing lots of bangles and tying ghoongaroos (heavy anklets).
- History reveals that this art form perhaps existed or came to be known during reign of Adil Shahi and this art form was also known as Tamashagir.
- **Hence option (b) is the correct answer.**

Q 65.C

- Greek and Roman accounts of the first and second century A.D. mention many Indian ports and enumerate items of trade between India and the Roman empire.
- **The *Periplus of the Erythrean Sea* and Ptolemy's *Geography* both written in Greek, provide valuable data for the study of Indian geography and commerce.**
- **Pliny's *Naturalis Historia*, which belongs to 1st century A.D., written in Latin tells us about trade between India and Italy.**
- **Hence both the statements are correct.**

Q 66.B

- **Kulhadar Painting**
 - This **miniature painting originated in 16th Century A.D.** and is **completely indigenous** i.e. it has no tinge of either Persian or Mughal style of painting.
 - The style of these miniatures is marked by the use of brilliant contrasting colours, vigorous and angular drawing, transparent drapery and the appearance of conical caps 'Kulha' on which turbans are worn by the male figures.
 - This group of painting includes **illustrations of the 'Chaurapanchasika'** – 'Fifty Verses of the Thief by Bilhan, the Gita Govinda, the Bhagavata Purana and Ragamala.
 - An example of the Chaurapanchasika miniature shows Champavati standing near a lotus pond.
- **Hence option (b) is the correct answer.**

Q 67.C

- **Indian Institute of Technology, Ropar (IIT Ropar) in Punjab has developed a first-of-its-kind IoT device – AmbiTag** that records real-time ambient temperature during the transportation of perishable products, vaccines, and even body organs and blood. That recorded temperature further helps to know whether that particular item transported from anywhere in the world is still usable or perished because of temperature variation. This information is particularly critical for vaccines including the Covid-19 vaccine, organs, and blood transportation.
- Shaped like a USB device, AmbiTag continuously records the temperature of its immediate surroundings from -40 to +80 degrees in any time zone for a full 90 days on a single charge. Most of the similar devices available in the international market record data only for a duration of 30- 60 days.
- The device has been developed under Technology Innovation Hub – AWaDH (Agriculture and Water Technology Development Hub) and its Startup ScratchNest. AWaDH is a Govt of India project. Besides perishable items including vegetables, meat, and dairy products it can also monitor the temperature of animal semen during transit. **AmbiTAG is India's first indigenous temperature data logger for cold chain management.**
- **Hence option (c) is the correct answer.**

Q 68.D

- By the twelfth century A.D., Buddhism practically extinct in India. It continued to exist in a changed form in Bengal and Bihar till the twelfth century, but after that, this religion almost completely vanished from the country. what were its causes? We find that in the beginning every religion is inspired by the spirit of reform, but eventually, it succumbs to rituals and ceremonies it originally denounced. Buddhism underwent a similar metamorphosis. It became a victim to the evil of Brahmanism against which it had fought in the beginning. **Hence statement 1 is correct.**
- To meet the Buddhist challenge the brahmins reformed their religion. They stressed the need for preserving the cattle wealth and assured women and Sudras of admission to heaven Buddhism, on the other hand, changed for the worse. Gradually the Buddhist monks were cut off from the mainstream of people's life; they **gave up Pali, the language of the people**, and took to Sanskrit, the language of intellectuals. **Hence statement 2 is correct.**

- From the first century A.D., they practiced idol worshipped on a large scale received numerous offerings from devotees. The rich offerings supplemented by generous royal grants to the Buddhist monasteries made the life of monks easy. Some of the monasteries such as Nalanda collected revenue from as many as 200 villages. By the seventh century A.D., the Buddhist monasteries had come to be dominated by ease-loving people and became centers of corrupt practices which Gautama Buddha had strictly prohibited. The new form of Buddhism was known as Vajrayana. The enormous wealth of the monasteries with women living in them led to further degeneration. **Hence statement 3 is correct.**

Q 69.A

- Archaeologists have discovered thousands of seals, mostly made of steatite, and occasionally of agate, chert, copper, faience, and terracotta, with beautiful figures of animals, such as unicorn bull, rhinoceros, tiger, elephant, bison, goat, buffalo, etc. Some seals have also been found in ivory. **Hence, statements 1 and 2 are correct.**
- The realistic rendering of these animals in various moods is remarkable. The purpose of producing seals was mainly commercial.
- It appears that the seals were also used as amulets, carried on the persons of their owners, perhaps as modern-day identity cards.
- The standard Harappan seal was a square plaque 2×2 square inches and rectangular made from steatite.
- Every seal is engraved in a pictographic script which is yet to be deciphered. **Hence, statement 3 is correct.**

Q 70.B

- Institutionally, the Sufis began to organize communities around the hospice or khanqah(Persian) controlled by a teaching master known as shaikh (in Arabic), pir, or murshid (in Persian). **Hence pair 3 is correctly matched.**
- He enrolled disciples (murids) and appointed a successor (khalifa). He established rules for spiritual conduct and interaction between inmates as well as between laypersons and the master. **Hence pair 2 is correctly matched.**
- When the shaikh died, his tomb shrine (dargah, a Persian term meaning court) became the center of devotion for his followers. This encouraged the practice of pilgrimage or ziyarat to his grave, particularly on his death anniversary or urs (marriage, signifying the union of his soul with God). **Hence pair 1 is correctly matched.**

Q 71.B

- As warfare during these times depended upon effective cavalry, the import of horses from Arabia and Central Asia was very important for rival kingdoms. This trade was initially controlled by Arab traders. **Local communities of merchants known as “Kudirai Chettis” or horse merchants also participated in these exchanges. Hence pair 1 is correctly matched.**
- The amara-nayakas were military commanders who were given territories to govern by the raya. They collected taxes and other dues from peasants, craftspersons, and traders in the area. They retained part of the revenue for personal use and for maintaining a stipulated contingent of horses and elephants. These contingents provided the Vijayanagara kings with an effective fighting force with which they brought the entire southern peninsula under their control. **Hence pair 2 is correctly matched.**
- The rulers of Vijayanagara called themselves ‘rayas’. **Hence pair 3 is correctly matched.**

Q 72.A

- **Kornish was a form of ceremonial salutation in which the courtier placed the palm of his right hand against his forehead and bent his head.** It suggested that the subject placed his head – the seat of the senses and the mind – into the hand of humility, presenting it to the royal assembly.
- **Mughal emperors frequently gave awards such as robe of honour (khilat), a garment once worn by the emperor and imbued with his benediction. One gift, the sarapa (“head to foot”), consisted of a tunic, a turban and a sash (patka).** Jewelled ornaments like the lotus blossom set with jewels (padma murassa) were given on special occasions.
- **Building plan of architects were called ‘Mimars’** and sometimes viewed by the emperor himself.
- **Hence option (a) is the correct answer.**

Q 73.B

- Established in 1951, the International Organization for Migration (IOM) is the leading intergovernmental organization in the field of migration and is committed to the principle that humane and orderly migration benefits migrants and society. IOM is part of the United Nations system, as a related organization. The Organization is guided by the principles enshrined in the Charter of the United Nations, including upholding human rights for all. Respect for the rights, dignity, and well-being of migrants remains paramount.
- The **International Organization for Migration's (IOM) flagship publication " World Migration Report"** has launched a dynamic new webpage that connects fact-based narratives on migration with interactive data visualizations on some of the latest global migration data and information. It is the first microsite of its kind since the World Migration Report (WMR) series began more than two decades ago. **Hence option (b) is the correct answer**

Q 74.D

- In the field of mathematics, Indians made distinct contributions:
 - The notational/numeral system** - The Indian notational system was adopted by the Arabs who spread it in the western world. The Indian numerals were called Arabic in English, but the Arabs themselves called their numerals as *hindsa*. We cannot establish that Indians were the first ones to use humeral system.
 - The **decimal system** - The **Indians were the first to use the decimal system**. The earliest epigraphic evidence of the use of decimal system could be traced to the beginning of 5th C A.D. Aryabhatta was acquainted with it
 - The great mathematician and astronomer of the Gupta period, Aryabhatta, is credited with: discovery of earth's rotation on its axis; **discovery of the cause of eclipses**; approximation for the value of pie (π).
- Hence option (d) is the correct answer.**

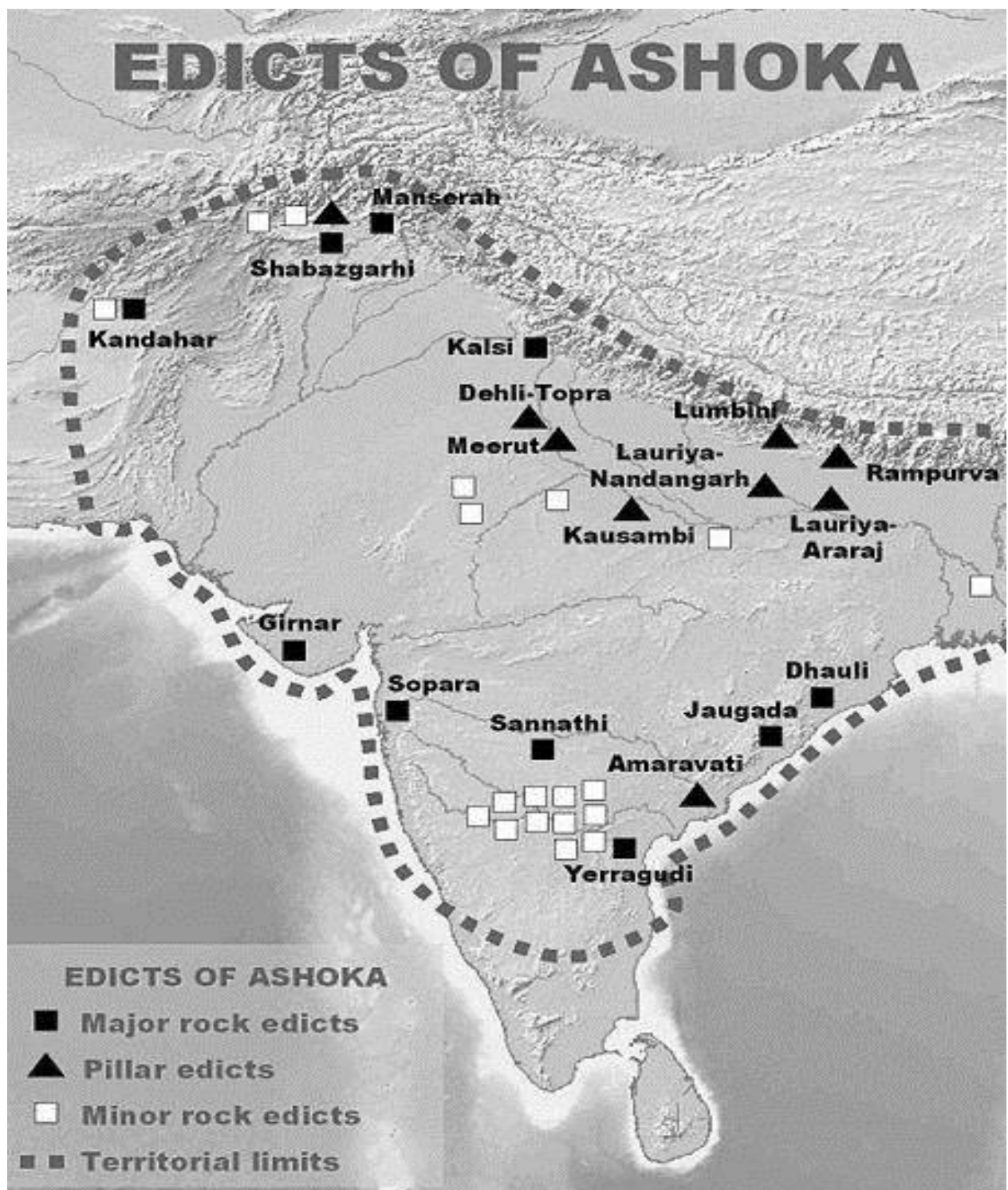
Q 75.D

All three terms are related to land revenue system during the Mughal empire.

- In 1580, Akbar instituted a new land revenue system called **dahsala**. Under this system, the average produce of different crops as well as average prices prevailing over the last ten (dah) years were calculated. One-third of the average share was state's share.
- Akbar also followed the old **batai or ghalla-bakshi** system. In this system, the produce was divided between peasants and the state in a fixed proportion. The crop was divided after it has been thrashed, or when it has been cut and tied in stacks, or while it was standing in the field.
- A third system used under Akbar's reign was **nasaq**. It meant a rough calculation of the amount payable by the peasant on the basis of what he has been paying in the past.
- Dagh system, by Allauddin Khilji**, was used for branding of horse with imperial marks.

Q 76.B

- King Asoka, the third ruler of the Indian Mauryan dynasty, has come to be regarded as one of the most exemplary rulers in Indian history.
- In 1837, **James Prinsep** succeeded in deciphering an ancient inscription on a large stone pillar in **Delhi** belonging to Ashokan rule. Several other pillars and rock edicts (major and minor) with similar inscriptions had been found scattered in more than thirty places throughout **India, Nepal, Pakistan and Afghanistan**.
- There are about **14 major rock edicts** providing information about Ashokan policy and his dhamma. These 14 major Rock edicts are found in ancient sites of **Kandahar** (Kandhar), **Manshera**, Shahbazgarhi, **Kalsi**, Girnar, Sopara, Sannati, Jaugada, Shishupalgarh, etc.
- The Meerut pillar (not rock edict) is now situated in Delhi. It was shifted from Meerut to Delhi by Feruz Shah and erected at a location in the northern ridge of Delhi.
- Hence option (b) is the correct answer.**



Q 77.B

- **Western Ganga Dynasty:**

- The Ganga dynasty came into being in about **340 A.D.** and they continued to rule the southern part of Karnataka, **till about 1025 A.D.** The Gangas were another important **contemporary of the Pallavas.**
- They set up their **rule in southern Karnataka** around the fourth century. Their kingdom lay between that of the Pallavas in the east and of the Kadambas in the west. They are **called Western Gangas or Gangas of Mysore** in order to **demarcate them from the Eastern Gangas who ruled in the Kalinga** from the fifth century onwards. For most of the time, the Western Gangas were the feudatories of the Pallavas. **Hence statement 2 is correct.**
- Their **earliest capital** was located at **Kolar**, which may have helped the rise of this dynasty because of its gold mines.
- The **Western Gangas made land grants mostly to the Jainas**; the Kadambas also made grants to the Jainas, but they favored the Brahmanas more. Pallavas also granted numerous villages free of taxes largely to the Brahmanas. **Hence statement 3 is correct.**

○ **NOTE :**

- > **Satavahanas:** After the fall of the Mauryan Empire, the history of the Andhras, as a continuous account of political and cultural events, commences with the rise of the Satavahanas as a political power. **According to Matsya Purana**, there were 29 rulers of this dynasty. They ruled over the Andhradesa including Deccan **for about 400 years from the 2nd century B.C. to beyond the 2nd century A.D.** Satavahanas were also called **Salivahanas and Satakarnis**. In the 3rd century B.C., **Simukha, the founder of the Satavahana dynasty, unified the various Andhra principalities into one kingdom** and became its ruler (271 B.C. – 248 B.C.). Dharanikota near Amaravati in Guntur district was the first capital of Simukha, but later he shifted his capital to Pratisthana (Paithan in Aurangabad district). **Thus the Satavahanas were not the contemporaries of the Western Gangas. Hence statement 1 is not correct.**

Q 78.D

- Kings in the post-Mauryan period frequently tried to fill their coffers by demanding high taxes, and peasants particularly found such demands oppressive.
- **Escaping into the forest** remained an option, as reflected in the Jataka story. Meanwhile, other strategies aimed at increasing production to meet the growing demand for taxes also came to be adopted.
- One such strategy was the **shift to plough agriculture**, which spread in fertile alluvial river valleys such as those of the Ganga and the Kaveri from c. sixth century BCE. **Hence statement 1 is correct.**
- While the iron ploughshare led to a growth in agricultural productivity, its use was restricted to certain parts of the subcontinent – cultivators in areas that were semi-arid, such as **parts of Punjab and Rajasthan did not adopt it till the twentieth century.**
- Moreover, in some parts of the Ganga valley, the **production of paddy was dramatically increased by the introduction of transplantation. Hence statement 2 is correct.**
- Another strategy adopted to increase agricultural production was the use of irrigation, **through wells and tanks**, and less commonly, canals. **Hence statement 3 is correct.**

Q 79.B

- Guru Nanak (1469-1539) was born in a Hindu merchant family in a village called Nankana Sahib near the river Ravi in the predominantly Muslim Punjab.
- **The message of Guru Nanak is spelled out in his hymns and teachings. These suggest that he advocated a form of nirguna bhakti.** For Baba Guru Nanak, the Absolute or “rab” had no gender or form. He proposed a simple way to connect to the Divine by remembering and repeating the Divine Name, expressing his ideas through hymns called “shabad” in Punjabi. **Hence statement 1 is correct.**
- He firmly repudiated the external practices of the religions he saw around him. **He rejected sacrifices, ritual baths, image worship, austerities and the scriptures of both Hindus and Muslims. Hence statement 2 is correct.**
- Guru Nanak was a contemporary of rulers like **Bahlol Lodhi, Sikander Lodhi, Ibrahim Lodhi, Babur and Humayun – first three were Sultanate rulers and the latter two were Mughal emperors. Hence statement 3 is correct.**

Q 80.B

- The Gupta Empire existed from the mid-to-late 3rd century CE to 543 CE.
- The ruling dynasty of the empire was founded by the king Sri Gupta; the most notable rulers of the dynasty were Chandragupta I, Samudragupta, and Chandragupta II alias Vikramaditya.
- This period is considered the Golden Age of India by historians for the development of science, astronomy, architecture, literature etc.
- **Literature of Gupta Period:**
 - The literature was produced in prose, poetry, drama, and grammar.
 - **Kalidas** composed the finest works such as Meghaduta, Raghuvamsa, Kumarasambhava, Abhijnashakuntalam, Vikramorvasiyam, Malavikagnimitram, Ritusamhara.
 - > **Meghaduta** means a messenger of Clouds. It's a poem woven around a Yaksha, who is subject of Lord Kubera. **Hence, pair 1 is not correctly matched.**
 - > **Abhijnashakuntalam** is a Sanskrit play which depicts the story of Dushyanta, king of Hastinapur, and Shakuntala, daughter of the sage Vishwamitra and the apsara Menaka. **Hence, pair 2 is correctly matched.**
 - Mrichchakatika, written by Sudraka, is a play about the love of a Brahman with the beautiful daughter of a courtesan.

- Vishakhadatta had written two plays, namely Mudrarakshasa (it narrates the ascent of Chandragupta Maurya to throne) and Devichandraguptam.
- Dandin had written Kavyadarshana and Dasakumarcharita (The Tale of the Ten Princes).
- Uttararama-charita and Malati-Madhava were written by Bhavabhuti.
- Panchatantra was written by Vishnu Sharma. It has been translated into Persian, Arabic and many European languages. The popular work Hitopadesa is based on the Panchatantra.
- **Harshacharita is the biography of Harsha written by Banabhatta.**
- Bhāravi is best known for Kiratarjuniya, written around 550 CE. Kirat is Shiva who speaks to arjuna in form of a mountain dwelling hunter.
- The compilation of the **Amarakosha by Amarasimha** is memorable work of this period. He was one of the Navaratnas ("nine gems") at the court of Vikramaditya. It is a vocabulary of Sanskrit roots, in three books, and hence sometimes called Trikantha or the "Tripartite". It is also known as "Namalinganushasana". **Hence, pair 3 is correctly matched.**
- 'Prakritaprakasha' written by Vararuchi and 'Prakritalakshana' written by Chanda are the well-known grammar works on Prakrit and Pali language.

Q 81.B

- The term **Puranaruru** refers to one of the **anthologies of poems** of the Tamil Sangam literature.
 - Puranaruru contains 400 poems of varying lengths. It is composed of more than 150 poets.
 - Puranaruru is an important source of information on the political and social history of pre-historic Tamil Nadu as it is mainly concerned with life outside family - kings, wars, greatness, generosity, ethics, and philosophy.
 - It is traditionally called the **last of the Eight Anthologies** (Ettuthokai) in Sangam literature.
 - The Purananuru poems use **words, phrases, and metaphors** that suggest the ancient Tamil society interacted with other parts of the Indian subcontinent.
- **Hence option (b) is the correct answer.**

Q 82.A

- **El Salvador passed a new law recently** that would make the small Central American country the **world's first to deem bitcoin legal tender**, a move that analysts say risks putting its economy at the mercy of the digital currency's sharp swings. **Hence statement 2 is not correct.**
- The designation allows bitcoin, **the world's largest cryptocurrency by market value**, to be used to buy goods and pay taxes and bank loans. Businesses would be required to accept bitcoin for payment, with the bitcoin-dollar exchange rate set by the market. **Hence statement 1 is correct**
- Bitcoin (₿) is a decentralized digital currency, without a central bank or single administrator, that can be sent from user to user on the peer-to-peer bitcoin network without the need for intermediaries. Transactions are verified by network nodes through cryptography and recorded in a public distributed ledger called a blockchain.

Q 83.C

- **The Battle of Tarain (1191-1192)**
 - **The Hindu princes of north India formed a confederacy under the command of Prithviraj Chauhan defeated Ghori in the battle of Tarain near Delhi in 1191 A.D.**
 - The second battle of Tarain was a decisive battle. In the ensuing Second Battle of Tarain in 1192, Muhammad Ghori thoroughly routed the army of Prithviraj.
 - The first Muslim kingdom was thus firmly established in India at Ajmer and a new era in the history of India began. After his brilliant victory over Prithviraj at Tarain, Muhammad Ghori returned to Ghazni leaving behind his favorite general Qutbuddin Aibak to make further conquests in India.
 - **The Battle of Tarain and Chandawar contributed to the establishment of Turkish rule in India.**
 - **Hence, statements 1 and 2 are correct.**

Q 84.D

- The later phase of Mughal politics i.e. after the death of Aurangzeb in 1707 saw the rise of powerful nobles who played the role of 'King makers'. Wars of succession were fought even in the heydays of the Mughal Empire but then the royal princes were the principal contestants supported by powerful mansabdars.
- The **Sayyid Brothers, Abdullah Khan and Hussain Khan** became highly influential in the Mughal Court after Aurangzeb's death and **became king makers** during the anarchy following the death of emperor Aurangzeb in 1707. They created and dethroned Mughal Emperors at their will during the 1710s. **Hence options 1 and 2 are correct.**

- **Aurangzeb's son Bahadur Shah I defeated his brothers to capture the throne with the help of Sayyid Brothers and Chin Quilich Khan (Nizam-ul-Mulk), another influential administrator in the Mughal court.**
- Bahadur Shah I died in 1712, and his successor **Jahandar Shah was assassinated on the orders of the Sayyid Brothers.**
- In 1713, Jahandar's nephew **Farrukhsiyar (1713–1719) became the emperor with the Sayyid brothers' help.** His reign marked the ascendancy of the brothers, who monopolised state power and reduced the Emperor to a figurehead. The brothers conspired to send Nizam-ul-Mulk to Deccan, away from the Mughal Court, to reduce his influence. In 1719, the Brothers blinded, deposed and murdered Farrukhsiyar.
- The most important movement for the **spread of modern education and social reform among Muslims was started by Sir Syed Ahmad Khan (1817-1898).** He joined the services of the East India Company as a judicial officer and remained loyal to them during the revolt of 1857, whereas the British rulers regarded the Muslims as their 'real enemies and most dangerous rivals' and followed a policy of discrimination against them. In **1864, he founded the Translation Society** which was later renamed '*The Scientific Society*'. The society was located at Aligarh. It published Urdu translations of English books on science and other subjects, and an English-Urdu journal for spreading liberal ideas on social reforms. He advocated the removal of many social prejudices that kept the community backward. His greatest achievement was the establishment of the *Mohammedan Anglo Oriental College (Also known as Aligarh Muslim University) at Aligarh in 1875.* In course of time, this college became the most important educational institution of Indian Muslims. It provided for education in humanities and science throughout English medium and many of its staff members came from England. The college received support from leading Muslims throughout India and the British showed much interest, both officially and otherwise in its development. **Hence option 3 is not correct.**

Q 85.A

- **Ibn Battuta was born in Tangier into one of the most respectable and educated families known for their expertise in Islamic religious law or shari'a.** True to the tradition of his family, Ibn Battuta received literary and scholastic education when he was quite young.
- **Ibn Battuta's book of travels, called Rihla, written in Arabic,** provides extremely rich and interesting details about the social and cultural life in the subcontinent in the fourteenth century.
- Traveling overland through Central Asia, Ibn Battuta reached Sind in 1333. **He had heard about Muhammad bin Tughlaq, the Sultan of Delhi,** and lured by his reputation as a generous patron of arts and letters, set off for Delhi, passing through Multan and Uch. **The Sultan was impressed by his scholarship, and appointed him the qazi or judge of Delhi.**
- He traveled extensively in China, going as far as Beijing, but did not stay for long, deciding to return home in 1347. His account is often compared with that of Marco Polo, who visited China (and also India). **Hence option (a) is the correct answer.**

Q 86.D

- Music is an important component of the performing arts like dance and drama, and of rituals. Each community has its own style of music and tradition of songs.
- There are essentially two ways to make music: with the **human voice** and with an **instrument**.
- The musical instruments are classified on the basis of the **scientific principle used to create the sound** they make.
- Percussion instruments are **struck to produce sound**. Often these are used to produce the taal or beat and do not produce all the musical notes. Some of the famous percussion instruments are:
 - **Chikka** is an instrument unique to Punjab. Similar to the cane snake available in many parts of the country, the chikka is **made up of 14 wooden sticks** joint together as a lattice.
 - **Chimta** has **small metal discs** loosely attached to it which strike against each other when the arms of the chimta are struck.
 - **Mashak** is made of **leather bag** and is usually played by the Dholis of Rajasthan as an accompaniment to popular folk melodies.
 - **Kirla** is a **stick with a carved squirrel or fish** at the top. A cord fixed to the top jerks the galad up with a sharp click, while bells fixed to the bottom of the kirla jingle.
 - **Khadtaal** is made of two **similar pieces of wood with brass fittings**. One piece of it has space for a thumb, the other for four fingers, these are struck together to produce a simple percussive beat.
 - **Manjeeras** are a pair of flat metallic disks that are beaten together to produce a rhythmic metallic sound. **Hence options 1, 2, and 3 are correct.**
- Been and veena are reed wind instruments. Been is made out of a kaddu (gourd), that has been dried and hollowed out. **Hence options 4 and 5 are not correct**

Q 87.B

- **The reign of Chandragupta II** saw the high watermark of the Gupta empire. He extended the limits of the empire by marriage alliance and conquests.
- Chandragupta exercised indirect control over the Vakataka kingdom in central India. Chandragupta II conquered western Malwa and Gujarat, which gave Chandragupta the western sea coast famous for trade and commerce.
- Chandragupta II adopted the title of Vikramaditya. The court of Chandragupta II was adorned by numerous scholars including Kalidasa and Amarasingha.
- It was in Chandragupta's time that the Chinese pilgrim Fa-Hsien (399-414) visited India and wrote an elaborate account of the life of its people.
- **Hence, option (b) is the correct answer.**

Q 88.B

- **When Humayun, the second Mughal emperor, returned from his exile, he brought along with him two eminent Persian artists – Mir Sayyid Ali and Abd al-Samad.** Based on Humayun's instructions, these Persian artists created many famous paintings, including the 'Khamasa of Nizami'.
 - These paintings deviated from the traditional style of Persian art and hence a new style of the art form called '**Mughal Painting**' was born. Mughal paintings were further developed by subsequent Mughal emperors.
- **Akbar**
 - **He established an entire department devoted to paintings and scribing of his documents.** He also established a formal artistic studio, Tasvir Khana where artists were hired on salary to develop their own styles. **Hence option (b) is the correct answer.**
 - He had employed more than a hundred painters from different parts of the country and lavishly conferred honors on works of great excellence. He had a special admiration for the work of Hindu artists, notably **Daswanth and Basawan**.
 - Several noteworthy works were completed during Akbar's period, which includes the **illustrated stories of Hamza nama; illustrated Mahabharata called Razm-Nama** and the **illustrated Ramayana and Timur nama, Babur nama, and Akbar-Nama**.
- **Jahangir**
 - **During Jahangir's time, the art of painting reached its climax.** He was a naturalist and preferred the paintings of flora and fauna. He was himself a good artist and had his own private workshop although no major work by him survives.
 - Jahangir promoted calligraphy which was considered to be the foremost art in the Islamic world. Portrait painting also came into vogue during this period.
 - Mansur, Abdul Hasan, and Bishandas were the great painters in the court of Jahangir. Jahangir has bestowed the title of Nadir-ulAsr on Mansur. During this period, the influence of Western/European painting on the Mughal painters became more pronounced.
- **Shahjahan**
 - Painting achieved a new delicacy and romantic flavor during the reign of Shah Jahan. Love, romance, portraits, and durban scenes became the common themes.
 - The artists portrayed the romances of **Laila-Majnu, Shirin-Farhad, Kamrup- Kamlata, and Baz Bahadur-Rupmati**.
 - The chief artists of Shah Jahan's period were **Muhammad Faqirullah Khan, Mir Hashim, Muhammad Nadir, Bichitr, Chitarman, Anupchatar, Manohar, and Honhar**.
- **Aurangzeb**
 - Aurangzeb's indifference to painting compelled mainly a great artist to shift their bases to other kingdoms in **Punjab, Rajasthan, and other parts of the country**, precipitating a **decline in the Mughal painting**.
- **Other Mughal emperors**
 - Bahadur Shah, I (1707-1712 AD) tried to restore the court patronage of painting. The magnificent work of painting, Shahjahan-nama, was produced during his period.
 - Farrukhsiyar (1713- 1718 AD) continued the royal patronage of painting and so did Muhammad Shah Rangila (1719-1748 AD). With the **invasion of Nadir Shah in 1739 AD, the en masse exodus of artists from Delhi began and the Mughal painting gradually went into oblivion.**

Q 89.B

- Koodiyaattam is one of the oldest traditional theatre forms of Kerala. Evidence shows that this dance form was in vogue in all major temples from the ninth century, and it became a full-fledged dramatic presentation before the fifteenth century.

- **Koodiyaattam is Kerala's distinctive stage interpretation of the very early Sanskrit drama as dance drama. It is thus based on Sanskrit theatre traditions. Hence, statement 1 is not correct.**
- The word Koodiyaattam literally means "acting together".
- The characters of this theatre form are Chakyaar or actor, Naambiyaar, the instrumentalists, and Naangyaar, those taking on women's roles.
- The Sutradhar or narrator and the Vidushak or jesters are the protagonists. It is the Vidushak alone who delivers the dialogues.
- **A typical Koodiyattam performance involves elaborate and lengthy acting sequences using hand gestures and distinctive modes of acting like Ilakiyaattom, Pakarnnaattom, and Irunnaattom.**
- **Emphasis is laid on hand gestures and eye movements which makes this theatre form unique. Hence, statement 2 is correct.**
- It is usually performed only in temple theatres known as Koothambalam by members of the Chakyar and Nambiar castes till the first half of the 20th century. Only through rigorous training lasting many years, one can aspire to master the craft of Kutiyattam.
- Recently UNESCO (United Nations Educational Scientific and Cultural Organization) honoured Koodiyattam by declaring the art form as one among the "Masterpieces of the Oral and Intangible Heritage of Humanity", which should be protected and preserved.

Q 90.B

- Navroz is the **Iranian New Year**, which is widely known as the Persian New Year is celebrated worldwide.
- The festival is celebrated on the first of **Farvardin - Zoroastrian** calendar's first month and the onset of spring.
- **Listed in UNESCO Intangible Cultural Heritage of Humanity of India**, the festival is also known as Nowrouz, Navruz, Nauroz, Novruz, Nevruz, and Nooruz.
- The festival commences at the **vernal equinox stroke**, the time when the sun passes through the equator. Although the date of Navroz Festival falls in March worldwide, India celebrates it in August as well.
- The second date of Navroz Festival is calculated according to the Shahen Shahi calendar, which is 17th August. It is celebrated in Afghanistan, Azerbaijan, India, Iran, Iraq, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkey, Turkmenistan, and Uzbekistan.
- In India, it is mostly celebrated in Gujarat and Maharashtra. The tradition began some 3000 years ago and is baptized after the Persian King, Jamshed who introduced the Parsi calendar. Thus, the name - Jamshed-i-Nouroz.
- All over the world, the Parsi community and various sects of Muslims (Sunni and Shia, both) celebrate Navroz.
- The Mughal kings celebrated three major festivals a year: the solar and lunar birthdays of the monarch and Nauroz.
- **Hence option (b) is the correct answer.**

Q 91.D

- The Brahmi script is the earliest writing system developed in India after the Indus script.
 - Most scripts used to write modern Indian Languages are derived from Brahmi, the script used in most Ashokan Inscriptions.
 - > The Harappan inscriptions await decipherment, seem to have been written in a pictographic script in which ideas and objects were expressed in the form of pictures.
 - **James Prinsep deciphered the Ashokan Brahmi in 1838. Hence statement 2 is correct.**
 - Brahmi scripts prevailed in the whole country except for the north-western part. Greek and Aramaic scripts were employed in writing Ashokan Inscriptions in Pakistan and Afghanistan.
 - **Brahmi continued to be the main script till the end of the Gupta period. Hence statement 3 is correct.**
 - Brahmi was written from **left to right**.
- **The Kharosthi script (also known as 'Indo-Bactrian' script) was a writing system originally developed in present-day northern Pakistan, sometime between the 4th and 3rd century BCE.**
 - It was employed to represent a form of Prakrit, an Indo-Aryan language.
 - **It was written from right to left. Hence statement 1 is correct.**

Q 92.A

- Recently, Scientists at **CSIR-NCL Pune, with support from the Water Technology Initiative of the Department of Science and Technology (DST)**, Government of India, has developed the **novel hybrid technology called SWASTIIK** that involves boiling of a liquid as a result of pressure reduction (cavitation) and also uses natural oils having antimicrobial properties. This technology can eliminate harmful bacteria, including antimicrobial-resistant bacteria, economically. It not only integrates Indian traditional knowledge of Ayurveda for **complete disinfection of water but also may offer possible health benefits of natural oils**.
- The technique used; hydrodynamic cavitation combines chemistry, biology, and chemical engineering along with **natural resources in the form of natural oils and plant extracts**. The process, which draws inspiration from Indian traditional knowledge, **has resulted in increased efficiency and reduced cost of water treatment**. The team achieved complete elimination for gram-negative E. coli and gram-positive S. aureus bacteria and even AMR bacteria/ difficult opportunistic pathogenic bacteria typically in 5-10 minutes. It was observed that increased rates of disinfection using oil can drastically reduce the time of operation and consequently reduce cost as compared to other advanced treatment processes.
- **Hence option (a) is the correct answer.**

Q 93.A

- Harappan civilization is one of the most ancient civilizations of the world. It was believed to be a hub of art and culture and architecture. The discoveries made at these architectural sights give us great insight into their lives and lifestyles.
- A typical Harappan city was divided into two sections, each fortified separately.
 - Citadel: It was located on an artificially raised mound (sometimes called acropolis). It housed the important buildings of the city, like the assembly halls, religious structures, granaries and in the great bath in case of Mohenjo-Daro.
 - Lower Town: The lower section of the city was where the housing for the inhabitants was located. it was well connected with broad roads about 30 meters long which met at right angles. The houses were located in the rectangular squares thus formed.
- **Salient Features of Indus Valley Town Planning which were commonly found in most of the large and small cities.**
- **City Walls**
 - Each city was surrounded by massive walls and gateways. It was built to control trade and also to stop the flooding of city.
 - Each part of the city was made up of walled sections. Each section included different buildings such as: Public buildings, houses, markets, craft workshops, etc.
- **Grid Pattern: Hence option 2 is correct.**
 - Most of the settlements were laid out on a grid pattern where roads were laid down at right angles.
 - Streets were oriented east to west.
- **Drainage system: Hence option 1 is correct.**
 - It was carefully planned with drains laid out first and then houses built along them.
 - If domestic wastewater had to flow into the street drains, every house needed to have at least one wall along a street.
 - Drains were covered at most of the places highlighting the hygiene etiquettes of Harappa people.
- **Residential Buildings**
 - They were mainly **made up of brick** and consisted of an open terrace flanked by rooms. **Hence option 3 is correct.**
 - Standardized baked bricks, as well as sun-dried bricks, were used.
 - Some houses even had multiple stories and paved floors.
 - Most of the houses had their own wells, drains and bathrooms.
- **Some of the architectural features unique to Large cities like Harappa and Mohenjodaro**
- **Granaries**
 - It is the largest building used to store grains. It reflects a highly developed agricultural system.
 - It was well ventilated and it was possible to fill grain in from outside.
 - Great Granary was found at Mohenjo-daro, while six small granaries were found at Harappa.
- **Great Bath: Hence option 4 is not correct.**
 - The Great Bath is part of a large citadel complex that was found in the 1920s during excavations of Mohenjo-daro, one of the main centres of the Indus civilization.
 - It was probably used for religious or ritualistic purposes.
 - It was connected to an elaborate water supply and sewer system.

Q 94.D

- Neolithic Age, which means New Stone Age, was the last and third part of the Stone Age.
- The Neolithic Age saw a man turning into a food producer from a food gatherer. It also witnessed the use of pottery for the first time. People used microlithic blades in addition to tools made of polished stone. The use of metal was unknown. **Hence, statement 1 is correct.**
- The Neolithic settlers were the earliest farming communities. They broke the ground with stone hoes and digging sticks at the end of which ring stones weighing one to half a kilogram were fixed. The people of the Neolithic Age cultivated ragi, horse gram, cotton, rice, wheat, and barley and hence were termed as food producers. **Hence, statement 2 is correct.**
- They led a settled life. The people of the Neolithic Age lived in rectangular or circular houses which were made of mud and reed. The people of Mehrgarh lived in mud-brick houses while pit-dwelling is reported from Burzahom, the Neolithic site found in Kashmir.
- **They domesticated cattle, sheep, and goats.** For example, the Neolithic settlers in Piklihal were cattle-herders. They set up seasonal camps surrounded by Cowpens made with posts and stakes. In these enclosures, they accumulated dung. Then the entire camping ground was put to fire and cleared for camping the next session. But it is interesting that in Burzahom, domestic dogs were buried with their masters in their graves. **Hence, statement 3 correct.**

Q 95.B

- **The CEO Water Mandate is a UN Global Compact initiative to demonstrate the commitment and efforts of companies to better their water and sanitation agendas as part of long-term Sustainable Development Goals.** The CEO Water Mandate is designed to assist companies in the development, implementation, and disclosure of comprehensive water strategies and policies. It also provides a platform for companies to partner with like-minded businesses, UN agencies, public authorities, civil society organizations, and other key stakeholders. **Hence option (b) is the correct answer.**
- The CEO Water Mandate is a unique public-private initiative that mobilizes business leaders for water stewardship. Established by the UN Global Compact in 2007, the Mandate was created out of the acknowledgment that global water challenges create risk for a wide range of industry sectors, the public sector, local communities, and ecosystems alike. The CEO Water Mandate is rooted in the belief that cross-sectoral collaboration on shared water goals is the most effective path to more sustainable water management and that the private sector can be a critical partner in this effort.
- **Recently NTPC Ltd, India's largest power utility Under the Ministry of Power has become a signatory to the prestigious UN Global Compact's CEO Water Mandate.** With NTPC joining the coveted league of companies that focus on efficient water management, its Chairman and Managing Director Shri Gurdeep Singh has joined a select group of business leaders who recognize the ever-growing importance of water stewardship and have been working to conserve this precious natural resource. **NTPC Ltd has joined a list of businesses that have already committed to the CEO WATER MANDATE such as Hindustan Zinc Ltd, Adani Ports and Special Economic Zone Limited (APSEZ), etc.**
- The UN Global Compact has and will continue to de-list endorsing companies if they fail to fulfill their UN Global Compact obligations or meet the Mandate's annual Communication on Progress — Water reporting requirements. Pursuant to the Transparency Policy of the CEO Water Mandate the Secretariat shall decide on companies deemed to be “non-communicating” or those that should be de-listed.
- **Endorsers of the CEO Water Mandate must be lawfully established business enterprises, either public or private,** committed to implementing the Mandate elements.

Q 96.D

- The decline of the Gupta empire resulted in the emergence of numerous ruling dynasties in different parts of northern India. **The prominent among them were the Pushyabhutis of Thanesar, Maukharis of Kanauj, and the Maitrakas of Valabhi.**
- **Maitrakas**
 - The Maitrakas were tributary chiefs of the Guptas, **who established an independent kingdom in western India.** Dhruvasena II was the most important ruler of the Maitrakas. He was a contemporary of Harshavardhana. Ruling over Saurashtra in Gujarat, the Maitrakas developed Valabhi as their capital. This city became an important center of learning.
- **Maukharis**
 - The Maukharis ruled over **Kanauj, a city in western Uttar Pradesh,** which gradually replaced Pataliputra as a political center of north India. Maukharis were also the subordinate rulers of the Guptas and used the title of samanta.

- **Pushyabhutis**
 - An important ruling family to gain prominence after the fall of the Gupta was that of the **Pushyabhutis who had their capital at Thanesar** (Thanesvara in Kurukshetra). The dynasty became influential with the accession of Prabhakarvardhana, who was able to defeat the Hunas and strengthen his position in the regions of Punjab and Haryana
- **Hence, option (d) is the correct answer.**

Q 97.D

- Vijayanagara empire was founded in 1336 and Vijayanagara literally mean ‘city of victory’, which attracted a number of international travellers such as the Italian, **Niccolo di Conti, the Portuguese Domingo Paes, Fernao Nuniz and Duarte Barbosa and the Afghan Abd al-Razzaq**, who have left vivid accounts of the city. In addition, various Sanskrit and Telugu works document the vibrant literary tradition of this kingdom. Architecturally, Vijayanagara synthesises the centuries-old dravida temple architecture with Islamic styles demonstrated by the neighbouring sultanates.
- **Megasthenes**, (born c. 350 bc—died c. 290), ancient Greek historian and diplomat, author of an account of India, the Indica, in four books. An Ionian, he was sent by the Hellenistic king Seleucus I on embassies to the Mauryan emperor Chandragupta maurya. **Hence option (d) is answer.**

Q 98.B

- **The Partiharas:**
 - The Pratiharas are also called **Gurjara- Pratiharas** probably because they originated from Gurjarata or south-western Rajasthan. They were, at first probably local officials but were able to carve out a series of principalities **in central and eastern Rajasthan**. The **real founder of the Pratihara empire** and the greatest ruler of the dynasty was **Bhoja**. He rebuilt the empire and by about **863 he had recovered Kanauj** which remained the capital of the empire for almost a century.
 - **Between 915 and 918**, the Rashtrakuta king **Indra III attacked Kanauj and devastated the city**. This weakened the Pratihara empire, and Gujarat probably passed into the hands of the Rashtrakutas, for al-Masudi tells us that the Pratihara empire had no access to the sea.
 - **Another Rashtrakutas ruler, Krishna III (939 – 967 AD), invaded North India in about 963 and defeated the Pratihara ruler**. This was followed by the rapid dissolution of the Pratihara empire. **Krishna III was the last great warrior and capable ruler of the Rashtrakuta Dynasty of Manyakheta**. He was a wise manager and adroit military campaigner. He pursued numerous wars to bring back the wonderfulness of the Rashtrakutas and assumed an essential part in revamping the Rashtrakuta realm. At his top, he ruled an inconceivable realm extending from the Narmada stream in the north to the Kaveri waterway delta in the south.
 - **Hence option (b) is the correct answer.**

Q 99.B

- The administrative machinery of the Aryans in the Rig Vedic period worked with the tribal chief in the center, because of his successful leadership in war. He was called Rajan. It seems that in the Rig Vedic period the king’s post had become hereditary. However, the Rajan was a kind of chief and he did not exercise unlimited power, for he had to reckon with the tribal assembly called the Samiti. **Hence, statement 1 is not correct.**
- There were various tribal assemblies such as sabha, Samiti, vidatha, and gana are mentioned in the Rig Veda. They exercised deliberative, military, and religious functions. Even women attended sabha and vidatha in Rig Vedic times. **Hence, statement 2 is correct.**
- But the two most important assemblies were the sabha and the Samiti. These two were so important that the chiefs or the kings showed eagerness to win their support.
- In the day-to-day administration, the king was assisted by a few functionaries. The most important functionary seems to have been the purohita. The two priests who played a major part in the time of Rig Veda are Vasishta and Vishvamitra. Vishvamitra composed the Gayatri mantra to widen the Aryan world. The priests inspired the tribal chiefs to action and lauded their exploits in return for handsome rewards in cows and women slaves. The next important functionary seems to be the senani, who used spears, axes, swords, etc. We do not come across any off officer concerned with the collection of taxes. **Hence, statement 3 is not correct.**

Q 100.A

- The sixth century BCE is a major turning point in early Indian history. It is an era associated with early states, cities, the growing use of iron, the development of coinage, etc.
- It also **witnessed the growth of diverse systems of thought, including Buddhism and Jainism**. Early Buddhist and Jaina texts mention, amongst other things, sixteen states known as mahajanapadas.
- Although the lists vary, some names such as Vajji, Magadha, Koshala, Kuru, Panchala, Gandhara, and Avanti occur frequently. Clearly, these were amongst the most important mahajanapadas. While most mahajanapadas were ruled by kings, some, known as ganas or sanghas, were oligarchies, where power was shared by a number of men, often collectively called rajas. **Hence, statement 2 is not correct.**
- Both Mahavira and the Buddha belonged to such ganas. In some instances, as in the case of the Vajji sangha, the rajas probably controlled resources such as land collectively. Although their histories are often difficult to reconstruct due to the lack of sources, some of these states lasted for nearly a thousand years.
- **Each mahajanapada had a capital city, which was often fortified.** Maintaining these fortified cities as well as providing for incipient armies and bureaucracies required resources. Brahmanas began composing Sanskrit texts known as the Dharmasutras. These laid down norms for rulers (as well as for other social categories), who were ideally expected to be Kshatriyas. Rulers were advised to collect taxes and tribute from cultivators, traders, and artisans. **Hence, statement 1 is correct.**
- **Raids in neighboring states were recognized as a legitimate means of acquiring wealth.** Gradually, some states acquired standing armies and maintained regular bureaucracies. Others continued to depend on the militia, recruited, more often than not, from the peasantry. **Hence, statement 3 is correct.**

