Class 9 Extra Questions

Question Bank

Chapter 1 - Earth as a Planet

Multiple Choice Questions

1. The equatorial diameter of earth is:

(a) 12756 km
(b) 12714 km
(c) 40076 km
(d) 4000 km

Correct Answer: (a) 12756 km

2. In which of the following ecosystem human life is not possible?

(a) Forest ecosystem
(b) Grassland ecosystem
(c) Marine ecosystem
(d) None of the above

Correct Answer: (c) Marine ecosystem

3. The exact shape of the earth is:

(a) sphere
(b) circle
(c) oblate spheroid
(d) flat

Correct Answer: (c) oblate spheroid

4. Pick the correct sequence of food chain in an ecosystem.

(a) Producer → Decomposer → Consumer
(b) Decomposer → Consumer → Producer
(c) Consumer → Producer → Decomposer
(d) Producer → Consumer → Decomposer

Correct Answer: (d) Producer → Consumer → Decomposer

5. Who wrote 'On the Revolution of the Heavenly Bodies'?

(a) Pythagoras

(b) Copernicus
(c) Magellan
(d) Aryabhatta

Correct Answer: (b) Copernicus

6. The zone extending from slightly below the earth's surface to slightly above it in which life is possible is called:

(a) Hydrosphere
(b) Lithosphere
(c) Biosphere
(d) Atmosphere

Correct Answer: (c) Biosphere

7. What is the weight of man on moon's surface?

(a) 1/6th of the weight on earth
(b) Same as on earth
(c) 1/2nd of the weight on earth
(d) Double of the weight on earth

Correct Answer: (a) 1/6th of the weight on earth

8. Number of days required by earth to complete one revolution around the sun are:

(a) 365 days
(b) 366 days
(c) 365 1/4 days
(d) 366 1/4 days

Correct Answer: (c) 365 1/4 days

9. The orbit of earth lies between:

(a) Mars and Jupiter
(b) Venus and Mars
(c) Venus and Jupiter
(d) Saturn and Mars

Correct Answer: (b) Venus and Mars

10. Magellan concluded spherical shape of earth in:

(a) 1522 AD
(b) 1492 AD
(c) 1510 AD
(d) 1493 AD

Correct Answer: (a) 1522 AD

Give Reasons for the Following

1. Presence of water on Earth is essential for our survival.

Ans. Water is essential to support life in various forms. Besides being a prerequisite for life on Earth, water also helps in keeping the temperature of the Earth moderate. Water keeps human beings, animals as well as plants hydrated. In fact, it is believed that the earliest forms of life on Earth evolved in the oceans.

2. There is an antipodal arrangement of land and water on the Earth because there is land in one part of the globe, and there is water opposite to it, on the other side of the Earth.

Ans. The greatest land masses form an almost complete girdle in the Northern Hemisphere whereas in the Southern Hemisphere, the landmasses are the narrowest.

3. Earth is called a 'watery planet'.

Ans. The Earth is called a 'watery planet' due to the abundance of water, which covers about 71% of the surface of the Earth.

4. The Earth is the only habitable planet in the solar system.

Ans. The Earth is the only planet in the Solar System where life exists because it has all the required components for life, such as air, water, food and suitable temperature.

5. The time of sunrise and sunset is not the same everywhere.

Ans. The time of sunrise and sunset is not the same everywhere in the world because the Earth is not a flat disc. It is a spherical body.

6. The Earth has the most ideal temperature conditions.

Ans. The Earth has the most ideal temperature conditions because it is situated at an average distance of about 150 million kilometres from the Sun.

7. Earth is neither a burning nor extremely cold planet.

Ans. The Earth is neither a burning nor an extremely cold planet because its average temperature on the surface is 17°C, far more favourable for living conditions than about 500°C on the nearest planets and about 150°C to 200°C below freezing point on the sunlit sides of distant planets.

8. Even though the Moon is the closest heavenly body to the Earth, it is not a habitable area.

Ans. The gravitational pull of the Moon is too weak to hold gases to form the atmosphere and due to the absence of the atmosphere, possibility of water is almost negligible.

Chapter 2 - Latitudes and Longitudes

Multiple Choice Questions

1. An imaginary line that divides the earth into two hemispheres is known as:

(a) Prime Meridian
(b) Equator
(c) Tropic of Capricorn
(d) Tropic of Cancer

Correct Answer: (b) Equator

2. Longitudes are those imaginary lines which:

(a) run from east or west of the Prime Meridian
(b) run from east to west parallel to the Equator
(c) divides the earth into two hemispheres
(d) passes through Greenwich near London

Correct Answer: (a) run from east or west of the Prime Meridian

3. An imaginary line which passes through the middle of the Pacific Ocean and follows a 180° longitude N-S line is called as:

(a) Local Line
(b) Prime Meridian
(c) International Date Line
(d) Equator

Correct Answer: (c) International Date Line

4. A framework of lines of latitudes and longitudes that cross each other is known as:

(a) GMT
(b) Grid
(c) Equator
(d) Prime Meridian

Correct Answer: (b) Grid

5. The zone which is very hot and where the sun is overhead twice during the year is known as:

(a) Grid
(b) Temperate zone
(c) Tropical zone/Torrid
(d) Sub-tropical zone

Correct Answer: (c) Tropical zone/Torrid

6. Pick the incorrect matching of Latitudes with their locations.

(a) Equator – Midway between two poles
(b) Tropic of Cancer – South of Equator
(c) Antarctic Circle – South polar region
(d) Arctic Circle – North polar region

Correct Answer: (b) Tropic of Cancer – South of Equator

7. The time along the 0° line of longitude passing through Greenwich is known as:

(a) GMT
(b) IST
(c) Local time
(d) None of the above

Correct Answer: (a) GMT

8. Distance between each latitude is:

(a) 11 km
(b) 111 km
(c) 1111 km
(d) 1100 km

Correct Answer: (b) 111 km

9. Arctic circle is at:

(a) 23 1/2° N
(b) 23 1/2° S
(c) 66 1/2° S
(d) 66 1/2° N

Correct Answer: (d) 66 1/2° N

10. North pole is at:

(a) 90° N
(b) 90° S
(c) 0°
(d) 23 1/2° N

Correct Answer: (a) 90° N

11. There are no latitudes higher than 90° N and 90° S because:

(a) 90° N is North Pole
(b) 90° S is South Pole
(c) North Pole and South Pole are end of the earth
(d) All of the above

Correct Answer: (d) All of the above

12. How many hours Indian time is ahead of Greenwich Mean Time?

(a) 4 hours
(b) 5 hours
(c) 5 1/2 hours
(d) 4 1/2 hours

Correct Answer: (c) 5 1/2 hours

Give Reasons for the Following

1. Latitudes and Longitudes are always expressed in angles.

Ans. Latitudes and Longitudes are always expressed in angles because latitudes while running east to west and longitudes while running north to south, intersect and form angles.

2. A person gains time as he travels towards east.

Ans. A person gains time as he travels towards east because the places east of Greenwich see the sun earlier.

3. The intervals between successive parallels are constant.

Ans. The intervals between successive parallels are constant because there are 180 parallels at 1° interval.

4. A person travelling from Mumbai to London has to alter his watch.

Ans. A person travelling from Mumbai to London has to alter his watch because the time at Mumbai will be 5 hours 20 minutes ahead of London.

5. The difference between IST and the GMT is 5 hours and 30 minutes.

Ans. The difference between IST and the GMT is 5 hours and 30 minutes because IST is diametrically opposite to that of the GMT (with reference to its chosen central meridian).

6. There are no latitudes higher than 90°N and 90°S.

Ans. There are no latitude higher than 90°N and 90°S because 90°N is the North Pole and 90°S is the South Pole and it is the end of the Earth.

7. The meridians of longitude form a complete circle on the globe.

Ans. Meridians of longitude run from 0° to 180° East and West on the globe which together (360° longitude in all) form a complete circle.

8. All parallels other than Equator are not Great Circles.

Ans. All parallels of latitude other than Equator are not Great Circles because they do not divide the Earth in two equal halves.

9. When it is Noon (12.00 hrs.) in England, it is 5.30 p.m. in India.

Ans. The local time of India is 82 1/2° × 4 = 330 minutes = 5 hours 30 minutes ahead of Greenwich time. This means when it is noon (12.00 hrs.) in England, it is 5.30 p.m. in India.

10. Greenwich time is called Greenwich Mean Time.

Ans. Greenwich time is called Greenwich Mean Time because Greenwich Mean Time is the local time of the old Greenwich Observatory (0° longitude).

11. Describe why 1° of latitude is equal to about 111 km throughout whereas 1° of longitude in terms of distance varies.

Ans. 1° of latitude is equal to about 111 km throughout because latitudes run parallel to each other whereas longitudes meet at the north and south poles.

12. The International Date Line or 180° is not a straight line like other longitudes. It deviates from it in a number of places.

Ans. The International Date Line does not follow the 180° longitude exactly. It deviates from it in a number of places. It is so because it is adjusted at the boundaries of the time zones so that it does not bisect any country and each country remains on a single calendar day.

Short Answer & Technical Concept Questions

1. What is a great circle? Which of the parallels of latitude is a great circle?

Ans. A great circle is a circle drawn on the earth in such a way that the centre of the circle is the centre of the earth. The Equator is the only parallel of latitude which is a great circle.

2. Explain the importance of the Equator as a reference point.

Ans. The Equator is the reference line for measuring distances of places to the north and south. The Equator is taken as 0° latitude and all other latitudes are measured up to 90° north and south.

3. Explain the relationship between longitude and time.

Ans. The relationship between the Sun and Earth is considered as the best timekeeper in the world. The Earth rotates on its axis from west to east and makes a full circle. Thus earth rotates 360° (longitudes) in 24 hours or 15° in one hour or 1° in 4 minutes. This shows a distinct relationship between the longitude of a place and the time at that place. When the

Earth rotates from west to east, every meridian on the earth's surface faces the sun once every day. This is the time when it is at the highest point in the sky which is called midday or noon at that meridian.

4. Why do we need to locate places on the Earth?

Ans. A vast expanse of land is occupied by a number of villages, towns, cities and countries which can be located at a glance if one looks at a globe. We need to locate these places as they act as guidelines.

5. What are the limits of Two Temperate Zones?

Ans. Two important lines of latitude based on temperature are the Arctic Circle (66 1/2° N) and the Antarctic Circle (66 1/2° S). Between the Arctic Circle and the Tropic of Cancer as well as between the Antarctic Circle and the Tropic of Capricorn lie the two Temperate Zones – north temperate and south temperate zones.

6. Why are the places in the Torrid Zone hotter than those in other zones?

Ans. The places in the Torrid Zone are hotter than those in other zones because this zone lies between the Tropic of Cancer and Tropic of Capricorn which mark the limit of the overhead sun to the North and South of the Equator. The Sun is overhead twice during the year. The rays of the Sun in the Torrid Zone are direct, which means that the heat conveyed is more.

7. Give a single term for each of the following:

(a) The angular distance of a place north or south of the Equator. — **Latitude**

(b) The angular distance of a place east or west of the Prime Meridian. — **Longitude**

(c) The latitude of 23 1/2° North. — **Tropic of Cancer**

(d) The latitude of 66 1/2° South. — **Tropic of Capricorn**

(e) The shortest route between two places on the earth followed by navigators. — **Great Circle**

(f) The meridian used for determining the standard time of a country. — **Prime Meridian / Standard Meridian**

(g) Imaginary semicircles produced by lines connecting the two poles of the earth. — **Meridians**

8. Comparison: GMT vs IST

Greenwich Mean Time (GMT)	Indian Standard Time (IST)
(i) The Greenwich Mean Time is based on the local time of the 0° longitude.	(i) The Indian Standard Time is based on the central meridian of 82°30' E which passes through Allahabad.

(ii) Greenwich Mean Time is adopted uniformly by all the countries at International level.

(ii) The Indian Standard time is 5 hours and 30 minutes ahead of Greenwich Mean Time.

9. Differences between Parallels of Latitude and Meridians of Longitude

Basis of distinction	Parallels of Latitude	Meridians of Longitude
1. Shape	Full circles.	Semi-circles.
2. Size	Vary from the Equator towards the poles.	Equal in length.
3. Distance	The distance between any two parallels is always equal.	The distance between any two meridians decreases polewards where they meet.
4. Direction	Run east-west.	Run north-south.
5. Total number	There are 180 parallels of latitude at an interval of 1°.	There are 360 meridians of longitude at an interval of 1°.

10. Numerical Proof: Prove that 1° latitude is equal to 111 km approx.
Ans. 1° latitude is equal to:
= (The circumference of the Earth) / 360°
= 40,000 km / 360 = 111 km approx.

11. Local time in Allahabad (82½° E) when it is 12 Noon at 0° GMT.
Ans. Difference in longitude = 82.5° - 0° = 82.5°
For 1° of longitudinal difference, the time difference is 4 minutes.
Therefore, for 82.5°, the time difference is:
82.5 × 4 = 330 minutes = 5 hrs. 30 min.
Since Allahabad is to the east of Greenwich, the local time at 82.5° E is:
12 noon + 5 hrs. 30 min = 17 hrs. 30 min or 5:30 p.m.