S.S. UPSC CLASSES MATHURA
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Batch 1
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Q 1. The north-western region of the Indian sub-continent is earthquake-prone, due to-
(a) Volcanic action
(b) Plate tectonic action
(c) Coral formation
(d) All of the above

Q 2. Which city of Japan had met the devastating Tsunami and nuclear radiation?
(a) Hiroshima (b) Tokyo
(c) Fukushima (d) Kobe

Q 3. Which of the following statements is not true about the 2004 Indian Ocean earthquake and its resulting tsunami?
(a) In the Sundara ditch, about 1200 km in the downstream area of the Indian plate's Burmese plate. This earthquake has originated due to the delay of 15 meters of Bharash line.
(b) The resulting tsunami, on the east coast of Africa, from the coast of Indonesia, is about 8,500 km from Moreendra. Due to the distance of the shore drove very violent.
(c) According to the current estimates, the seismic tsunami killed more than five million people in addition to the numerous bodies buried in the sea.
(d) In Bangladesh, very few casualties occurred, because the earthquake-affected fringe line was almost north-south, the strongest force of Tsunami waves was in the east-west direction.

Q 4. Which of the following is/are correct about Types of Earthquakes?
1. Tectonic earthquakes are generated due to the sliding of rocks along the fault line.
2. Collapse earthquakes occur due to chemical or nuclear device explosions.
Select the correct answer using the codes below
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 5. Which of the following is/are correct about Volcanic Eruptions?
1. Basaltic eruption occurs at mid oceanic ridge and andesitic eruption occurs at volcanic arcs and mountains.
2. Andesitic eruption is more fluid and mobile than basaltic eruptions.
Select the correct answer using the codes below
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 6. Consider the following statements –
1. The Richter scale is a mathematical scale for measuring the intensity of earthquake waves.
2. The full form of 'Richter scale' is Richter magnitude test scale.
(a) Only 1 is correct (b) Only 2 is correct
(c) 1 and 2 both are correct (d) None of these

Q 7. If we look at the numbers from 1-10 on the Richter scale, each number is on a 'seismometer'.
(a) Represents 32 times amplitude and 10 times energy increase.
(b) Represents 10 times amplitude and 32 times energy increase.
(c) Does not represent dimensions.
(d) Does not demonstrate energy increase.

Q 8. Consider the following statements about the earthquake -
1. Earthquake intensity is measured on the Merkeli scale.
2. Magnitude of an earthquake is a measure of the energy released.
3. Earthquake magnitudes are based on direct measurements of the amplitude of seismic waves.
Which of these statements are correct?
(a) 1, 2 and 3 (b) 2 and 3
(c) 1 and 3 (d) None of these

Q 9. Consider the following statements:
1. The Richter scale is a logarithmic scale and consequently, the magnitude of 1 represents the multiplier of 10 for the increase dimension of
2. Every integer reading in the Richter scale is 100 times the energy of the previous integer reading.
Which of the above statements is / is correct?
(a) only 1 (b) only 2
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 10. 'Ring of Fire' is related to-
1. Earthquake
2. Volcano
3.Pacific Ocean
4.Forest fire
Select your answer using the code given below-
(a) 1, 2 and 3 (b) 2 and 3
(c) 2 and 4 (d) 1, 2, 3 and 4

Q 11. Which waves occur during an earthquake?
(a) B.S.L. (b) A.B.L.
(c) R.S.L. (d) P.S.L.

Q 12. Match List-I with List-II and select the correct answer using the codes given below the lists-

List-I (Volcano)	**List-II (country)**
A. Sabankaya	1. Italy
B. Mount Etna	2. Peru
C. Colima	3. Indonesia
D. Merapi	4. Mexico

Code:
(a) 3A, 1B, 4C, 2D (b) 3A, 2B, 1C, 4D
(c) 2A, 1B, 4C, 3D (d) 4A, 3B, 2C, 1D

Q 13. Match List-I with List-II and select the correct answer using the codes given below the lists-

List-I	**List-II**
(a) Etna	1. Raas Island
(b) Vesuvius	2. Ecuador
(c) Yeribus	3. Italy
(d) Cotopaxi	4. Sicily

Code:
(a) 1A, 2B, 3C, 4D (b) 4A, 3B, 1C, 2D
(c) 3A, 4B, 2C, 1D (d) 4A, 3B, 2C, 1D

Q 14. Consider the following statements
1. Stramboli volcano is a dead volcano located on the island of Lipari, north of Sicily in the Mediterranean Sea.
2. It is called the 'Lighthouse of the Mediterranean Sea' due to its surrounding area being bright.
(a) Only 1 is correct (b) Only 2 is correct
(c) Both 1 and 2 are correct (d) None of these

Q 15. The correct sequence of atmospheric gases as expressed in percentage by volume is
(a) Oxygen, carbon dioxide, nitrogen, hydrogen
(b) Carbon dioxide, oxygen, nitrogen, hydrogen
(c) Hydrogen, nitrogen, carbon dioxide, oxygen
(d) Nitrogen, oxygen, carbon dioxide, hydrogen

Q 16. Consider the following statements about ozone gas in the atmosphere:
I. Its maximum concentration is 20 to 25 km above the earth's surface.
II. It saves us from the intense heat of the sun.
(a) Statement I is correct
(b) Statement II is correct
(c) Both Statement I and Statement II are correct
(d) Neither I nor II is correct

Q 17. Examine the following statements and select the correct answer using codes given below:
1. Atmosphere is odourless, tasteless and colourless
2. Atmosphere is held to the earth by its gravitational force and is an integral part of the earth.
3. Hydrogen present in the air is a heavy gas and is confined to the lower layers of the atmosphere only.
4. Dust particles present in the atmosphere act as hydroscopic matter.
(a) 1 and 2 only (b) 1, 2 and 3 only
(c) 2, 3 and 4 only (d) 1, 2 and 4 only

Q 18. Consider the following statements
1. Most of the weather phenomena are associated with stratosphere.
2. Lower part of stratosphere is called ozonosphere
Which of the above statements is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 19. Match list I with list II and select the correct answer using the code given below:

List I (Atmospheric layer)	**List II (Special feature)**
A. Troposphere	1. Mother of pearls
B. Stratosphere	2. Normal lapse rate
C. Ionosphere	3. Aurora Borealis
D. Mesosphere	4. Rise in temperature

(a) A-4 B-2C-1D-3 (b) A-3B-4C-1D-2
(c) A-2B-1C-3D-4 (d) A-1B-3C-4D-2

Q 20. Examine the following statements and select the correct answer using the code given below.
1. Gases in hetero sphere are not evenly mixed
2. Troposphere contains over 90% of the earth's water vapour
3. Hydrogen is confined to lower layers of the atmosphere
4. Temperature at troop pause is less at the equator than at the poles
(a) 1, 2 and 3 only (b) 1, 2 and 4 only
(c) 2, 3 and 4 only (d) 1, 3 and 4 only

Q 21. Consider the following statements:
1. Tropo pause extends to a height of 18 km at the equator and only 10 km at the poles.
2. Ionosphere is useful for radio transmission.
Which of the above statements is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 22. What is the exact sequence of atmospheric layers in ascending order from the surface of the earth?
(a) Troposphere, Stratosphere, Mesosphere, Ionosphere
(b) Troposphere, Exosphere, Mesosphere, Stratosphere
(c) Stratosphere, Mesosphere, Exosphere, Troposphere
(d) Ionosphere, Troposphere, Mesosphere, Stratosphere

Q 23. Which of the following statements is/are correct?
I. Water vapour in the atmosphere decreases with altitude.
II. It increases from equator towards the poles.
III. About 90% of atmospheric water vapour lies below 6 km.
IV. It preserves earth's radiated heat.
(a) I, II, III (b) I, III, IV
(c) I, II, III, IV (d) II, III, IV

Q 24. Consider the following statements about the atmosphere
1. Chemically it is divided into homosphere and heterosphere.
2. Molecular layer extends from 200 to 1100 km.
3. Water vapour present in the air produces the optical phenomena of red and orange hues in the sky at sunrise and sunset which are known as dawn and dusk respectively.
4. Thermosphere is divided into ionosphere and exosphere
Which of the above statements are correct?
(a) 2, 3 and 4 only (b) 1, 2 and 3 only
(c) 1, 3 and 4 only (d) 1, 2 and 4 only

Q 25. Consider the following statements:
1. Ionosphere deflects long wave, medium wave and short wave radio waves and help in radio transmission.
2. Ionosphere is the layer of convection currents
Which of the above statements is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 26. Consider the following:
Assertion (A): The thickness of the atmosphere is the maximum over the equator.
Reason (R): High insulation and strong convection currents occur over the equator.
(a) Both A are R are individually true and R is the correct explanation of A
(b) Both A and R are individually true but R is not the correct explanation of A
(c) A is true but R is false
(d) A is fast false but R is true

Q 27. Consider the following statements about a particular layer of the atmosphere.
1. It contains about three-fourth of the total mass of the atmosphere.
2. There is fall in temperature with increasing height.
3. Its height is more at equator than at the poles. All the weather phenomena occur in this layer.
Identify this layer
(a) Ionosphere (b) Mesosphere
(c) Stratosphere (d) Troposphere

Q 28.Which of the following fact about dust particles in the atmosphere is/are correct?
I. They act as hydroscopic nuclei around which water vapour condenses to produce cloud.
II. They produce dawn and dusk.
III. They have no role in the apparent colour of the sky.
(a) I and II (b) II and III
(c) I, II and III (d) I and III

Q 29. Consider the following statements.
1. The diffused light that occurs before sunrise is known as dawn.
2. Light is scattered by the molecules of atmosphere gases.
3. The duration of dawn and twilight varies with altitude.
4. Lower sun angles produces longer dawn and twilight.
Which of the above statements are correct?
(a) 1 and 2 only (b) 2 and 3 only
(c) 3 and 4 only (d) 1, 2, 3 and 4

Q 30. Which of the following is/are correctly matched?

List I (Atmospheric layers)	**List II (Characteristics)**
A. Troposphere	1. Normal lapse rate
B. Stratosphere	2. Mother of pearls
C. Ionosphere	3. Reflection of radio waves
D. Exosphere	4. Very rare air

(a) A-1 B-2C-3D-4 (b) A-2B-3C-4D-1
(c) A-3B-4C-1D-2 (d) A-4 B-3C-2D-1

Q 31. Match list I with list II and select the correct answer using the code given below.

List I (Characteristics)	**List II (Atmospheric layer)**
A. Fall in temperature with height	1. Ionosphere
B. Reflects radio waves	2. Troposphere
C. Contains ozone gas	3. Exosphere
D. Increase in temperature with height	4. Stratosphere

(a) A-2 B-1C-4D-3 (b) A-1B-3C-2D-4
(c) A-4B-3C-1D-2 (d) A-3B-4C-2D-1

Q 32. Consider the following statements
I. Increasing use of the chlorofluorocarbons has resulted in depletion of ozone layer in the atmosphere.
II. The largest ozone hole is found on the Arctic Ocean
(a) Statements I and II are correct
(b) Neither I nor II is correct
(c) Only I is correct
(d) Only II is correct

Q 33. Consider the following statements regarding homosphere and select the correct answer using codes given below:
1. It extends from the earth's surface up to an altitude of 80-90 km.
2. It has heterogeneous chemical composition.
3. Kennedy- Heaviside layer is an important part of ionosphere.
4. This part of the atmosphere is a function of revolutionary process in the atmosphere.
(a) Only 1 is correct
(b) Only 1 and 2 are correct
(c) Only 1, 2 and 3 are correct
(d) 1, 2, 3 and 4 are correct.

Q 34. The earth receives only two billionth part of the total solar radiation emitted by the sun. The probable causes are
I. Large distance of the earth from the sun.
II. Small size of the earth as compared to sun.
III. Empty space between the sun and the earth.
IV. The gaseous mass surrounding the earth.
(a) Statement I, II and III are correct.
(b) Statement II, III and IV are correct.
(c) Statement I and II are correct.
(d) Statement III and IV are correct.

Q 35. Consider the following statements:
1. Heat energy radiated by the sun into space is known as solar insolation.
2. Slope of land does not have any effect on the amount of solar radiation received at a place.
Which of the above statements is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 36. The ideal conditions for flying jet aircraft are provided by stratosphere because
I. There are no clouds and other weather phenomenon.
II. Uniform temperature increases engine efficiency.
III. The presence of ozone gas increases fuel efficiency
IV. Air resistance is at its maximum.
Which statement is/are correct?
(a) Only I (b) I and II
(c) I, II and III (d) I, II, III and IV

Q 37. Which factor does not affect the amount of solar radiation received at the surface of the earth?
(a) Inclination of sun's rays
(b) Presence of clouds in the atmosphere
(c) Duration of day
(d) Rotation of the earth

Q 38. The earth's albedo means:
(a) Solar radiation absorbed by the earth's surface.
(b) Solar radiation absorbed by the atmosphere.
(c) Solar radiation reflected back by the earth's surface to the space.
(d) Ratio between the total solar radiation falling upon a surface and amount reflected in percentage,

Q 39. Consider the following statements:
1. The reflective quality of a surface, expressed in percentage of the total energy received known as its albedo.
2. The albedo of water surface varies from 2 to 99 per cent depending on the angle of incidence of the sun's rays.
3. Albedo of old snow is layer than that of the fresh snow.
4. The overall albedo of clouds is larger than other surface.
Which of the above statements is/are correct?
(a) 1, 2 and 3 only (b) 2, 3 and 4 only
(c) 1, 2 and 4 only (d) 1, 2, 3 and 4

Q 40. Consider the following ecosystems:
1. Taiga
2. Tropical evergreen
3. Tropical deciduous
4. Tundra
The correct sequence in decreasing order of the Albedo values of those ecosystems is;
(a) 1, 4, 3, 2 (b) 4, 1, 3, 2
(c) 4, 1, 2, 3 (d) 1, 4, 2, 3

Q 41. Consider the following statements:
I. Balance of heat received and emitted by the earth is called its heat budget.
II. Less than half of the solar insulation received at the top of the atmosphere reaches the earth's surface.
(a) I is correct
(b) II is correct
(c) Both I and II are correct
(d) Neither I nor II is correct

Q 42. Consider the following statements:
I. Insulation is the heat energy and temperature is the measure of heat intensity.
II. Insulation is measured in calories whereas temperature is expressed in degrees (°C or °F).
III. Insolation is the effect and temperature is the cause.
Find out the correct statements using the following code.
(a) I only (b) I and II only
(c) I, II and III (d) II and III only

Q 43. Match list I with list II and select the correct answer using the code given below

List I (Process)	**List II (Definition)**
A. Absorption	1. The reflection quality of a surface
B. Albedo	2. Solar radiation which is intercepted by the earth.
C. Refraction	3. The bending effect that occurs when insolation enters the atmosphere
D. Insolation	4. Assimilation and conversion of radiation from one form to another in a medium

Code:
(a) A-4 B-1C-3D-2 (b) A-2B-3C-1D-4
(c) A-1B-4C-2D-3 (d) A-3B-2C-4D-1

Q 44. The ozone deflection can cause:
1. Skin cancer particularly to white skinned people.
2. Crop damage
3. Throat irritation and fatigue
4. Injury to some aquatic life
Find out the correct answer using code given below.
(a) 1 and 2 only (b) 1, 2 and 3 only
(c) 1, 2, 3 and 4 (d) 2, 3, 4 only

Q 45. Consider the following statements:
Statement-I: Rainfall is one of the reasons for weathering of rocks.
Statement-II: Rain water contains carbon dioxide in solution.
Statement-III: Rain water contains atmospheric oxygen.
Which one of the following is correct in respect of the above statements?
(a) Both Statement-II and Statement-III are correct and both of them explain Statement-I
(b) Both Statement-II and Statement-III are correct, but only one of them explains Statement-I
(c) Only one of the Statements II and III is correct and that explains Statement-I
(d) Neither Statement-II nor Statement-III is correct

Q 46. Consider the following:
1. Pyroclastic debris
2. Ash and dust
3. Nitrogen compounds
4. Sulphur compounds
How many of the above are products of volcanic eruptions?
(a) Only one (b) Only two
(c) Only three (d) All four

Q 47. On June 21 every year, which of the following latitude(s) experience(s) a sunlight of more than 12 hours?
1. Equator
2. Tropic of Cancer
3. Tropic of Capricorn
4. Arctic Circle
Select the correct answer using the code given below:
(a)1 only (b)2 only
(c) 3 and 4 (d)2 and 4

Q 48. Ilmenite and rutile, abundantly available in certain coastal tracts of India, are rich sources of which one of the following?
(a) Aluminium (b) Copper
(c) Iron (d) Titanium

Q 49. Consider the following statements:
1. In a seismograph, P waves recorded earlier than S waves.
2. In P waves, the individual particles vibrate to and fro in the direction of wave propagation whereas in S waves, the particles vibrate up and down at right angles to the direction of wave propagation
Which of the statements given above is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 50. In the northern hemisphere, the longest day of the year normally occurs in the:
(a) First half of the month of June
(b) Second half of the month of June
(c) First half of the month of July
(d) Second half of the month of July

Q 51. On 21st June, the Sun:
(a) Does not set below the horizon at the Arctic Circle
(b) Does not set below the horizon at Antarctic Circle
(c) Shines vertically overhead at noon on the Equator
(d) Shines vertically overhead at the Tropic of Capricorn

Q 52. Which of the is/are the possible consequences of heavy sand mining in riverbeds?
1. Decreased salinity in the water
2. Pollution of groundwater
3. Lowering of the water label
Select the correct answer using the code below:
(a) 1 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

Q 53. Which of the following phenomena might have influenced the evolution of organisms?
1. Continental drift
2. Glacial cycles
Select the correct answer using the code given below.
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Q 54. Variations in the length of daytime and night-time from season to season are due to?
(a) The earth's rotation on its axis
(b) The earth's revolution round the sun in an elliptical manner
(c) Latitudinal position of the place
(d) Revolution of the earth on a titled axis

Q 55. On the planet earth, most of the freshwater exists as ice caps and glaciers. Out of the remaining freshwater, the largest proportion?
(a) Is found in atmosphere as moisture and clouds
(b) Is found in freshwater lakes and rivers
(c) Exists as groundwater
(d) Exists as soil moisture

Q 56. Consider the following:
1. Electromagnetic radiation
2. Geothermal energy
3. Gravitational force
4. Plate movements
5. Rotation of the earth
6. Revolution of the earth
Which of the above are responsible for bringing dynamic changes on the surface of the earth?
(a) 1, 2, 3, and 4 only (b) 1, 3, 5 and 6 only
(c) 2, 4, 5, and 6 only (d) 1, 2, 3, 4, 5, and 6

Q 57. Consider the following statements with respect to Earthquake Waves?
P-waves are body waves and are more destructive than surface waves.
P-waves travel only through solid medium whereas S-waves can travel through both solid and liquid medium.

Which of the statement(s) given above is/are correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Q 58. Consider the following statements with respect to Volcanoes?
Volcanoes occur only where ocean crust collides with continental crust.
Shield volcanoes are mostly made up of basalt, a type of lava that is very fluid when erupted
Which of the statement(s) given above is/are correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Q 59. Consider the following statements with respect to Intrusive Volcanic Landforms?
Batholiths are formed due to the solidification of hot magma inside the earth's crust.
Dykes are almost perpendicular to the earth's crust, are commonly found in the western Maharashtra region.
Which of the statement(s) given above is/are correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Q 60. The 2004 Tsunami made people realize that mangroves can serve as a reliable safety hedge against coastal calamities. How do mangroves function as a safety hedge?
(a) The mangrove swamps separate the human settlement from the sea by a wide zone in which people neither live nor venture out
(b) The mangroves provide both food and medicines which people are in need of after any natural disaster
(c) The mangrove trees are tall with dense canopies and serve as an excellent shelter during a cyclone or tsunami
(d) The mangrove trees do not get uprooted by storms and tides because of their extensive roots