Academic Achievement Test
Physical Geography

Standard : VII  Duration: 1½ hours  Total Marks : 50 Marks

I. Fill in the blanks :  
1. During the volcanic eruption _____________ gushes out of the Earth.
2. If a water body is deep and vast, then it is called as a _____________
3. The ocean that lies south of India are known as _____________
4. Lithosphere is divided into _____________ continents.
5. We get air from _____________ that envelops the earth.
6. Whenever Land, water and air exist together there, _____________ originate and survive
7. Sun rays consist of _____________ rays which are harmful to all living beings.
8. Atmosphere is held due to _____________ force.
9. The visible sun rays consist of _____________ colours.
10. The belt lying between 5°n to 5°s of the earth is known to be _____________.

II. Choose the best answer :  
1. The earth consists of following % of water
   (a) 76%  (b) 75%  (c) 70%  (d) 71%
2. Sun is called a ball of
   (a) gas  (b) water  (c) fire  (d) light
3. A major portion of the earth surface, shown in the atlas by the colour of
   (a) red  (b) blue  (c) green  (d) brown
4. The land surface of the earth is called
   (a) lithosphere  (b) hydrosphere  (c) biosphere  (d) atmosphere
5. An extensive elevated landmass with flat top is known as
   (a) plains  (b) island  (c) plateaus  (d) mountains
6. A suitable environment, found on the earth is called as
   (a) blue planet  (b) biosphere  (c) loess  (d) hydrosphere
7. Source of all energy is
   (a) sun   (b) earth   (c) moon   (d) atmosphere
8. The planets and satellites of the solar system get heated by
   (a) earth   (b) sun   (c) universe   (d) light ray
9. The air gets heated through the process of
   (a) conduction   (b) convection   (c) radiation   (d) all
10. The region that lies above 66° latitude in north and south of the earth is known as
    (a) equatorial   (b) tropical   (c) temperate   (d) polar

III. Give the answer in one word: 1×10 = 10
1. What is Nebula?
2. Where is Troposphere?
3. Mention the land features.
4. Why the seawater is salty?
5. Write Lapse rate.
7. What is ‘Magma’?
8. Do you think Ocean currents affect the temperature of the place?
9. Where is ‘Ozone’?
10. Distinguish between ‘Island’ and ‘Peninsula’.

III. Answer all the Questions in short: 2×5 = 10
1. What are the elements of earth?
2. How many divisions are there in land forms?
3. Can we use sea water directly? why?
4. Why do mountaineers carry oxygen cylinder with this?
5. Distinguish between ‘solar radiation’ and ‘terrestrial radiation’.

IV. Write any Two Questions: 5×2 = 10
1. Earth is a biosphere - Explain?
2. How does the atmosphere useful for us?
3. Draw and explain the heat region of the earth?
Scoring key and procedure:

I. Fill in the blanks 1 mark $\times$ 10 items : 10 Marks
II. Choose the best 1 mark $\times$ 10 items : 10 Marks
III. One word answer 1 mark $\times$ 10 items : 10 Marks
IV. Two marks 2 marks $\times$ 5 items : 10 Marks
V. Paragraph 5 marks $\times$ 2 items : 10 Marks

Key:

I. Fill in the blanks:

II. Choose the best:
1. (d) 71%  2. (c) fire  3. (b) blue  4. (a) lithosphere  5. (c). plateaus  6. (b) biosphere
7. (a) sun  8. (b) sun  9. (d) all  10. (d) polar region

III. One Word Answer
1. Nebula is a ball of fire consisting of gases which was considered as a source of origin
   for solar system
2. Troposphere is the lowest layer of atmosphere.
3. Mountains, plateaus, and valleys.
4. The rock minerals and the shells of the organism brought by the rivers mixed with
   seawater which contribute salts to the sea water.
5. 1 degree Celsius for every 165 meters of height.
6. The balance between the heat of solar radiation and terrestrial radiation of the earth.
7. The molten state of rocks in the interior of the earth is called magma.
8. Yes.
9. Ozone is found in the layer of stratosphere.
10. Island is surrounded by water bodies on four sides, whereas peninsula is covered by
    water at three sides, connecting one side with another land mass.
IV. Short answer:
1. Hydrosphere, Atmosphere and lithosphere.
2. The lower layer of atmosphere is called Troposphere.
3. Three. Mountains, Plateaus and plains.
4. No. It is salty.
5. There is less oxygen in higher altitudes.
6. Radiation from the sun known as solar radiation while the radiation from the earth is known as terrestrial radiation.

V. Paragraph
1. Earth consists of land, water, and air, which contribute a suitable environment for the survival of living organisms.
2. Atmosphere provides air, which is necessary for the existence of life. It acts as a blanket by protecting the earth from losing its entire heat. It absorbs ultraviolet rays and protects us.

3. Heat Zones

1. Torrid zone: High temperature and heavy rainfall throughout the year
2. Temperate Zone: Warm temperature and medium rainfall.
3. Humid Zone: Less Temperature in summer and heavy snowfall throughout the year.
Concept formation Test

Based on the test: Dr. M.C. Joshi Professor and Head, Department of psychology, University of Jodhpur.

Instructions:

Five concepts are given against earth problem. You have to find out which one among the given five does not fit with the remaining four. As a matter of fact, each concept is different from others. Despite their distinctiveness some four of them can be put under one broad group or class. You have to underline that one which does not fit in with the remaining form. In the right hand column please give the reason how or why you consider some four on one class. A short definition is given.

The following example will explain the work easily:

Example:

(a) 1. Chair 2. Table 3. Bed 4. Lamp 5. Dog

(b) 1. Japan 2. Delhi 3. China 4. India 5. France


Definition:
1. Dog is a living being and not the rest.
2. Delhi is the capital and the rest are countries.
4. Air 5. Ozone
5. Satellites
6. Planets
7. Atlantic
8. Nitrogen
9. Atmosphere
10. Clouds
11. Troposphere
12. Cloud formation

Scoring Key and procedure:


sun is a star but the rest are planets
Magma is a molten state of rocks but the rest are water bodies
An element of earth but the rest are revolving celestial bodies.
Air is mixture of gases but the rest are living beings.
America is a continent but the rest are great oceans
Atlantic is an ocean but the rest are mountains
Birds are living beings but the rest are non living things
Ozone filters ultra violet and infra red rays but the rest are not so
Stratosphere is a layer of atmosphere but the rest are elements of earth.
Ozone is a gas but the rest are forms of water.
biosphere is a combined form of elements of earth but the rest are layers of atmosphere.
insolation solar radiation but the rest are forms of water
radiation is a process of heat transmission but the rest are different type of sun rays.
Pollution is a process of degrading the environment, but the rest are processes of heat transmission
Coastal region is related with warm climate but the rest are having extreme climates
Equator is an imaginary line halving the earth but the rest are land form features.
Ooty is a hill area but the rest are located in the plain
Ocean is a large sea. But the rest are based on winds
Agriculture is a process of producing crops. But the rest are elements of climate.
poverty is a status of poor economy. However, the rest are Poor Environmental conditions.
Logical Reasoning Test

This tool is prepared by the researcher, on the basis of the standardized tool made by Dr. Sadha Bhatnagar APRC: 1985.

Name : Age : Year :
Month : Date :

Instructions :

Instruction :
By the help of this test, we like to assess your ability. You have only 30 minutes time for the completion of this test. So please try to give answer, attentively and quickly. Every question has several possible answers, which have been given along with the question. You have to find out the correct answer, out of several alternative answers.

Questions :

1. If three cloths dry up in 2 hours, how much time will it take for 9 cloths to get dry up.
   (a) 2 hours (b) 6 hours (c) 4 hours (d) 3 hours
   The correct answer of this question is 2 hours. So please put tick mark (√) in the brackets. Now start ...

1. The earth surface comprises of land and water. If land occupies 29% of the earth surface, what % will be the water?
   (a) 50 (b) 75 (c) 71 (d) 21

2. The low lying areas are filled with water in rainy season. If they are small water bodies, then they are known as ponds and lakes. If they are large, then they will be called as
   (a) lake (b) river (c) ocean (d) canal

3. Atmosphere envelops the earth. Hence it covers
   (a) land and water surface (b) satellites
   (c) universe (d) planets

4. If atmosphere is responsible for climatic differences, will it cause
   (a) gravitational (b) magma (c) eclipses (d) rainfall

5. Land, water and air interact with one another to form biosphere. If rainfall sometimes, absent, the most affected element will be
   (a) mountain (b) river (c) living organisms (d) ponds
6. Planets originated from sun 4600 million years ago, so Earth has its origin from
(a) 2300 million years ago (b) 3400 million years ago (c) 4600 million years ago (d) 5700 million years ago

7. If a piece of burning charcoal is taken out of the oven, a layer of ash becomes to form on the surface. When we remove a layer of ash, we can see the fire inside. If it is Earth, what will be the interior of it? Is it in the state of
(a) molten state (b) gaseous (c) liquid (d) solid

8. If there is no undulations on the earth, the rain water will not form into
(a) water bodies (b) vapour (c) ice (d) cloud

9. Mountains are found on the outer layer of the earth. Hence Himalayas are found on the
(a) interior of the earth (b) earth crust (c) volcano (d) valleys

10. Ponds and lakes dry in summer. Seas never dry up. Because
(a) deep and short waves (b) salty (c) vast and long waves (d) temperature is not enough to evaporate large quantity of water.

11. If water is shown by blue colour in the atlas, hydrosphere will be shown in the atlas by
(a) green colour (b) brown colour (c) blue colour (d) yellow colour

12. If island is a small landmass, surrounded by water on all sides, what would be Sri Lanka?
(a) continent (b) island (c) plateau (d) mountain

13. Highly elevated landform with high peaks is called as a mountain, when these mountains are continuous, they are
(a) mountain ranges (b) Hill (c) Plateaus (d) valleys

14. All elevated lands are classified into mountains and plateaus. The difference between them is based on the
(a) shape of the top (b) soil (c) rock (d) minerals

15. Plains are formed by deposits. Wind deposits are called
(a) alluvium (b) loess (c) coastal plain (d) moraines

16. When the wind blows, trees move, and the lighter materials are also blown away. When the air does not blow we perspire. From these, we can understand that
(a) air exists everywhere (b) air exists in some places (c) air does not move (d) air moves at times
17. Air is present everywhere on land and sea which means
(a) the atmosphere encircles the earth
(b) the atmosphere is in the interior of the earth
(c) the atmosphere is only on land
(d) the atmosphere is only on sea

18. Wherever land, water and air exist together, life exists. If there is no land, which of the following cannot live?
(a) plants  (b) animals  (c) man
(d) living organisms

19. If there is no atmosphere, we can get air from
(a) fan  (b) none  (c) land  (d) water

20. If mountaineers do not carry oxygen cylinders, while climbing the mountain peaks beyond 5 kilometres, they cannot breathe due to
(a) low density  (b) height of the mountain
(c) slope of the mountain  (d) dust and cloud

21. Atmosphere acts like a blanket. If there is no atmosphere on the earth, the earth will be
(a) either too hot or too cold  (b) neither too hot nor too cold
(c) never become hot  (d) never become cold

22. Ultra violet rays of the sun are harmful to all living beings. But living beings are protected by the presence of
(a) hydrosphere  (b) lithosphere  (c) atmosphere  (d) biosphere

23. If atmosphere is absent, we will not get at first
(a) favorable climate  (b) animals  (c) planets  (d) rainfall

24. By consuming plants, human beings get their nitrogen requirements because nitrogen is needed for the formation of
(a) proteins  (b) facts  (c) clouds  (d) water vapour

25. Carbon-di-oxide constitutes 0.033% of the air. If it increases, it will cause
(a) rainfall  (b) pollution  (c) photosynthesis
(d) damage to human skin

26. Water vapour is significant for making the Earth into Biosphere. Because it is a source of
(a) origin of organism  (b) growth of plants  (c) rainfall  (d) atmosphere
27. All particles on the earth are attracted towards the Earth. It is due to
(a) revolution of the earth  (b) rotation of the earth
(c) wind  (d) gravitational force

28. We live on the crust of the earth, which is covered by the lowest layer of the atmosphere, called
(a) lithosphere  (b) troposphere  (c) hydrosphere  (d) biosphere

29. Troposphere contains more water vapour, which is the means for the formation of
(a) clouds  (b) mountains  (c) atmosphere  (d) sunlight

30. Chennai is located at the sea level. Ooty is located at a height of 2000 meters above sea level. The average temperature of Ooty is 12°C lower than that of Chennai. It is due to the fact that
(a) Ooty is a summer resort  (b) Chennai in at coastal region
(c) the temperature decreases at the rate of 1°C for every 165 meters of height.  (d) Chennai has got more pollution

31. Clouds are almost absent in stratosphere and hence Jet planes prefer to fly in this layer of the atmosphere. The reason behind the absence to clouds is
(a) less water vapour  (b) more Ozone gas
(c) presence of ultra violet rays  (d) stratosphere is the highest layer

32. Heat is needed to raise the temperature of air. The source of heat is
(a) solar radiation  (b) terrestrial radiation
(c) convection  (d) conduction

33. The temperature of the surface of the sun is 6000°C. Even the iron gets melted at 1100°C temperature. But we do not melt. The reason behind it is
(a) 1/5 billion rays reaches the earth  (b) we are more harder than iron
(c) man can absorbs any degree of temperature  (d) earth absorbs all temperature

34. There is a vacuum between exosphere and sun. but sunlight passes through the vacuum to the earth by the process of
(a) conduction  (b) convection
(c) radiation  (d) latent heat of water

35. Rainfall is the result of cloud formation which is formed by water vapour. Through which process, water becomes water vapour?
(a) precipitation  (b) condensation  (c) evaporation  (d) conduction
36. Equatorial region is very hot due to the reason of
   (a) equator  (b) vertical solar radiation
   (c) far away from polar region  (d) extensive area of land

37. Man experiences hot summer and warm winter. Hence he lives in
   (a) equatorial region  (b) tropical region
   (c) temperature region  (d) polar region

38. If the temperature of a region is high above polar region but below the tropical region,
    then that region is located in
   (a) temperature zone  (b) tropical zone
   (c) polar zone  (d) equatorial zone

39. Tropical zone lies between the lines of
   (a) cancer and Capricorn  (b) Capricorn and equator
   (c) equator and cancer  (d) cancer and 66½° north latitude

40. It is a duty of every one to save the following from pollution
    (a) stratosphere  (b) biosphere
    (c) universe  (d) satellites.

**Scoring Key**

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Styles of thinking Test
SOLAT

Name :  Age :  Sex :
Class :  School :  Date :

Directions

Please read the following statements carefully. Each statement has two parts ‘a’ and ‘b’, followed by boxes in the end. Put a tick mark in the box whichever statement is true for you. You may tick both the statements in a pair if both are true for you or you may leave both the statements if none of them are true for you.

(NOTE: LEAVE BOTH STATEMENTS BLANK ONLY IF IT IS IMPOSSIBLE FOR YOU TO DECIDE)

1. When I think about a matter I think about it as a whole unit.  
   When I think about a matter I think it in segments and its merits and demerits
2. I can remember my friends through faces rather than their names.  
   I can remember my friends through names rather than their faces.
3. I can remember and recall shapes and figures.  
   I can remember and recall languages and numerical figures.
4. I can identity a person through his voice.  
   I can identity a person through his speech.
5. I can organise and express the ideas with examples.  
   I can organise and express in a sequence as they occur.
6. I can find out theory through facts and examples.  
   I can find out facts through theory.
7. I like to solve problem through independent thinking.  
   I like to solve problem with the opinion of others.
8. I think deep while leaning down.  
   I think deep while sitting erect.
9. I can easily find out directions even in unfamiliar places  
   I can easily find out directions only in familiar places.
10. I like to guess results.  
    I am not interested in guessing results.
11. I think creatively to solve problems.  
   I think intellectually to solve problems.

12. I like to pre-plan things which I have to do.  
   I like to day-dream things which I have to do.

13. I like to solve problems by analysing the reasons through internal feelings.  
   I like to solve problems by analysing the reasons through intelligence.

14. I judge things through experience and internal inspirations or feelings.  
   I judge things through logical reasons.

15. I like to solve problems in a playful way.  
   I like to solve problems in a business like approach.

16. I forget things which I have to do.  
   I never forget things which I have to do.

17. I hope that everything will be all right.  
   I feel that everything will be a failure.

18. I do not have the nature of publishing others, when things go bad for me.  
   I have the nature of publishing others, when things go bad for me.

19. I am always peaceful even when facing problems.  
   I get aggressive and angry easily when facing problems.

20. I have strong determination and ambition to be successful in every matter.  
   I hope or feel to be successful in every matter.

21. I have strong memory and remembrance for images and pictures.  
   I have strong memory and remembrance for voices.

22. I can do things by imagination.  
   I can do things after knowing and analysing.

23. I have the ability to tell the characteristic of an object by touching.  
   I have no ability to tell the characteristic of an object by touching.

24. I can imagine and summarise matters.  
   I can give outline of matters.

25. I can imagine incidents occurred in the past.  
   I can analyse details of incidents occurred in the past.
FOR OFFICIAL USE ONLY

SOLAT SCORES

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a) R Scores  
b) L Scores  
Both W Scores  
Give one mark to one statement

HEMISPHERECITY  
(Brain Dominance)
Awareness to Nature of Knowledge

The investigator has framed the tool for assessing the nature of knowledge of the students. The tool consists of 20 items which include the following characteristics of knowledge:

1. 1-5 items require the students to recall factual knowledge on the content.
2. 6-8 items require the students to think more broadly to show in-depth understanding and to explain using students’ own words; grouping the meaning of information.
3. 9-11 items require the students to apply learning to a new situation and to develop ideas or a product.
4. 12-14 items require the students to develop divergent conclusions by identifying causes, making inferences and finding evidences to support generalisations.
5. 15-17 items require the students to write/produce new ideas, methods or procedure to go beyond present knowledge.
6. 18-20 items require the students to give judgments to ideas according to an explicit and detailed set of reasons.

Awareness to Nature of Knowledge Test

Time: 1½ hours

Total marks: 30

Part I

Answer the following in one sentences:

10×1=10 marks

1. Identify three elements of earth from globe.
2. Name the major physical features of the lithosphere.
3. Which is the major source of all energy.
4. Give an example for a deep and vast water body of the world.
5. ‘Living organisms cannot live without Biosphere. Can man live with biosphere?’
7. Differentiate vertical distribution of temperature and horizontal distribution of temperature in a single statement
8. How will you protect your environment from the damages caused by ultra violet rays. Write any one of the activities?
9. ‘Biosphere is the house of living things’ Justify this statement in one sentence
10. Government encourages to grow trees in our environment. List out any one of the reasons.
Part II
Answer the following in two sentences

11. Define equatorial region.

12. State the meaning of solar radiation?

13. ‘Water vapour is the main cause for the formation of clouds’. What are the two main causes for the formation of water vapour?

14. What would happen if there is no carban-di-oxide in the atmosphere? State any two consequences.

15. The average day temperature of Chennai is 30°C. what would be day temperature of Ooty at the same day? (Apply lapse rate formula)

16. Draw the temperature zones of the world and name them.

17. Write a similarity in one word between the concepts ‘conduction’ and ‘convection’ and mention one difference in one word between them.

18. Write any two activities to conserve water.

19. Explain the significance of Troposphere?

20. Does the sun exist as the chief source of all our activities? Mention ‘Yes’ or ‘No’ and give any two reasons for your answer.

Scoring key and procedure for Awareness to Nature of Knowledge:

Part I

1. Lithosphere, Atmosphere, Hydrosphere.

2. Mountain, plateau, and valley.

3. Sun

4. Pacific ocean or Atlantic ocean or Indian ocean

5. No

6. The process of radiation from sun is called solar radiation whereas the radiation from the earth is called terrestrial radiation.

7. The difference between the temperature of layers of Atmosphere is known as vertical distribution. The difference between the temperature of various places is called as horizontal distribution of temperature.

8. Afforestation

9. Air, water, and land are essential to live and survive for living things. Bio sphere consists of troposphere, hydrosphere and lithosphere. Hence biosphere is the house of living things.

10. Afforestation to get more rain fall.
Part II

11. Between 5 degree north and 5 degree south of equator in the world is called equatorial region. It is found to be high temperature and heavy rain fall through out the year.

12. The process of radiating the solar energy from sun is called solar radiation. Short waves of Solar rays bring intense heat to the earth but not heating atmosphere.


14. 1) CO₂ retains heat and thus gives green house effect to earth.
    2) It helps for photosynthesis.

15. 1 degree Celsius = 165 meter

16. **Heat Zones**

   ![Diagram of Heat Zones](image)

   1. Torrid zone : High temperature and heavy rainfall throughout the year
   2. Temperate Zone : Warm temperature and medium rainfall.
   3. Humid Zone : Less Temperature in summer and heavy snowfall throughout the year.

17. Conduction and convection are the processes of heat transmission. Conduction takes place faster in solids while convection transmits heat fastly in liquids and gases.

18. Planting trees and constructing dams through water management.

19. All significant climatic changes take place in Troposphere. The life and lifestyle of people depends mostly Troposphere.

20. Yes. Sun is the chief source of light and heat. It causes evaporation, rainfall and thereby Production of crops.
Sensitivity to language

Description of the Tool

The investigator has prepared a tool to measure students’ magnitude towards ‘sensitivity to language’. The tool consists of 20 items, replacing five specific points of view in four concepts. 1. Meanings of the terms, 2. Items of reference, 3. Items of difference, 4. Coinage of new terms to substitute the existing terms, 5. Usage and applicability of the terms of particular concept are taken into consideration as specific points. This tool gives scope to determine whether the student knows the correct meanings of some technical terms which often spelt in content, and to predict the size of their total vocabulary. Items of reference and difference in the tool determine the students’ ability to organise facts into meaningful and coherent structure of words. Coinage of new terms and applicability of terms indicate the creativity and students’ level of social understanding respectively, which are responsible for any language development.

It is presumed that the students at the age of 11 plus are able to think of ideas with related sentences together and not of single words. Their answer will constitute both their concept attainment and their magnitude towards sensitivity to language.

The use of words and sentences in the original text is not insisted in the tool, in order to show evidences of their ability to write in their own vocabulary based on listening, reading and comprehensing, the curriculum materials.

Scoring procedure

Equal weightage is given to each component and each item of each component. Twenty items carry 20 marks in which each item carries one mark.
Sensitivity to language

Time: 1 hour

Write answer in your own words for the following questions

20×1=20 marks

1. What does the term ‘Biosphere’ mean?
2. List out any two terms which are closely related to the term ‘Biosphere’.
3. Bring out the difference between the terms ‘Biosphere’ and ‘Atmosphere’ in a single sentence.
5. Quote any one of the circumstances, when you used the term ‘Biosphere’.
6. What does the term ‘ozone’ mean?
7. List out any two terms which are closely related to the term ‘ozone’.
8. Bring out the difference between the terms ‘ozone’ and ‘oxygen’ in a single sentence.
10. Quote any one of the circumstances, when you used the term ‘ozone’.
11. What does the term ‘Radiation’ mean?
12. List out any two terms which are closely related to the term ‘Radiation’.
13. Bring out the difference between the terms ‘Radiation’ and ‘convection’ in a single sentence.
15. Quote any one of the circumstances, when you used the term ‘Radiation’.
16. What does the term ‘pollution’ mean?
17. List out any two terms which are closely related to the term ‘pollution’.
18. Bring out the difference between the terms ‘pollution’ and ‘protection’ in a single sentence.
20. Quote any one of the circumstances, when you used the term ‘pollution’.
Scoring Key

One mark should be given to each question

1. The earth which unites hydrosphere Lithosphere and Atmosphere gives plays for the survival of all living beings.
2. Forests : Animal Kingdom
3. Biosphere is connected with living things where as atmosphere is related to air and climatic factors
4. Living planet
5. Pollution
6. O3 which is found in atmosphere
7. Stratosphere, filter for harmful sun rays
8. O3, O2
9. Protecting gas
10. Pollution, conservation of environment
11. The process of transmitting the heat through rays
12. Solar radiation and terrestrial radiation
13. Radiation is a process of transmitting heat without heating the medium where as convection is a process of transmitting the heat through air and liquids
14. Waves
15. Insoaltion
16. Degrading the environment
17. Land, Air and Water Pollution
18. Pollution is the degrading the environment whereas protection is conserving the environment
19. Decorticating the biosphere
20. Carbon-di-oxide, Smoke
DIRECTIONS AND EXAMPLES

(Read the Directions and Examples silently while I read them aloud)

1. There are 78 questions in order from the easiest to the hardest. After each question, there are four alternative answers.

2. There is only one right answer. When you find out the right answer, just put a cross mark (x) on the Answer Sheet against the appropriate number provided.

3. Now practise the solved examples given as how to solve and mark your responses. (Practice: 1 to 9 one by one).

4. You may clarify your doubts, if there be any. (Clarified).

5. Open your Booklet at page two. (Opened).

Try every problem one by one, starting from the first to the last.

READY AND START.
PRACTICE EXAMPLES

Practise these solved examples and learn how to solve and put your responses in your answer sheet.

1. Solve and find out the correct answer:

   \[ \text{50 liter} : \text{50 liter} = \_ \text{liter} \]

   - 1. 300
   - 2. 350
   - 3. 400
   - 4. 250

2. Which of the four drawings fits in the incomplete pattern?

   ![Pattern](image)

   - 1. [Drawing 1]
   - 2. [Drawing 2]
   - 3. [Drawing 3]
   - 4. [Drawing 4]

3. Select the one which does not belong to the others:

   ![Tools](image)

   - 1. [Tool 1]
   - 2. [Tool 2]
   - 3. [Tool 3]
   - 4. [Tool 4]

4. Select the correct analogous pictures as the first one:

   ![Analogies](image)

   - 1. [Analogy 1]
   - 2. [Analogy 2]
   - 3. [Analogy 3]
   - 4. [Analogy 4]

5. Which star has the number of dots equal to the parts in the circle?

   ![Stars](image)

   - 1. [Star 1]
   - 2. [Star 2]
   - 3. [Star 3]
   - 4. [Star 4]

6. Select the best synonym with the first one:

   ![Synonyms](image)

   - 1. [Synonym 1]
   - 2. [Synonym 2]
   - 3. [Synonym 3]
   - 4. [Synonym 4]

7. Select the right one which is opposite to the first one:

   ![Opposites](image)

   - 1. [Opposite 1]
   - 2. [Opposite 2]
   - 3. [Opposite 3]
   - 4. [Opposite 4]

8. Select one pair which is most similar in nature:

   ![Pairs](image)

   - 1. [Pair 1]
   - 2. [Pair 2]
   - 3. [Pair 3]
   - 4. [Pair 4]

9. Complete the picture with the most appropriate part:

   ![Complete](image)

   - 1. [Part 1]
   - 2. [Part 2]
   - 3. [Part 3]
   - 4. [Part 4]
Test Sheet

1. Solve and find out the correct answer:

\[ \text{Bottle} = 90 \text{ liters} : \text{Bottle} = \quad \text{? liters} \]

1. 35
2. 40
3. 45
4. 50

2. Which one of the four drawings correctly fits in the incomplete pattern?

\[ \text{Pattern} : \quad 1. \Box \quad 2. \Box \quad 3. \Box \quad 4. \Box \]

3. Select the one which does not belong to others:

1. Apple
2. Pear
3. Cucumber
4. Brain

4. Select the correct analogous picture as the first one:

\[ \text{Umbrella} \rightarrow \text{Rain} \rightarrow 1. \text{Shoe} \rightarrow 2. \text{Man} \rightarrow 3. \text{Bird} \rightarrow 4. \text{Cow} \]

5. Which flower has corolla equal to the points in the circle?

\[ \text{Pattern} : \quad 1. \quad 2. \quad 3. \quad 4. \]

6. Select the best synonym with the first one:

\[ \text{Pattern} : \quad 1. \quad 2. \quad 3. \quad 4. \]
7. Select the right one which is opposite to the first one:

8. Select the pair which is most similar in nature:

9. Complete the picture with the most appropriate part:

10. Solve the question and find out the correct answer:

   \[ Y = 15 \]
   \[ F = 20 \]
   \[ G = 10 \]
   \[ H = Y + G \]
   \[ H = \underline{\quad} \]

   1. 35
   2. 20
   3. 30
   4. 25

11. Which of the four drawings correctly fits in the incomplete pattern?

12. Select the one which does not belong to the others:
13. Select the correct analogous (parallel) picture as the first one:

14. Which basket has the number of arrows less than the parts in the circle:

15. Select the best synonym with the first one:

16. Select the one which is opposite to the first one:

17. Select one pair which is most similar in nature:

18. Complete the picture with the most appropriate part:
19. Solve the question and find out the correct answer:

\[
\begin{array}{c}
\text{50} \\
\text{50} \\
\text{50} \\
\text{50} \\
\end{array}
\begin{array}{c}
\text{=} \\
\text{=} \\
\text{=} \\
\text{=} \\
\end{array}
\begin{array}{c}
\text{150} \\
\text{2} \\
\text{140} \\
\text{3} \\
\text{160} \\
\text{4} \\
\text{155} \\
\end{array}
\]

20. Which one of the four drawings correctly fits in the incomplete pattern?

21. Select the one which does not belong to the others:

1. 2. 3. 4.

22. Select the correct analogous picture as the first one:

1. 2. 3. 4.

23. Which wall has the number of parts equal to the parts in the circle?

1. 2. 3. 4.

24. Select the best synonym with the first one:

1. 2. 3. 4.
25. Select the right one which is opposite to the first one:

![Images of different objects]

1. 2. 3. 4.

26. Select one pair which is most similar in nature:

1. 2. 3. 4.

27. Complete the picture with the most appropriate part:

![Images of a picture with different options]

28. Solve the question and find out the correct answer:

![Images of different symbols and numbers]

1. 243
2. 240
3. 241
4. 242

29. Which one of the four drawings fits in the incomplete pattern?

![Images of different drawings]

1. 2. 3. 4.

30. Select the one which does not belong to the others:

![Images of different objects]

1. 2. 3. 4.
31. Select the correct analogous picture as the first one:

![Analogous Pictures]

32. Solve the question and find out the correct answer:

$$\text{[Book, Book, Book]} = \text{Rs. 1200} : \quad \text{[Book]} = \text{Rs?}$$

1. 400
2. 450
3. 410
4. 350

33. Which one of the four drawings fits in the incomplete pattern correctly?

![Incomplete Pattern]

1. 2. 3. 4.

34. Select the one which does not belong to the others:

1. 2. 3. 4. 5. 6. 7. 8.

35. Select the correct analogous picture as the first one:

![Analogous Pictures]

36. Which wheel has number of spokes equal to the points in the circle?
37. Select the best synonym with the first one:

- Airplane
- Rocket
- Ship
- Car
- Camel

38. Select the right one which is opposite to the first one:

- Bird
- Leaf
- Bone
- Horse
- Arm

39. Select one pair which is most similar in nature:

- Book:
  - TV
  - Hat
  - Chair
  - Axe

40. Complete the picture with the most appropriate part:

- Round
- Square
- Triangle
- Circle
- Diamond

41. Solve the question and find out the correct answer:

\[
\begin{align*}
P &= 12 \\
M &= P - N \\
N &= 10
\end{align*}
\]

1. 4
2. 2
3. 3
4. 6

42. Which of the four drawings correctly fits in the incomplete pattern?

- Square
- Triangle
- Circle
- Diamond
- Rectangle
43. Select the one which does not belong to others:

1. 
2. 
3. 
4. 

44. Select the correct analogous picture as the first one:

1. 
2. 
3. 
4. 

45. Which bundle has the number of sticks equal to the parts in the circle?

1. 
2. 
3. 
4. 

46. Select the best synonym to the first one:

1. 
2. 
3. 
4. 

47. Select the right one which is opposite to the first one:

1. 
2. 
3. 
4. 

48. Select one pair which is the most similar in nature:

1. 
2. 
3. 
4.
49. Complete the picture with the most appropriate part:

```
1. X  2. O  
3. O  4. O
```

50. Solve the question and find out the correct answer:

```
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>D</td>
</tr>
</tbody>
</table>
```

= 240  B = 60  :  A, C, D = _______?

1. 170  2. 180  3. 190  4. 160

51. Which of the four drawings correctly fits in the incomplete pattern?

```
:  1.  2.  3.  4.
```

52. Select the one which does not belong to others:

```
1.  2.  3.  4.
```

53. Select the correct analogous picture as the first one:

```
Sun →  Moon →  Palm Tree →  Banana →  Apple →  Chili Pepper
```

54. Which land has the number of trees more than the dots in the circle?

```
:  1.  2.  3.  4.
```
55. Select the best synonym with the first one:

1. 
2. 
3. 
4. 

56. Solve the problem and find out the correct answer:

\[
\begin{array}{|c|c|c|c|c|c|c|c|}
\hline
& & & & & & & \\
\hline
\square &= 25 \text{ kgs} \quad = \quad \square \quad \text{kgs.} \text{?} \\
\hline
1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\
\hline
\end{array}
\]

1. 235
2. 230
3. 255
4. 225

57. Which of the four drawings correctly fits in the incomplete pattern?

1.
2.
3.
4.

58. Select the one which does not belong to the others:

1. 
2. 
3. 
4. 

59. Select the correct analogous picture as the first one:

1. 
2. 
3. 
4. 

60. Which plate has the number of sweets equal to the dots in the circle?

1. 
2. 
3. 
4.
61. Select the best synonym with the first one:

1. 2. 3. 4.

62. Select the right one which is opposite to the first one:

1. 2. 3. 4.

63. Select the pair which is most similar in nature:

1. 2. 3. 4.

64. Solve the question and find out the correct answer:

\[
\begin{align*}
30 &= W \\
40 &= L
\end{align*}
\]

\[
W \times L = \underline{\phantom{000}}
\]

1. 1200 2. 1240 3. 1300 4. 1050

65. Which of the four drawings fits in the incomplete pattern correctly?

1. 2. 3. 4.

66. Select the one which does not belong to the others:

1. 2. 3. 4.
67. Select the correct analogous picture as the first one:

68. Which shirt has the number of lines equal to the lines in the circle?

69. Select the best synonym with the first one:

70. Select the right one which is opposite to the first one:

71. Select the pair which is most similar in nature:

72. Complete the picture with the most appropriate part:
73. Solve the problem and find out the correct answer:

\[
\begin{align*}
\text{\textbullet\textbullet\textbullet} & = 4 \text{ dots} : \\
\text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} & \quad ?
\end{align*}
\]

1. 30
2. 32
3. 34
4. 36

74. Which of the four drawings correctly fits in the incomplete pattern?

\[
\begin{align*}
1. & \quad \text{\textbullet\textbullet\textbullet} \\
2. & \quad \text{\textbullet\textbullet\textbullet\textbullet} \\
3. & \quad \text{\textbullet\textbullet\textbullet\textbullet\textbullet} \\
4. & \quad \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet}
\end{align*}
\]

75. Select one which does not belong to the others:

\[
\begin{align*}
1. & \quad \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \\
2. & \quad \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \\
3. & \quad \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \\
4. & \quad \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet}
\end{align*}
\]

76. Select the correct analogous picture as the first one:

\[
\begin{align*}
\text{Tea} \rightarrow \text{Mug} : \\
\text{Table} \rightarrow \text{Chair} \\
\text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \\
\text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet}
\end{align*}
\]

77. Which ball has number of parts equal to the parts in the circle?

\[
\begin{align*}
1. & \quad \text{\textbullet\textbullet\textbullet\textbullet} \\
2. & \quad \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \\
3. & \quad \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \\
4. & \quad \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet}\n\end{align*}
\]

78. Select the best synonym with the first one:

\[
\begin{align*}
\text{House} \rightarrow \text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \\
\text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \\
\text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \\
\text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet}
\end{align*}
\]
A Lesson Plan for Seventh Standard Geography, based on Inductive thinking model.

Lesson - 1

Model Lesson Plan - Inductive Thinking Model

Subject: Physical Geography
Class :VII  Topic: Elements of Earth
Concept: Earth as Biosphere

Expected outcomes / behavioral:

Upon successful completion of this lesson, the students will be able to

1. Identify the different elements of earth.
2. Acquire information from observation of local environment, pictures and videoclippings.
3. Organise information to make, categories and label their observations in a table.
4. Identity the critical relationship between the elements of the earth.
5. Explore relationship between elements of earth and Biosphere.
6. Infer the existence of Biosphere.
7. Predict the consequences of non existences of elements of earth.
8. Determine to conserve the environment which is free from pollution for the healthy existence of living being.
<table>
<thead>
<tr>
<th>Strategy</th>
<th>Content</th>
<th>Methodology</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concept formation.</td>
<td>Earth consists of land, water and air. They interact with each other to create a suitable environment for the origin and survival of the living beings.</td>
<td>Activity I: The students will be asked to observe the pictures on feathers of earth and its their names individually. Each student should write at least 3 names of countries/oceans ... The teacher writes them on the blackboard. [Individual student lists different features of what they saw in the pictures].</td>
<td></td>
</tr>
<tr>
<td>Enumeration of listing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grouping</td>
<td>There are 3 elements of earth</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Lithosphere</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Atmosphere</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Hydrosphere</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Categorizing and labelling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpretation of data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity II</td>
<td>The teacher writes some data on the blackboard.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Name</td>
<td>area/sq.km</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Asia</td>
<td>43998000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pacific Ocean</td>
<td>166,241,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indian</td>
<td>734,270,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Africa</td>
<td>298,000,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N. America</td>
<td>215,100,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Atlantic</td>
<td>865,570,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indian Ocean</td>
<td>734,270,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Australia</td>
<td>969,955,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Europe</td>
<td>969,955,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arctic</td>
<td>948,500,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Antarctica</td>
<td>13,600,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Troposphere</td>
<td>10 km</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[The students will be asked to classify them into continents and Oceans.]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 2</td>
<td>Teacher: Do any of the above items seem to belong to these 3 groups?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tosetho? Students are asked to develop and label their groupings.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teacher: Do you find any common characteristics of items grouped.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Brainstorming the students)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 3</td>
<td>The students are grouped into any number of groups. Each group is asked to categories the features and label them.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. How elements of earth is contributes for treble production.</td>
</tr>
</tbody>
</table>
| Identifying then critical relationship | Activity 4  
Teacher interacts with students about the through atlas, features found in continent of oceans are to be explained. Teacher explains the uses of the elements of earth in the daily activities of man. Extent and area of continent and ocean on the earth. | What are the basic classification of features of earth? The students are expected to say land, water & air |
| Exploring relationships | Activity 5  
Teacher: can any one of you, summarize the elements of earth?  
By showing the activities of agriculture through pictures. Teacher asks the students how far these elements are useful for agriculture production. All the three elements are interlinked with one another few the production. | |
| Making inferences | Activity: 6  
Showing the globe, students are asked to expose the blue coloured portion. The hydrosphere, ponds, lakes, seas, rivers and oceans on the earth teacher. Where do you get so much of water to fill 71% of the earth surface?  
Student:  
No, answer.  
Teacher:  
Do you know which atoms combine to form water?  
Student:  
Teacher:  
When the earth originated, the hot gases which surrounded the earth cooled and formed the clouds to give rainfall. The rain water filled low lying areas to form lakes, ponds oceans of rivers. The land surface, comparing 7 continents from lithosphere.  
Teacher:  
Can we live without breath?  
Student:  
By air.  
Teacher: | |
Where do we get air?

Student: From our surrounding.

Teacher: The air which envelopes the earth is called Atmosphere.

Teacher: Asks questions to elicit inferences

Teacher: Do you think the elements of earth are necessary for our life?

Student: Yes

Teacher: How did you find it?

Student: Without land, water, air, plants cannot live

Teacher: Can you without land, water, air

Student: No

Teacher: What makes you to think like this?

Student: I cannot live without house. The house is build on land. I cannot live without air because I have to breath. I cannot live without water because I have to drink

Teacher: Do you know a person requires about 150 to 250 liters of water everyday for drinking 3 to 5 liters for cooking; 20 liters for bathing; 50 liters for personal hygiene; 40 for laundry 60 liters

Can you understand; 71% of the earth, the water is essential for us only the earth provides land, water, and air. Which are essential for life of living beings that is why the earth is called as biosphere.

Teacher: Is it appropriate to call earth as biosphere? If it is so, what can you do?

Student: We should watch the earth safer.
| Practicing the consequences explaining Unfamiliar Phenomena | **Teacher**: What would happen if the earth is without water?  
**Student**: It will become desert  
**Teacher**: What would happen if there is land without air and water?  
| Application of principles | Plants cannot grow without oxygen, and carbon-di-oxide without plants there will be no rain fall there will be no life of man, animals, plants.  
| Hypothesing | Teacher explaining that the world’s population is sizes grow at the present rate, we must think about conversation.  
| Explaining/Supporting the predictions and hypothesis. | In 1995 out of 5-7 billion people, 92% had access to sufficient water? In 2025 with 9.4 billion people will not have access to fresh water. If we do not think over this we will be like a sailor, who moaned and water every where but no drop of water to drink. |