

Assignment: FA

SUBJECT: ENGLISH

RAIN IN SUMMER

Summary: The poem "Rain in Summer" has been penned down by Henry Wadsworth Longfellow. The poet describes the beauty of the rain by comparing it with the dust and heat that rises up from broad and narrow lanes.

The rain bounces off the roofs and the sound of the raindrops is similar to the hoofs of the horses. The rain falls from the sky as if it is freeing from the overflowing clouds in the sky. The gutters, full of muddy rain water look like a river roaring down. The poet feels overjoyed about the rain and welcomes it. The poet talks about an ill man who feels the cool of the rain. The rain calms down his feverish brain.

The school boys are overjoyed to see the rain. They walk down the wet streets and sail their paper boats in the rain water. The poet describes a country scene where the heat has dried the vegetation and it has turned yellow. The field looks like a suitable place for the leopard to hide. The poet further says that the hardworking oxen plough the fields patiently. The oxen seem to offer more thanks than man is able to for the rain.

In the last lines, the poet describes the joy of the peasant as he sees the rain falling and filling up his crops. He doesn't see any kind of sin in being satisfied that the rain has come only for his benefit. The rain brings a promise of gain and prosperity to him.

Q1. What adjectives have been used in the poem to describe the rain?

Ans. The adjectives that have been used to describe the rain are; beautiful, incessant, swift, clattery and gushy.

Q2. The sound and the movement of the rain are brought out by comparisons. Find them in the poem.

Ans. These comparisons bring out the sound and movement of the rain —
'Clatters along the roofs'
'Like the tramp of hoofs'
'Like a river down the gutter roars'.

Q3. How does the plain look before the rain?

Ans. Before the rain, the plain looks dry and yellow resembling a leopard's body.

Q4. How does the farmer react to the rain?

Ans. The farmer sees the rain as a blessing and feels joyful. The rain brings a promise of gain and prosperity to him.

**Q5. And down the wet streets/ sail their mimic fleets,
Till the treacherous pool/ engulfs them in its whirling
And the turbulent ocean.**

a. Who do the mimic fleets belong to?

Ans. The mimic fleets belong to the school children.

b. What is a treacherous pool and why do you think it has been called treacherous?

Ans. Treacherous pool is a pool of rainwater mixed with mud and dirt. It has been called treacherous because the paper boats drown in the water.

**Q6. As they bend their tops
To the numberless beating drops**

a. Who are being referred to as 'they'?

Ans. 'they' refers to farmer's crops.

b. What does the word 'numberless' indicate?

Ans. The word 'numberless' indicates countless drops of the rain.

THE SIGNAL 1

Q1. Who was Semyon Ivanov? How did he get the job of a track-walker?

Ans. Semyon Ivanov was an ex-soldier who had served as an assistant to an army officer and was living in Kursk with his wife. Semyon was travelling in a train when he met the station-master who had been an officer in his regiment. The station-master offered to help him find work and offered him the position of a track-walker.

Q2. What did the job of a track-walker involve? What was its drawback?

Ans. A track-walker went over the track twice a day, examining and tightening up the nuts and water-pipes. The drawback of being a track-walker was that he had to take the inspector's permission in every little thing he wanted to do.

Q3. Why was Vasily angry?

Ans. Vasily was angry because he thought he was underpaid and was fined for growing cabbages without taking permission from the inspector.

Q4. What preparations were done for the inquiry?

Ans. The sleepers were carefully examined, spikes driven in, nuts tightened, posts painted and yellow sand sprinkled at the level crossings in preparation for the inquiry.

Q5. What did Semyon do when the Chief's trolley approached his hut?

Ans. When the Chief's trolley approached Semyon's hut, he ran out and reported in soldierly fashion.

THE SIGNAL 2

Q1. What did Vasily look like when Semyon met him during his rounds? What had happened?

Ans. When Semyon met Vasily during his rounds, Vasily looked very pale and his eyes had a wild look. The Chief had slapped Vasily.

Q2. Where did Semyon collect sticks from, and what did he do with them?

Ans. Semyon collected sticks from a big marsh in the forest at the end of his section. He made flutes out of them.

Q3. Why was Vasily squatting on the line? What was his plan?

Ans. Vasily was squatting on the line to loosen the rail. His plan was that the rail would move to the side when the six o'clock train passed by which would cause a fatal accident to occur.

Q4. Why did Semyon start running towards his hut?

Ans. Semyon started running towards his hut in order to get some tools for 'driving-in' the spikes.

Q5. Which train was due and at what time? What kind of a train was it?

Ans. Train no.7 was due at six o'clock. It was a passenger train.

THE PIED PIPER OF HAMELIN

Summary: The poem 'The Pied Piper of Hamelin' has been composed by Robert Browning. It is long poem about the fantastical tale of a piper who lures away rats and children with his magical pipe.

Five hundred years before, the speaker of the poem and Willie lived in the pleasant town of Hamelin in Brunswick, Germany. The town suffered from a serious rat infestation. The harassed townsfolk appealed to their Mayor for help. It was then that the Piper came to the rescue. He offered to get rid of the rats on the condition that he was paid a thousand guilders. He played his pipe and drew out the pests, and they followed him all the way to the river Weser, where they drowned.

Instead of rewarding the Piper as agreed, the Mayor and the corporation thanked him with a glass of wine. Here, things take a sinister turn. The insulted Piper played his bewitching music once more, and this time he took away the children of the Hamelin. They entered a cavern with him and were never seen again. In the closing lines of the poem, the speaker warns Willie that one should keep one's promises.

The poem gives a moral message that precious things could be lost because of greed, falsehood and treachery.

Q1. Why were the people of Hamelin worried?

Ans. The people of Hamelin were worried because rats infested their town and were a nuisance.

Q2. Make a list of the activities of the rats in the town.

Ans. The rats fought the dogs, killed the cats, bit babies, ate the cheeses out of the vats, licked the soup from the cooks' spoons, split open the kegs which stored salted sprats, made nests inside hats and created a racket.

Q3. What happened when the piper blew his pipe for the first time?

Ans. When the Piper blew his pipe for the first time, all the rats in the city came out and followed him through the streets till the river, where they jumped in and drowned.

Q4. Why did the Piper blow his pipe a second time? What happened then?

Ans. The Piper had been promised a thousand guilders in return for ridding the town of rats. When the Mayor refused to pay the Piper, he blew his pipe a second time to attract the children of the town and teach the people of Hamelin a lesson. The Piper led the children, dancing and joyful, into a cavern and they were never seen again.

Q5. Why did the poet describe the children running out 'like fowls in the farm-yard when barley is scattering?'

Ans. When barley is scattered, fowls come running out to satisfy their hunger. The children had the same enthusiasm as they heard the Piper playing his pipe and came running out at the same time.

Q6. What does the poet advice Willie to do?

Ans. The poet advises Willie to always keep his promises.

SUBJECT: SOCIAL SCIENCE

Rulers and Their Buildings

Answer in 10-20 words

Q1. What is pietra dura? Name one monument in which it has been used.

Ans. Pietra Dura is a decorative method in which semi-precious stones are embedded in the marble. It has been used in the interior of Taj Mahal.

Q2. Write two distinguishing features of Mughal architecture.

Ans. The two distinguishing features of Mughal architecture are: Double – Domed structure and the use of red sand stone.

Q3. Name three buildings constructed during the reign of Akbar.

Ans. Agra Fort, Tomb of Salim Chisti and Buland Darwaza were built in Akbar's reign.

Q4. Name the two gardens that Jahangir was famous for building.

Ans. The two famous gardens that Jahangir built are: Shalimar Bagh and Nishat Bagh.

Q5. The Taj Mahal was constructed out of which material?

Ans. Taj Mahal was constructed out of Marble.

Answer the following in 50-70 words

Q1. What were the different kinds of buildings constructed by the Mughal rulers?

Ans. There were mainly two types of buildings. The first kind included the forts, palaces and tombs, representing grandiosity. The second kind included public buildings like mosques, temples, wells etc.

Q3. List two differences in the decorative styles as noticed during the Sultanate and the Mughal period.

Ans. During Sultanate period, decorative styles included Calligraphy, geometry and foliation. While as during Mughal period marble inlay work was used for decoration. The former period used gypsum to plaster the buildings while as in later sandstone and Marble was used.

Answer the following in 80-100 words

Q1. Akbar's period was a period rich in architecture. Do you agree? Justify your statement.

Ans. Yes, we agree that Akbar's period was rich in Architecture because it witnessed fusion of Indo-Islamic Architecture. Besides, it can be taken as formative period of Mughal architecture. It represents the growth of various techniques and experiences of other countries. The examples to show the richness of Akbar's period can be Agra Fort. Fatehpur Sikri, various courtyards, dewan-e-aam and Jama masjid. In these, rich marble and other fine material was used. Besides, red sand stone was also used as a building material.

Q2. Write a paragraph on architecture under Shah Jahan. How did it differ from the architecture used in the Monuments made during Akbar's reign?

Ans. Shah Jahan was a prolific builder. He undertook extensive architectural works for which he used marble in different form. The Lal Qila in Delhi, Taj Mahal, and the two gate ways: the Delhi and Lahore gates are some prominent examples. He also made several notable buildings like Dewan-e-aam, Dewan-e-khas and Rang Mahal. These buildings have floral decorations, Calligraphy and pietra dura.

Architecture under Shah Jahan's reign differed from Akbar because he mainly used marble but decorative style like pietra dura was not introduced.



COMPOSITION AND STRUCTURE OF ATMOSPHERE

Answer the following in 10-20 words

Q1. Name the five layers of the atmosphere

Ans. The five layers of atmosphere are: Troposphere, Stratosphere, Mesosphere, Thermosphere and Exosphere.

Q2. What do you understand by the normal lapse rate?

Ans. The decrease in air temperature at the rate of 1°C for every 165 m increase in height in Troposphere is called 'Normal Lapse'.

Q3. How is the Tropopause different from the Stratopause?

Ans. Tropopause is the narrow boundary that separates the Stratosphere from the Troposphere. Stratopause is the narrow boundary that separates Stratosphere from Mesosphere.

Q4. What is the significance of the Ozone layer?

Ans. The Ozone layer absorbs all the harmful radiations of Sun and doesn't allow them to reach Earth's surface.

Q5. Which layer of the atmosphere makes radio communication possible?

Ans. The Thermosphere makes radio communication possible.

Answer the following in 50-70 words

Q1. With the help of a diagram describe the composition of the atmosphere.

Ans. The atmosphere is composed of a mixture of gases. These gases along with their density (quantity) are:

Nitrogen 78%, Oxygen 21% and other minor gases which include CO₂, argon, helium, Ozone etc. Besides, this 1% of composition also includes water vapour, smoke, dust particles, etc.

(Diagram is on page no. 117 of the text book)

Q3. Why the Thermosphere is also called ionosphere?

Ans. The Thermosphere is also called Ionosphere because it contains electrically charged particles called Ions which reflect radio waves back to Earth's surface making wireless communication possible.

Answer the following in 80-100 words

Q1. Distinguish between the Mesosphere and the Thermosphere.

Ans.

MESOSPHERE:

- It is the third layer of Atmosphere.
- Here, temperature decreases with height.
- It helps Earth by burning meteors.
- The boundary that separates Mesosphere from Stratosphere is called Stratopause.

THERMOSPHERE:

- It is the fourth layer of Atmosphere.
- Here, temperature increases with height.
- It helps Earth by making radio communication possible.
- The boundary that separates Thermosphere from Mesosphere is called Mesopause.

Q2. Examine the significance of the atmosphere.

Ans. Atmosphere is significant in the following ways:

- Gases present in atmosphere are very important for us.
E.g. Oxygen helps humans/animals to survive.
- Nitrogen maintains soil fertility.
- CO₂ help plants in photosynthesis.
- Ozone layer of atmosphere protects us from harmful radiations.
- Water vapour in atmosphere causes precipitation.
- Sunlight trapped by Earth's atmosphere keeps earth warm.

STATE GOVERNMENT

Answer the following in 10-20 words

Q1. How many states and Union territories does India have?

Ans. There are 28 states and 8 Union territories in India.

Q2. What are the organs of the state government?

Ans. The organs of state government include the executive, the legislature and the judiciary.

Q3. What is the term of the legislative Assembly?

Ans. The term of legislative Assembly is 5 years. However, in certain situations it can be dissolved by the governor before completing its tenure.

Q4. How many types of bills are there? Name them.

Ans. There are two types of bills: Money Bill and Non-Money Bill.

Q5. Who appoints the governor?

Ans. The governor is appointed by President of India.

Answer the following in 50-70 words:

Q1. What are the qualifications of a governor?

Ans. The qualifications of a governor are:

- He/she should be the citizen of India.
- He/she should not be less than 35 years of age.
- He/she must not be a member of either of 2 houses.
- He/she must not hold any government office.

Q2. Mention a few important subjects of the Union government and state list.

Ans. SUBJECTS OF UNION LIST:

Defense, External affairs, Currency, Railways, Communication, Banking, Post and Telegraph, Law making etc.

SUBJECTS OF STATE LIST:

Law and order in State, Police, Health, Transport, Land policies etc.

Q3. Who appoints the governor of state? How long does he remain in power?

Ans. The governor is appointed by the President of India. His tenure remains of 5 years. However, he can be removed from the office on account of some guilt like corruption by means of impeachment.

Answer the following in 80-100 words

Q1. Bring out a few differences between the legislative Assembly and the legislative council.

LEGISLATIVE ASSEMBLY:

- It's member strength remains 60 and 500.
- It's term is of 5 years.
- Governor can dissolve the legislative Assembly under certain situation.
- It is headed by speaker and deputy speaker.
- Members are elected directly by people.

LEGISLATIVE COUNCIL:

- It's member strength is 1/3rd of legislative assembly.
- 1/3rd of members retire every two years and are replaced by new members
- It is permanent and can't be dissolved.
- It is headed by chairman and deputy chairman.
- Here members are chosen from legislative assembly

Q2. Which of the two houses of state legislature is more powerful? Why?

Ans. The legislative assembly is more powerful than legislative council. It has supremacy in passing state budget, money bills, tax issues and fixing salaries of members of the state legislature. Also, for introducing the ordinary bill, the legislative council has to consult legislative assembly for approval.

Q3. Governor is only a nominal head of the state. Do you agree? Give reasons.

Ans. Yes, the governor is appointed by the president and is a nominal head of the state. This is because of the following reasons:

- The administration of the state is carried out in the name of governor. The actual responsibility is that of the chief minister and council of ministers.
- The council of ministers are appointed by the governor on the advice of the chief minister.
- The passage of the bills requires the assent of the governor. This is done on the advice of the council of ministers headed by the chief minister.

Q4. How is the chief minister appointed? Discuss his main functions.

Ans. The leader of the majority party is appointed by the governor as the Chief Minister. The main functions of Chief Minister are:

- To direct the ministry and determine its policies.
- To supervise state administration.
- To allocate, reallocate or take back portfolios from his/her ministers.
- To co-ordinate the working of various ministries.

OASIS Hr. Sec. Educational Institute

SUBJECT: SCIENCE

RESPIRATION IN ORGANISMS

Short answer type questions

Q1. Explain inhalation and exhalation.

Ans. INHALATION: The process of taking in air rich oxygen is known as inhalation. During inhalation, the diaphragm contracts and becomes flat. The rib-cage moves upwards and outwards. This causes the volume inside the chest cavity to increase. As a result, air is drawn into the lungs.

EXHALATION: It is the process of giving out air rich in carbon dioxide, through a pair of openings called Nostrils (nares). During exhalation, the diaphragm relaxes and returns to its normal dome shape. The rib-cage returns back to its normal position. This reduces the volume within the chest cavity and the air is pushed out of the lungs.

Q2. What is breathing rate? How does it differ?

Ans. Breathing rate is the rate at which breathing occurs. It is usually measured as breathe per minute. It differs with age and is much more in infants than in adults. It also increases during vigorous exercise, while as decreases during sleep.

Q3. Define aerobic respiration. Give its equation.

Ans. Aerobic respiration is the process of producing or releasing energy from food (glucose) in presence of oxygen. This is the most common type of respiration and is exhibited by almost all organisms.

In this process, food stuffs are completely oxidized to carbon dioxide and water. This reaction can be represented as:



Q4. Define anaerobic respiration. Give its equation.

Ans. Anaerobic respiration is the respiration that takes place in the absence of oxygen in cytoplasmic part. In this food is broken down into carbon dioxide and alcohol, along with the release of energy. It is also called as fermentation. This type of respiration is exhibited by some organisms such as yeast and certain bacteria. It can be represented as:



Q5. Name the different parts of human respiratory system.

Ans. The different parts of human respiratory system are:

- External nares
- Pharynx
- Larynx (voice box)
- Trachea (wind pipe)
- Lungs
- Bronchi
- Bronchioles, and alveoli

Long answer type question

Q1. Describe an activity to show that exhaled air contains carbon dioxide.

Ans. ITEMS USED: A test-tube, freshly prepared lime water (calcium hydroxide), one-holed cork and a straw.

PROCEDURE:

- Take a test-tube and pour some freshly prepared lime water into it.
- Close the test-tube with a one-holed cork.

- Pass a straw through the hole of the cork in such a way that its end is immersed in lime water.
- Now blow gently through the straw several times.

RESULT: Lime water turns milky.

CONCLUSION: Carbon dioxide turns lime water milky. This suggests the presence of carbon dioxide in exhaled air.

Q2. How does anaerobic respiration take place in muscles? Explain.

Ans. In our body, muscle cells normally carry out aerobic respiration to meet their energy requirements. However during vigorous exercises, muscle cells resort to anaerobic mode of respiration. This is because; during exercise muscle cells work faster and require energy at a faster rate. The supply of oxygen however does not increase with demand and the cells soon rush out of oxygen. To meet this increased demand of energy, muscle cells break glucose in absence of oxygen.

It can be represented as:

FOOD (Glucose) \longrightarrow LACTIC ACID + ENERGY (ATP)

(in absence of oxygen)

This accumulation of lactic acid in muscles causes cramps. It is less efficient mode of respiration.

Q3. Give a step by step account of passage of air through the human respiratory system.

Ans. The passage of air through respiratory system is as follows:

- Air enters our body through the nostrils or openings of the nose. This leads into the nasal cavity. Our nostrils are lined with hair, which act as filters. It traps the dust particles and prevents them from reaching the lungs. The inner lining of the nasal passage produces a slimy, sticky substance called mucus. This also helps in trapping the dust particles.
- The filtered air then passes to the pharynx and through the voice box or larynx down the wind pipe or trachea. The trachea or wind pipe divides into two narrower tubes called bronchi before entering the lungs.
- Inside the lungs, each bronchus branches into finer tubes called bronchioles. The bronchioles end in numerous thin-walled sacs called alveoli. Alveoli are the sites of gas exchange.
- Each alveolus is surrounded by a network of tiny blood vessels called capillaries.

Q4. Describe the process of respiration in insects.

Ans. In insects like moths, grasshoppers, houseflies and cockroaches; the gaseous exchange takes place through small openings called spiracles. Spiracles are present on the outer body of insects and open into a network of air filled tubes present inside their bodies. These networks of air filled tubes constitute the tracheal system of insects.

Gases enter and leave the insect body through spiracles and are exchanged between the tracheal system and body cells of insects.

Q5. How do plants respire?

Ans. In plants, gaseous exchange takes place at special sites in leaves, roots and stem. It mainly occurs in leaves through small pores called stomata. In some plants it takes place in stem through small openings known as Lenticels in some plants, roots are also sites of gaseous exchange. Exchange of gases continuously occurs in plants. However its rate is faster during daytime due to active involvement of leaves in photosynthesis and presence of sunlight.

WIND AND STORM

Short answer type questions:

Q1. What is caused by the uneven heating between equator and the poles?

Ans. The sun heats the surface of the earth unevenly. The area near the equator receives more heat from the sun than the area around the poles. Air above the land near the equator thus gets warm. Warm air is lighter and hence it rises up. Air from colder areas such as Polar Regions move in place of the rising warm air. This causes movement of air or wind.

Q2. What are monsoon winds?

Ans. The winds that carry a lot of moisture with them causing rains are called monsoon winds. It results due to unequal heating and cooling of land and sea.

Q3. In which direction does the wind blow in winter?

Ans. In winter the land is cooler than sea. Hence wind blows from land towards the sea.

Q4. What is an anemometer?

Ans. An anemometer is a device which is used for measuring wind speed and is the simplest weather monitoring instrument.

Q5. What is a storm?

Ans. A storm is a violent disturbance of the atmosphere with high speed winds, usually accompanied by heavy rain, thunder-storms, lightening or snow.

Long answer type questions

Q1. Describe the structure and function of a wind vane.

Ans. A wind vane also known as weather vane is an instrument which is used to determine the direction of wind. It is probably one of the first weather instruments ever used. A simple wind vane is a pointer in the form of an arrow that freely rotates on the top of fixed vertical rod on which four directions are marked i.e, north, south, east and west. It is designed to swing easily and point to the direction in which the wind is blowing.

Q2. List down some of the damages caused by a cyclone.

Ans. Cyclone is a natural process in which wind travels at a very high speed, causing large scale devastation. The damage caused by cyclone are enlisted as under:

- Trees get uprooted.
- Heavy rains cause flooding in low-lying coastal areas and soil fertility is reduced.
- A strong wind pushes water from the seashore to the land.
- Telephone cables, electrical wires and other communication systems are affected.

Q3. Differentiate between a cyclone and a tornado.

Ans. The difference between a cyclone and a tornado are enlisted as under:

CYCLONE	TORNADO
1: A cyclone is a violent storm with a wind speed of 120 to 200 km/hr.	They are violent storms travelling with a speed of 500km/hr.
2: Cyclones form when air above the water bodies get heated and become warm.	Tornadoes develop from thunderstorms and are mostly seen on land.
3: They are egg or oval shaped.	They are dark funnel shaped.

Q4. List down some of the safety measures that should be followed in the event of a storm.

Ans. The safety measures that one should follow in the event of a storm are:

- Do not take shelter under a tree as trees can be uprooted by the strong winds.
- Fishermen should not venture into the sea after a cyclone warning.
- Sufficient candles and torch lights with batteries must be stored in the house.
- Phone numbers of emergency services such as police, fire brigade, hospitals and ambulance should be kept handy.

Q5. What causes wind? Describe any two factors that cause winds.

Ans. The moving air is called wind. It is caused by differences in air pressure at two places on earth's surface by the uneven heating caused by the sun. As a result air moves from higher pressure area to lower pressure zone, thereby producing winds of various speeds.

The two factors that are responsible for causing winds of different magnitude are as follows:

Air pressure: Winds are a result of tendency of warm air to rise and conversely, cool air to sink. When the sun's energy heats up a ground surface or part of sea and the heat radiates into the air, the air rises creating low pressure area underneath it. As a result air from higher pressure area flows to occupy the space created by rising warm air. Hence this difference in air pressure causes wind.

Uneven heating of earth: The sun heats the equator more than the poles, forming continuous movement of air between the two regions. Hot air at the equator rises, creating a low pressure area underneath it, which is filled by cooler air from Polar Regions. The hot air cools as it moves towards the poles. It sinks and circulates back to equator creating movement of wind.

SOIL

Short answer type questions

Q1. What is soil? How is it important for plants and animals?

Ans. The uppermost layer of earth's crust in which plants grow is called soil. It is also called "Skin of earth". It is a mixture of decaying organic matter (humus), minerals, liquids and many countless living organisms.

Soil is useful for both plants and animals. It contains many nutrients essential for plant growth and serves as habitat for many insects. Thereby providing benefit to all life forms.

Q2. What is humus?

Ans. Humus is the organic component of soil, which is formed by decomposition of plant and animal remains by the action of bacteria and other micro-organisms.

Q3. Describe the features of loamy soil.

Ans. The features of loamy soil are enlisted as under:

- Loamy soil has high humus content, which makes it very fertile.
- It contains an almost equal proportion of large and fine rock particles.
- It is a mixture of sand, clay and silt which gives it crumbly texture.
- It has high water holding capacity and is moderately aerated, making it ideal for agriculture.

Q4. What is percolation rate? What is the percolation rate of sandy and clayey soil?

Ans. Percolation rate is the rate at which water flows or trickles downward, through small spaces in soil called pores. Sandy soil has a higher percolation rate while as clayey soil have a lower percolation rate.

Q5. What is soil profile? What are horizons?

Ans. A soil profile is a vertical section through different layers of soil in downward direction from ground surface to bed rock. Each soil layer called Horizon has different texture, colour and chemical composition. The different horizons of soil are:

- A -horizon or Top soil
- B- horizon or Sub soil
- C- horizon or Sub-stratum
- R- horizon or bed rock.

Long answer type questions

Q1. Describe the different stages of weathering.

Ans. Weathering is the process of breaking down of rocks by the action of wind, water, changes in temperature and penetrating roots of plants. The different stages of weathering are as follows:



STAGE I: The parent rocks break down into small pieces by the action of wind, water and differences in temperature and chemicals.

STAGE II: In this stage, rocks further undergo weathering to form very fine rock particles. At this stage, humus gets mixed with these rock particles. Humus makes the soil fertile and suitable for plant growth.

STAGE III: This stage is concerned with the formation of soil profile where minerals and salts seep into the ground with water and different horizons are formed.

Q2. What are the factors that affect soil formation?

Ans. The factors that affect soil formation are:

Types and characteristics of parent rock:

The rate of soil formation varies, depending on the constituents of the original parent rock. If the parent rock is very hard, soil formation takes a long time. If the parent rock is porous, soil formation is faster.

Climate: Soil formation is markedly influenced by climatic condition. The minerals in rocks expand and contract due to heating and cooling which causes breaking down of rocks to form soil.

Presence of living organisms: Living organisms play an important role in speeding up the formation of soil. Roots of plants penetrate into rocks and help in breaking them. Animals such as ants, earthworms, rats, and snakes dig the soil extensively. Micro-organisms decompose dead plants and animals, adding nutrients to the soil.

Q3. Describe the three types of soil.

Ans. Soil is of following three types:

Loamy soil

- Loamy soil has high humus content, which makes it very fertile.
- It contains an almost equal proportion of large and fine rock particles.
- It is a mixture of sand, clay and silt which gives it crumbly texture.
- It has high water holding capacity and is moderately aerated, making it ideal for agriculture.

Sandy soil:

- It is coarse and gritty in texture.
- It has large particle size with moderate air spaces between the particles.
- It has low water-holding capacity.
- It is poor in nutrients.

Clayey soil:

- It has smooth and sticky texture
- It contains large proportion of fine particles with small air spaces
- It has good water holding capacity
- It has low porosity and is poorly aerated.

Q4. What is soil conservation? What are the ways that help in soil conservation?

Ans. Soil conservation can be defined as the protection of soil from erosion and the maintenance of its fertility. Soil conservation is very important and can be conserved by following ways:

Afforestation: Planting more trees or afforestation helps in preventing soil erosion as tree roots bind the soil particles together.

Preventing overgrazing: Land meant for grazing animals should be given enough time for the grass to grow back to help in soil conservation.

Terrace farming: Adopting techniques such as terrace farming on steep slopes of hills help in preventing soil erosion.

Q5. Name the different types of soil found in India. Describe their properties and name the crops grown in them.

Ans. The different types of soil found in different regions of India along with their properties and cultivations are as under:

- **Alluvial soil:**
 - It is the most fertile soil as it is rich in mineral and nutrients
 - It contains loam, clay and silt and is commonly found in river beds.
 - It contains low quantity of phosphorus.
 - Crops grown in this soil type are: rice, wheat etc.
- **Red soil:**
 - It is highly porous containing organic matter
 - It has least water-holding capacity
 - It has presence of mineral- Ferric iron oxide which imparts it red colour.
 - Crops grown in this soil type are: Potato, rice, wheat etc.
- **Black soil:**
 - It is also called Regur with high humus content.
 - It has high water-holding capacity
 - It is rich in calcium, magnesium and potassium.
 - Crops grown in this soil type are: ragi, oilseeds etc.
- **Laterite soil:**
 - It has low humus content and is rich in iron, aluminium and clay.
 - It is red in colour due to presence of ferric iron oxide
 - Crops grown in this soil type are: tea, coffee etc.

FORESTS: OUR LIFELINE

Short answer type questions

Q1. Name the four layers of forests.

Ans. A forest may be defined as a biological community dominated by woody vegetation, consisting of trees and shrubs with a close canopy. The four different layers of a forest are:

- Emergent layer
- Canopy
- Understorey
- Forest floor

Q2. How many types of consumers are there? Name them.

Ans. Consumers can be defined as the animals which feed on other organisms or their parts, directly or indirectly for food.

Consumers however can be classified into the following different types:

Herbivores: which obtain food or energy directly from plants.

Carnivores: which prey upon other animals (flesh eaters).

Scavengers: which feed on dead animals.

Decomposers: also known as Saprotrophs feed on remains of dead plants and animals.

Q3. What are Saprotrophs? Give some examples.

Ans. Saprotrophs are organisms which feed on dead remains of plants and animals (organic matter). They secrete digestive juices onto dead and decaying matter to dissolve it and then absorb the nutrients released. The examples of Saprotrophs are fungi, yeast etc.

Q4. What is a food chain?

Ans. A food chain is a sequence of organisms of an ecosystem through which food and its contained energy passes, with each member becoming the food of a later member of the sequence.

Vegetation → Rabbit → Fox → Wolf → Tiger
Grass → Grasshopper → Frog → Snake → Falcon

Q5. How do trees help in harvesting rainwater?

Ans. The roots of trees and plants growing in the forest bind the particles of top soil firmly. Due to this binding, the flowing rainwater is not able to carry away the top soil. Thus roots act as natural absorbers of rainwater, allowing it to percolate (seep) deep into the ground thereby contributing to formation of an aquifer or water table.

Long answer type questions

Q1. Describe the different layers of a forest.

Ans. A forest may be defined as a biological community dominated by woody vegetation, consisting of trees and shrubs with a close canopy. The four different layers of a forest are:

Emergent layer: It is the uppermost layer in a forest constituting the tallest trees. The leaves of these trees are broad with a waxy coating to protect them from the abundant sunlight. Eagles, humming birds and butterflies are found in this layer.

Canopy: The layer where the intertwined branches of trees form a dense roof over the ground, is called Canopy. It blocks most of the sunrays keeping the lower layers cool and dark. Macaws, sloths and monkeys are mostly found in this layer.

Understorey: It is the layer of small trees and large shrubs present beneath the canopy. This layer receives very little sunlight. Animals like Jaguars, tree frogs, ants and snakes are found in this layer.

Forest floor: This layer is covered with dead and rotting leaves, twigs, branches and occasionally bodies of dead animals. Ferns, mushrooms, grasses and animals like tigers, elephants and deer are found in this layer

Q2. List down the uses of forests.

Ans. The important uses of forests are enlisted as under:

- Forests maintain the level of oxygen and carbon dioxide in nature. During photosynthesis, plants take in large amount of carbon dioxide from the air and release oxygen needed for respiration.
- The roots of trees and plants growing in the forest bind the particles of top soil firmly. Due to this binding, the flowing rainwater is not able to carry away the top soil and thereby reduce soil erosion.
- Roots of trees in forests act as natural absorbers of rainwater, allowing it to percolate (seep) deep into the ground thereby contributing to formation of an aquifer or water table.

Q3. What are the useful products obtained from forests?

Ans. The various useful products obtained from forests are enlisted as under:

- Logs from trees such as sal, mahogany, teak, sheesham are used in construction and for making furniture.
- Latex obtained from the rubber plant is used to make rubber and glue.
- Resins obtained from pine trees are used to make paint and varnish.
- Medicines such as quinine are obtained from the cinchona plant. Tall grass is used as fodder and to make paper.

Q4. What is deforestation? Describe its consequences. How can forests be conserved?

Ans. The cutting down of trees on a large scale is called deforestation. This land is being utilized for building houses, roads and for agricultural purposes to fulfil the needs of ever increasing population.

The various consequences of forests are enlisted as under

- Increase in the carbon dioxide level lead to global warming.
- Extinction of various plant and animal species.
- Result in floods and hence in soil erosion.

Forests form the essential resources and hence protection of forests and the prevention of their further depletion are called conservation. Forests can be conserved in the following ways:

- Preventing illegal cutting of trees and hunting of animals.
- Afforestation or planting of trees on a large scale
- Educating people about the consequences of deforestation.

جماعت: ساتویں
سبقت نمبر: ۹
ٹرم: اول
عنوان: پرندے کی فریاد

مختصر جوابات

- ج ۱: قیدی پرندے کو گزرا ہوا زمانہ یاد آ رہا ہے۔
ج ۲: پرندہ گھر کی اُس خوبصورت و حسین مورتی کو یاد کر رہا ہے جسکی وجہ سے اسکا آشیانہ (گھونسلہ) آباد تھا۔
ج ۳: پرندہ اپنے قید کرنے والے سے یہ التجا کرتا ہے کہ اُسکو آزاد کر دے اور بدلے میں اس بے زبان سے دُعا ئیں لے۔

تفصیلی جوابات:

- ج ۱: آشیانے میں پرندہ اپنی مرضی کا مالک تھا۔ جہاں چاہتا وہاں جاسکتا تھا۔ لیکن اب پنجرے میں اسکو وہ آزادیاں حاصل نہیں ہیں۔
ج ۲: ہمیں ہر قسم کے پرندوں کے ساتھ اچھا سلوک کرنا چاہیے اور ان پر رحم کرنا چاہیے کیونکہ ہمارا دین اسلام اور قرآن بھی ہمیں اس بات کی تلقین کرتا ہے کہ اللہ کی مخلوق پر رحم کرو، اللہ تم پر رحم کرے گا۔

سبقت نمبر: ۱۱
شہد

مختصر جوابات:

- ج ۱: شہد کی کھیاں جو رس جمع کرتی ہیں اُسکا صرف ایک تہائی یعنی تین میں سے ایک حصہ ہی شہد بنتا ہے۔
ج ۲: شہد کی مکھیوں کو آدھا کلو شہد بنانے میں ۲۰ لاکھ پھولوں کا رس حاصل کرنا پڑتا ہے۔
ج ۳: شہد کی کھیاں آدھا کلو شہد بنانے کیلئے تقریباً ۵۰ ہزار میل کا فاصلہ طے کرتی ہیں۔
ج ۴: شہد کو عربی میں عَسَل، فارسی میں انگبین، بنگلہ میں مدھو اور گجراتی میں مُدھ، سندھی میں ماکھی، انگریزی ہنی اور کشمیر ماچھ کہتے ہیں۔

تفصیلی جوابات:

ج ۱۔ شہد میں ۷ فیصد پانی، گلوکز فرکٹوز ۶۰ (ساٹھ) فیصد اور شکر ۲ فیصد ہوتا ہے۔ اسکے علاوے ڈکسٹریں، پروٹین، معدنیات اور تیزابیات وغیرہ پائے جاتے ہیں۔

ج ۲۔ شہد ہمارے جسم سے گندے مواد کو دور کرتا ہے۔ یہ ایک اینٹی سپٹک کی طرف کام کرتا ہے بدن کو طاقت بخشتا ہے۔ ہاضمہ میں مدد کرتا ہے، قبض کو دور کرتا ہے اور اسہال (دست) کو درست کرتا ہے اور پھیپھڑوں سے بلغم خارج کرتا ہے اور ہمارے جسم سے اضافی چربی کو ختم کرتا ہے۔

ج ۳۔ نیویارک میں حالیہ تحقیق سے ماہرین اس نتیجے پر پہنچے ہیں کہ شہد میں موجود اجزا جسم کی اضافی چربی کو ختم کرنے میں مددگار ثابت ہوتے ہیں۔ رات کو سونے سے پہلے ایک چمچ شہد لینے سے ہفتہ بھر میں ایک پونڈ فالتو چربی (وزن) کم ہو سکتی ہے۔

موضوع: پرندوں کا بادشاہ عقاب

مختصر جوابات:

س) عقاب کن باتوں کی علامت ہے؟

ج) عقاب ہمت، شجاعت، پروازی اور نڈر پن کی علامت ہے۔

س) شاہین اور شکر میں کس چیز کا فرق ہے؟

ج) شاہین سفید رنگ کا شکاری پرندہ ہے۔ شکر کے پر چیل کے رنگ سے ملتے جلتے ہیں۔ لیکن سینہ اور پیٹ کے بال سفید ہوتے ہیں۔

س) کیا عقاب دوسروں کا کیا ہوا شکار کھاتا ہے؟

ج) عقاب دوسروں کا کیا ہوا شکار نہیں کھاتا ہے بلکہ خود شکار کر کے کھاتا ہے۔

س) عقاب کس طرح شکاری کو شیر کا پتہ بتا دیتا ہے؟

ج) عقاب شیر کو دیکھ کر ایک ہی جگہ ہوا میں مسلسل چکر کاٹ کر اپنے مالک کو شیر کی موجودگی کے صحیح مقام کی نشاندہی کراتا ہے۔ پھر پھرتی سے

جھپٹ کر شیر کے منہ پر اپنے پروں سے زور دار چاٹتا مارتا ہے اور شیر کراہ اٹھتا ہے۔ اس طرح شکاری کو شیر کا صحیح پتہ چلتا ہے۔

س) مرغابیوں کا شکار کرنے کیلئے شکاری کیا کرتے ہیں؟

ج) مرغابیوں کو شکار کرنے کے لئے شکاری مرغابیوں کی جگہ پر عقاب کو فضا میں چھوڑ دیتے ہیں۔ اس کے ڈر سے مرغابیاں اڑ نہیں پاتی

اور انہیں آسانی سے شکار کیا جاتا ہے۔

تفصیلی جوابات:

س:۱: علامہ اقبالؒ نوجوانوں میں کون سے صفات دیکھنا چاہتے ہیں؟

ج: علامہ اقبالؒ نے جا بجا اپنے کلام میں عقاب کی بلند پروازی، سخت کوشی، عالی ہمتی اور نڈر پن کی مثالیں دے کر قوم اور نوجوانوں کو اپنے اندر یہ اوصاف پیدا کرنے کی تلقین کی ہے۔

س:۲: ہمارے لیے عقاب کی زندگی میں کون سا سبق موجود ہے؟

ج: ہمارے لیے عقاب کی زندگی سے بلند ہمتی محنت اور مشقت سے خود اپنی روزی تلاش کرنا اور مشکلات کا ڈٹ کر مقابلہ کرنے کا سبق ملتا ہے۔

(گرامر)

اسم ذات کی چھ قسمیں ہیں۔

۱) اسم تصغیر ۲) اسم آلہ ۳) اسم ظرف ۴) اسم صورت ۵) اسم جمع

اسم تصغیر: اسم تصغیر وہ اسم ہے جس کے معنوں میں چھوٹا پن پایا جائے۔

جیسے: پہاڑ سے پہاڑی، سانپ سے سنبولیا۔

اسم مکبر: اسم مکبر وہ اسم ہے جس کے معنوں میں کسی قسم کی بڑائی پائی جائے۔

مثلاً: ٹوپی، سے ٹوپ، راہ سے شاہراہ

اسم آلہ: اسم آلہ وہ اسم ہے جس میں اوزار کے معنی پائے جائیں۔

جیسے: چاقو، آری وغیرہ۔

اسماء تصغیر۔

۱) بہنا	۲) بھیا	۳) شیشی	۴) ڈبیا	۵) ٹوپی	۶) دیگچہ	۷) باغیچہ
۸) مشکینہ	۹) ڈھولک	۱۰) ٹوکری	۱۱) گٹھری	۱۲) تھالی		

اسماء مکبر۔

۱) شاہ باز	۲) شہتیر	۳) پگڑ	۴) لکڑ	۵) بتنگر	۶) چھتر	۷) شاہکار	۸) پنگ
۹) ٹوکرا	۱۰) مشک						

اسماء آله:

(۱) ڈھال
(۱۰) قینچی

(۲) چھانی

(۳) تلوار

(۴) بلین (۵) پھکنی

(۶) تلور (۷) چاقو

(۸) آری

(۹) ہتھوڑا

واحد

جمع

(۱) وصف

اوصاف

(۲) وجہ

وجوہات

(۳) حدیث

احادیث

(۴) مذہب

مذاہب

(۵) بدن

ابدان

(۶) ملک

ممالک

(۷) امتحان

امتحانات

(۸) جرم

جرائم

(۹) عمل

اعمال

(۱۰) فائدہ

فوائد

الفاظ

ضد

(۱) ممکن

ناممکن

(۲) حلال

حرام

(۳) فرمانبردار

نافرمان

(۴) محبت

نفرت

(۵) سست

چست

موضوع: کشمیر کے صحت افزا مقامات

کشمیر میں دنیا کی ساری خوبیاں پائی جاتی ہیں۔ اس لئے اس کو جنت بے نظیر کہا جاتا ہے۔ کشمیر کی وادی اپنے قدرتی دلفریب مناظر اور سبزہ زاروں، آبشاروں، ندی نالوں کی وجہ سے دنیا کے لوگوں کو اپنی طرف کھینچتی ہے۔ دنیا کا کوئی مقام اس کا ہمسر نہیں اسکے آس پاس پہاڑ سبز لباس پہنے ہوئے کھڑے ہیں۔ کشمیر ان کے بچوں بیچ گویا پتھر کی انگوٹھی میں زمرہ کا نگینہ جڑا ہے۔

جھیل ڈل کا نظارہ دیکھنے کے لائق ہے۔ یہ جھیل کشمیر کی راجدھانی سرینگر کے پاس ہے۔ ڈل کے ارد گرد پہاڑ ہیں اور ان کے دامن میں کشمیر کے پُر فضا باغ ہیں۔

(۱) نسیم باغ سرینگر سے ۷ میل دُور زیارت حضرت بل کے نزدیک واقع ہے۔ یہاں صرف چنار کے درخت ہیں جو شہنشاہ اکبر کے زمانے کے لگے ہوئے ہیں۔ یہاں ایک صاف پانی کا چشمہ بھی ہے۔

(۲) شالیماں: یہ باغ سرینگر سے ۱۰ میل کے فاصلہ پر ہے اور اسے جہانگیر نے بنوایا تھا۔ یہاں کی بارہ دریاں، فوارے، آبشاریں دیکھنے کے قابل ہیں سبزہ زاروں میں پھولوں کی کیاریاں اس باغ کی رونق کو دو بالا کرتی ہیں۔ یہ باغ جھیل ڈل کے کنارے پر واقع ہے۔

(۳) نشاط باغ: یہ باغ سرینگر سے ۷ میل کے فاصلے پر واقع ہے۔ اس باغ کو آصف خان نور جہاں کے بھائی نے بنوایا۔ اس باغ میں خوبصورت پھول اونچے اونچے چنار اور میوؤں کے درخت پائے جاتے ہیں۔

(۴) چشمہ شاہی: یہ سرینگر سے ۶ میل کے فاصلے پر واقع ہے۔ یہ ایک صاف پانی کا چشمہ ہے۔ اس کے آگے ایک عالی شان باغ ہے۔ اور بارہ دری ہے جس میں فوارے اور آبشار چلتے ہیں۔

(۵) گل مرگ: سرینگر سے ۲۹ میل کے فاصلہ پر سیاحوں کے لئے ایک دل کش جگہ ہے۔ سیاح لوگ اکثر گرمیوں میں برف پر سے پھسلنے کے کھیل کے لئے آتے ہیں۔ جنگلات کے نظارے قابل دید ہیں۔ گاف کھیلنے کیلئے یہاں کے میدان مشہور ہیں۔

سونہ مرگ: یہ نہایت خوبصورت صحت افزا مقام ہے۔ اور سرینگر سے ۵۲ میل کے فاصلے پر وادی سندھ میں واقع ہے۔ نالہ سندھ اس کے پاس سے گذرتا ہے۔ یہاں گھنے جنگلات پائے جاتے ہیں یہاں سے کرگل اور لہیہ کو راستہ جاتا ہے۔

پہلگام: یہ ایک مشہور صحت افزا مقام ہے اور سرینگر سے ۶۱ میل کے فاصلے پر واقع ہے۔ یہاں دیودار کے درخت پائے جاتے ہیں ہر سال ہزاروں کی تعداد میں لوگ سیر کرنے کے لئے یہاں کا رخ کرتے ہیں۔ شری امر ناتھ جی کی یاترا کے لئے یہاں سے ہی راستہ جاتا ہے۔ یہاں ایک نالہ ہے جس کا پانی نہایت ہی صاف اور شفاف ہے۔

