

- a) non-biological process of producing mature ones b) biological process of producing young ones
- c) biological process of producing mature ones d) non-biological process of producing young ones
8. The period of pregnancy is known as [1]
- a) Gestation period b) Blastulation
- c) Menstruation d) Incubation period
9. S.I. unit of force is [1]
- a) Newton b) Pascal
- c) Watt d) Joule
10. Ball bearing is used in cycles because [1]
- a) Rolling friction is more than sliding friction b) Rolling friction is less than sliding friction
- c) Ball bearing increase the wheel size d) Ball is used to make attractive
11. A force which opposes the motion is called [1]
- a) Linear b) Friction
- c) Sliding d) Gravitational
12. Which of the following require material medium for propagation? [1]
- a) Sound b) Light
- c) Transverse wave d) All of these
13. Inside the bulb [1]
- a) air is filled b) Both air and neon are filled
- c) hydrogen is filled d) neon is filled
14. Lightning is seen little earlier than thunder sound because [1]
- a) Light require medium for propagation b) Light moves slower than sound
- c) Light travels faster than sound d) Sound require medium for propagation
15. Which of the following works on the concept of multiple reflections? [1]
- a) Kaleidoscope b) Binoculars
- c) Telescope d) Sunglasses

Section B

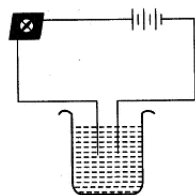
16. Describe how coal is formed from dead vegetation. What is this process called? [2]
17. Why is the use of diesel and petrol as fuels in automobiles being replaced by Compressed Natural Gas (CNG) in big cities? [2]
18. Why should we save paper? [2]
19. Give a suitable word for each of the following statements: [2]
- i. The site which response to a hormone.
- ii. Name of a gland which transports secretions through ducts.

iii. Chemicals that control changes at the adolescence stage.

iv. It marks the beginning of the reproductive period.

20. List the name of five smooth surfaces and five rough surfaces from your surroundings. [2]

21. Name three liquids, which when tested in the manner shown in Fig. may cause the magnetic needle to deflect. [2]

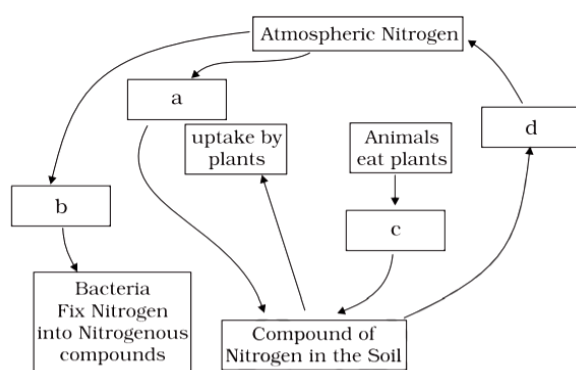


22. Gurmit wanted to perform Activity 13.8 using a laser torch. Her teacher advised her not to do so. Can you explain the basis of the teacher's advice? [2]

Section C

23. Describe mixed cropping method. [4]

24. Complete the following cycle given as fig. by filling the blanks (a), (b), (c) (d) [4]



25. Green leaves do not burn easily while dry leaves catch fire easily. Why? [4]

26. Explain briefly the female reproductive system? [4]

27. a. What is meant by contact force? Explain with the help of an example. [4]

b. What is meant by non contact force? Explain with the help of an example.

28. What is the difference between percussion and string instrument? [4]

29. Write the steps involved in electroplating. [4]

30. What is earthquake? What is the cause of earthquake? [4]

31. What is the power of accommodation of the eye? [4]

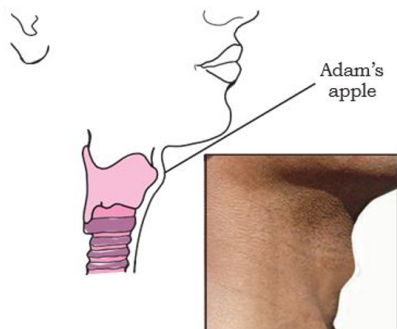
Section D

32. Read the text carefully and answer the questions: [5]

Petroleum is a dark oily liquid. It has an unpleasant odour. It is a mixture of various constituents such as petroleum gas, petrol, diesel, lubricating oil, paraffin wax, etc. Therefore refining is done in order to remove

33. Read the text carefully and answer the questions:

Rena is studying about the changes which occurs at puberty. At puberty, boys can be seen as a protruding part of the throat. In girls, the larynx is hardly visible from the outside. The secretion of sweat glands and sebaceous glands (oil glands) increases. At puberty, male sex organs like the testes and penis develop completely.



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- c) long bone of arm elongate d) long bone of leg elongate
- (ii) Larynx is called
- a) respiratory organ b) music box
- c) voice box d) sound box
- (iii) Most adolescents attain their maximum height around the age of
- a) 18 – 19 years b) 11 – 12 years
- c) 13 – 15 years d) 22 – 25 years
- (iv) In girls, the ovaries enlarge and eggs begin to mature. Also ovaries start releasing _____.
- (v) Pimples occur on face at the time of puberty is due to increased activity of sebaceous glands in the skin.
- a) True b) False

34. **Read the text carefully and answer the questions:**

[5]

Anita take a bucket or a bathtub. She fills it with clean water. Take a small bell in one hand. She then shakes this bell inside the water to produce sound. Make sure that the bell does not touch the body of the bucket or the tub.



- (i) Sound cannot travel through.
- a) iron b) air
- c) vacuum d) water
- (ii) Loudness of sound is determined by
- a) Pitch b) Amplitude
- c) Time period d) Frequency
- (iii) What is demonstrated the activity shown above?
- a) Sound needs medium propagation to travel b) Sound is Produced by a vibrating Body
- c) Sound Produced by Humans d) All of these
- (iv) The toy telephone that we made in our childhood the sound travel through _____.
- (v) Sound cannot travel through strings.
- a) True b) False

Solution

Section A

1. (b) tilling and ploughing
Explanation: The process of loosening and turning of the soil is called tilling or ploughing. This is done by using a plough, made up of wood or iron.
2. (a) Antibiotics
Explanation: Antibiotics are used to treat many bacterial diseases in humans but are not effective against the diseases caused by viruses.
3. (c) destructive distillation of coal
Explanation: Coke is obtained by heating coal to a high temperature in the absence of oxygen or in limited supply of oxygen. It contains less impurities and high carbon content.
4. (a) Butane
Explanation: Butane, a highly flammable, colorless, easily liquefied gas used in gas-type lighters, cigarette lighters and butane torches.
5. (a) non interference
Explanation: Preservation is considered better than conservation. Preservationist applies the principle of non interference in natural system (without interference by human beings).
6. (d) greed
Explanation: Even protected forests are unsafe due to our greed. Human being exploits the natural resources for getting economic value without considering about future generation.
7. (b) biological process of producing young ones
Explanation: biological process of producing young ones
8. (a) Gestation period
Explanation: The period of pregnancy is known as gestation period. It ranges from fertilization of ovum to parturition. It is of about 40 weeks.
9. (a) Newton
Explanation: S.I. unit of force is Newton. When a force pushes a body of mass one kg to a distance of one meter per second, the force is equal to one Newton.
10. (b) Rolling friction is less than sliding friction
Explanation: Ball bearing is used in cycles because rolling friction is less than sliding friction. Hence, most of the moving parts of machine have ball bearing to reduce friction.
11. (b) Friction
Explanation: A force that opposes the motion is called friction. It generates when two surfaces are in contact with each other. Friction depends upon the type of surface whether smooth or rough. Rough surface offers more friction.
12. (a) Sound
Explanation: Sound require material medium for its propagation which may be solid, liquid or gaseous in nature. Light can travel in vacuum as no medium is required.
13. (d) neon is filled
Explanation: neon is filled

14. (c) Light travels faster than sound
Explanation: Light travels at the speed of 3×10^8 m/s while sound travels at a speed of 332 m/s i.e., light travels much faster than sound that is why lightning is seen earlier and thunder is heard later.
15. (a) Kaleidoscope
Explanation: A kaleidoscope is an optical instrument with two or more reflecting surfaces tilted to each other in an angle, so that one or more objects on one end of the mirrors are seen as a regular symmetrical pattern when viewed from the other end, due to repeated reflection.

Section B

16. About 300 million years ago the earth had dense forests in low lying wetland areas. Due to natural processes, like flooding, these forests got buried under soil. As more soil deposited over them, they were compressed. The temperature also rose as they sank deeper and deeper. Under high pressure and high temperature, dead plants got slowly converted to coal.
 As coal contains mainly carbon, the slow process of conversion of dead vegetation into coal is called carbonisation.
17. It is because CNG produces harmful products in very small amount and is a cleaner fuel.
18. To prevent deforestation, save energy and water needed for manufacturing the paper. Chemicals used to manufacture the paper also cause pollution.
19. i. Target site
 ii. Sweat gland/salivary gland
 iii. Hormones
 iv. Puberty
20. **Examples of Smooth Surfaces:**
 (i) Surface of the mirror
 (ii) Floor of the room when polished,
 (iii) Surface of wet soaps,
 (iv) Glazed tiles,
 (v) Surface of an oily pot.
- Examples of Rough Surfaces:**
 (i) Soles of shoes,
 (ii) Surface of ply board
 (iii) Unpainted wall
 (iv) Surface of a brick,
 (v) Surface of tyres.
21. Tap water, sodium chloride solution, hydrochloric acid, lemon juice, vinegar.
22. Intensity of laser beam is very high, as it carries large amount of energy. It is harmful for eyes and can cause permanent damage. One should not look at laser beam directly or indirectly for a longer period.

Section C

23. It is also called as multiple cropping. This is the practice where two different crops or more are grown simultaneously in the same field. The crops are chosen in such a way that the products and waste material from one crop helps in the growth of the other. This type of cropping leads to improving the fertility of the soil thereby increasing the crop yield. Generally, one crop is of long duration while the other is of short duration. One crop requires more nutrients and water while the other requires lesser nutrients or water. As a result, there is a reduction in the competition between the crops for light, nutrients and water. If one crop fails to grow (due to untimely rain or no rains or shortage of nutrients), then the other crop can cover the risk of this complete failure.
 Example: groundnut and cotton; wheat and gram
24. i. Lightning fixes atmospheric nitrogen.
 ii. Nitrogen-fixing bacteria and blue-green algae fix atmospheric nitrogen.
 iii. Nitrogenous waste from excretion by animals and plants and decomposition of dead plants and animals.
 iv. Nitrogen released by bacteria from nitrogenous compounds present in soil into the air.
25. Green leaves have moisture so they take time to reach their ignition temperature, hence they take time to catch fire until they reach ignition point.
 Dry leaves on the other hand catch fire easily because they are not having any moisture content, so they can reach their ignition temperature as soon as the source of heat is applied.

26. The female reproductive system consists of the organs for the formation of gametes or basically referred to as ova or ovum and organs for the transport of ovum to the uterus.

The female reproductive organs include the following:-

- A pair of ovaries.
- Oviducts or the fallopian tube.
- And the uterus.

It produces the female gametes referred to as the ova or ovum.

In human beings a single matured egg is released into the oviduct by one of the ovaries every month.

And in the uterus development of the baby takes place.

27. a. A force which can be exerted by an object on another object only through some contact is called a contact force. The examples of contact forces are: muscular force and frictional force.

Since muscular force is applied on an object with our muscles, hence it is a contact force. For example, a boy pulling a cart.

Frictional force is also applied between the two surfaces in contact with each other, for example, a car moving on the road is stopped by applying friction.

b. A force which can be exerted by an object on another object even from a distance without touching each other is called a non contact force.

Magnetic force and gravitational force are examples of non contact forces. A magnet can attract an iron object even at a distance, so it is a non contact force.

Gravitational force is also applied on all objects even at a distance, so it is a non contact force. For example, an apple falls from a tree comes to the earth in the downward direction.

28. In **string instruments** like guitar, violin, sitar etc., metal strings of specific metal and thickness are made to vibrate to produce sounds. Sounds of different musical notes can be produced by controlling thickness and tightness of strings in these instrument.

Percussion instruments are generally used to provide beats to the music e.g. bass drum, dholak, tabla etc. In all these instruments, a specific hollow shape is closed. The vibrated stretched skin produces loud sound by a stretched skin of an animal. The stretched skin is beaten with a stick or by hand to make it vibrate.

29. Following steps are involved in electroplating:

- The material which needs to be coated with a layer is made the negative electrode (cathode).
- The plate of desired metal is made the positive electrode (anode).
- The conducting solution is made of a salt of desired metal.
- Electric current is passed through the solution.
- The desired metal dissociates from the plate (anode) and gets deposited on the material at negative electrode (cathode).

30. An earthquake is a sudden shaking of the earth which lasts for a very short time.

Earthquake can be caused by erupting volcanoes and large meteorites but the biggest cause of earthquakes is tectonic activity.

The earth's outer most layer - the crust is not a single piece of solid. Instead it is made up of many pieces called tectonic plates that float on liquid rocks beneath it known as the mantle. The mantle has currents in it just like water has and this causes the plates above it to move. The motion of the plates causes them to bump into each other or slide past one another. However, the rocks in the plates try to prevent this motion as they rub into one another. This builds up pressure over time. When the pressure is large enough the rocks give way releasing large amounts of energy as shock waves. These shock waves or seismic waves cause the shaking of the earth.

31. The human eye focusses the image for different objects at different distance by changing the focal length of the lens. This is done by the ciliary muscles, which stretch and relax to change the focal length of the lens. This action of the eye is called the power of accommodation of the eye. The most comfortable distance of the normal eye can read is about 25cm. This distance is called the least distance of the eye. The minimum distance at which the eye can see objects distinctly varies with age.

Section D

32. **Read the text carefully and answer the questions:**

Petroleum is a dark oily liquid. It has an unpleasant odour. It is a mixture of various constituents such as petroleum gas, petrol, diesel, lubricating oil, paraffin wax, etc. Therefore refining is done in order to remove impurities.



- (i) **(b)** Liquefied Petroleum Gas

Explanation: Liquefied Petroleum Gas

- (ii) **(b)** Bitumen

Explanation: Bitumen

- (iii) **(c)** Petroleum Conservation Research Association

Explanation: Petroleum Conservation Research Association

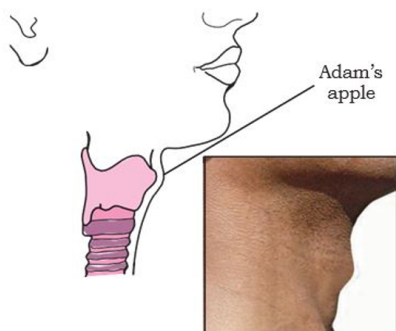
- (iv) 1. Coal, petroleum

- (v) **(a)** True

Explanation: True

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Rena is studying about the changes which occurs at puberty. At puberty, boys can be seen as a protruding part of the throat. In girls, the larynx is hardly visible from the outside. The secretion of sweat glands and sebaceous glands (oil glands) increases. At puberty, male sex organs like the testes and penis develop completely.



- (i) **(b)** Both long bone of arm elongate and long bone of leg elongate

Explanation: Both long bone of arm elongate and long bone of leg elongate

- (ii) **(c)** voice box

Explanation: voice box

- (iii) **(a)** 18 – 19 years

Explanation: 18 – 19 years

- (iv) 1. Mature egg

- (v) **(a)** True

Explanation: True

34. Read the text carefully and answer the questions:

Anita take a bucket or a bathtub. She fills it with clean water. Take a small bell in one hand. She then shakes this bell inside the water to produce sound. Make sure that the bell does not touch the body of the bucket or the tub.



- (i) **(c)** vacuum

Explanation: vacuum

- (ii) **(b)** Amplitude

Explanation: Amplitude

- (iii) **(a)** Sound needs medium propagation to travel

Explanation: Sound needs medium propagation to travel

- (iv) 1. strings

- (v) **(b)** False

Explanation: False