

- a) Vegetable cutlets, chips and lemon drink b) Chips, noodles, coke
c) Rice, noodles and burger d) Chapatti, dal, vegetable
8. A force of 200 N is applied to an object of area 2 sq. m. the pressure will be [1]
a) 200 Pa b) 400 Pa
c) 50 Pa d) 100 Pa
9. The handle of a cricket bat is usually rough to _____. [1]
a) get ball on bat b) decrease friction
c) increase friction d) get more run
10. Sound is produced by [1]
a) Vibration b) Cooling
c) Moving d) Heating
11. Lemon juice is good conductor of electricity due to [1]
a) Presence of free electron b) Presence of common salt
c) Presence of citric acid d) Absence of electron drawing agent
12. Which of the following cannot be charged easily by friction? [1]
a) A woollen cloth b) A plastic scale
c) A copper rod d) An inflated balloon
13. Which one shows lateral inversion? [1]
a) Plane mirror b) Convex mirror
c) Concave mirror d) All Plane, concave and convex mirror

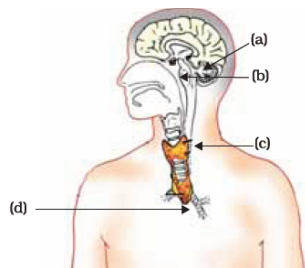
Section B

14. **State True or False:** [2]
(i) Satpura National Park is the first reserve forest of India. [1]
(ii) Rough surface has more friction than smooth surface. [1]
15. What are communicable diseases? Explain with examples. [2]
16. What do you understand by petrochemicals? [2]
17. If you hold a piece of iron wire with a pair of tongs inside a candle flame or a Bunsen burner flame, what will you observe? Will it produce a flame? [2]
18. What are the changes seen in girls at the time of puberty? [2]
19. How does loudness of sound is affected by amplitude? [2]
20. What is the application of chemical effects of electricity in our daily life? Give examples. [2]
21. Look at the figure. Can the image of the child in it be obtained on a screen? [2]



Section C

22. Soil preparation is one of the types of agricultural practices. What do you understand by soil preparation? [4]
23. State difference between coke, coal tar and coal gas? [4]
24. Explain binary fission in amoeba? [4]
25. Label the missing parts of the endocrine glands. [4]

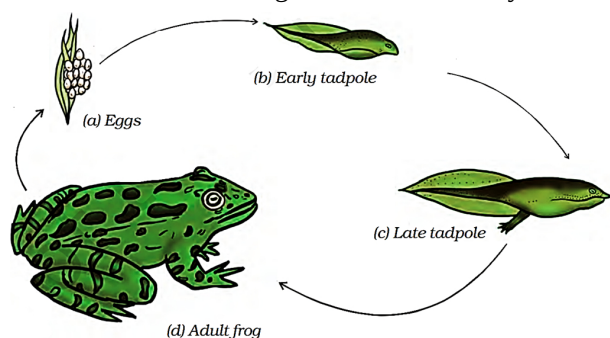


26. When a person stands on a cushion, the depression is much more than when he lies down on it. Explain with a reason. [4]
27. How do trees planted along roadside help in the reduction of noise pollution? [4]
28. What do you mean by electroplating? How does it take place? [4]
29. What is lightning. Explain the experiment conducted by Benjamin Franklin that showed sparks shared some similarity with lightning? [4]
30. Name the following: [4]
 - i. The layer of tissue that protects light sensitive inner parts of the eye and prevents internal reflection of light
 - ii. Tough opaque sheet of tissues that forms the outer covering of the eye
 - iii. The transparent, watery fluid found in between the cornea and the lens
 - iv. The spot on the retina where an object forms the sharpest image.

Section D

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

Neha has drawn the diagram related to life cycle of frog.



- (i) Name the process in which tadpoles develop into young frogs.

a) Fertilisation

b) Embedding

- c) Budding
d) Metamorphosis
- (ii) The process by which organisms make copies of themselves is called _____.
a) reproduction
b) transpiration
c) Photosynthesis
d) respiration
- (iii) Which of the following is an example of a viviparous animal?
a) Cat
b) Fish
c) Hen
d) Cobra
- (iv) In human beings, body parts _____ to those present in the adults are present from the time of birth.
- (v) Tadpoles, transform into adults capable of jumping and swimming.
a) True
b) False

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

[5]

Ankit is studying about contact forces. Firstly, he study about muscular force that it is the muscular force that enables us to perform all activities involving movement or bending of our body. All our body process is possible by muscular force. Muscular force of animal is used to carry out work. Secondly, he study about frictional force.



- (i) The force of friction always acts on all the moving objects and its direction is always opposite to the direction of motion.
- a) downward b) upward
- c) Same side d) Opposite
- (ii) Which of the following is example of frictional force?
- a) All of these b) We stop paddling a bicycle, it gradually slows down and finally comes to a stop.
- c) A car or a scooter also comes to rest once its engine is switched off. d) Boat comes to rest if we stop rowing it.
- (iii) The force exerted by our muscle is called
- a) electrostatic force b) gravitational force
- c) non-contact force d) muscular force
- (iv) When we push an object like a school bag or lift a bucket of water _____ force is applied.
- (v) Animals also make use of muscular force to carry out their physical activities and other tasks.
- a) True b) False

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

[5]

Neha is teaching her friend about electroplating she told that brand new bicycle has shiny handlebar and wheel rims. However, if these are accidentally scratched, the shiny coating comes off revealing a not so shiny surface

beneath. The women using ornaments, which appear to be made of gold. However, with repeated use, the gold coating wears off, revealing silver or some other metal beneath. In both these cases, a metal has a coating of another metal.

- (i) The Electroplating is based on
 - a) chemical effect of electricity
 - b) heating effect of electricity
 - c) physical effect of electricity
 - d) magnetic effect of electricity
- (ii) Waste from an electroplating factory must be disposed off
 - a) in the nearby cornfield
 - b) in the nearby pond
 - c) in the nearby river
 - d) according to the disposal guidelines of Waste Management Bodies
- (iii) Electroplating prevents
 - a) passing of current
 - b) shining
 - c) corrosion
 - d) dissociation
- (iv) Chromium has a _____ appearance.
- (v) Jewelry makers electroplate silver and gold on expensive metals.
 - a) True
 - b) False

Solution

Section A

1. (c) Loosening the soil
Explanation: Plough is a large agricultural implement which is used for plowing or tilling in the fields.
2. (b) fungi
Explanation: fungi
3. (d) hydrocarbons
Explanation: Petroleum is a mixture of different hydrocarbons starting from methane (CH_4) to higher hydrocarbons. Compounds of carbon and hydrogen are called as hydrocarbon.
4. (a) a building on fire
Explanation: Fire can be extinguished by removing combustible substance as in case of fire in wood log, a paper on fire and a firecracker but removing of combustible substance is not possible in case of fire in a building.
5. (c) Nilgiri
Explanation: The first biosphere reserve of India is Nilgiri.
6. (d) Parturition
Explanation: The process of delivery of the foetus is called parturition. Parturition occurs at the end of pregnancy period of 40 weeks.
7. (d) Chapatti, dal, vegetable
Explanation: The right meals for adolescents include chapatti, dal, Vegetable etc. The meal should provide carbohydrates, proteins and fats along with vitamins for proper growth and development. One should take balanced diet during puberty.
8. (d) 100 Pa
Explanation: Here, Force = 200N, Area = 2 sq m.
Pressure = Force/Area.
Pressure = $200\text{N} / 2 \text{ sq m} = 100 \text{ Pascal (Pa)}$.
9. (c) increase friction
Explanation: The handle of a cricket bat is usually rough to increase friction to have a better grip, therefore it doesn't slip out in the hand of the cricketer while batting.
10. (a) Vibration
Explanation: Sound is produced by the vibration of an object. Vibration creates a disturbance in a medium which reaches to observer's ear through the air, water, or solid medium.
11. (c) Presence of citric acid
Explanation: Lemon juice contains citric acid that gives ions on passing electric current.
12. (c) A copper rod
Explanation: Only non-conducting materials can be easily charged by friction. Copper is a highly conducting material. Therefore, a copper rod cannot be charged easily by friction.

13. (d) All Plane, concave and convex mirror
Explanation: "Lateral inversion" means the apparent reversal of the mirror image's left and right when compared with the object. If you stand in front of a plane mirror and raise your right hand, your mirror image shows your left hand. The size of the image is equal to the size of the object. Plane mirror, concave mirror, and convex mirror show a lateral inversion of light.

Section B

14. State True or False:

- (i) (a) True

Explanation: True

- (ii) (a) True

Explanation: True

15. The microbial diseases that can spread from an infected person to a healthy person through air, water, food or physical contact are called communicable diseases. Examples of such diseases include cholera, common cold, chicken pox and tuberculosis.
16. Those chemicals which are obtained from petroleum and natural gas are called petrochemicals. For example methyl alcohol, ethyl alcohol, formaldehyde, acetone, acetic acid, ethylene, benzene, toluene, vinyl chloride etc.. They are used to manufacture a wide range of products.
17. Iron wire will become red hot and glow. It will not produce a flame.
18. The various changes that occur into girls at the time of puberty are
- hair growth in the armpits and pubic region.
 - development of mammary glands or breasts.
 - onset of menstruation cycle due to production of eggs or ova by the ovaries.
 - increased oil secretion in the skin.
19. Loudness of sounds is proportional to the square of amplitude of the vibrations producing the sounds. If the amplitude becomes twice, the loudness increases by a factor of four. The unit of loudness is decibel (dB). The sound above 80 dB becomes physically painful. The loudness of sound depends on the amplitude. When the amplitude of vibration is large the sound produced is loud, when the amplitude is small the sound produced is feeble.
20. Carrying chemical reactions by the effect of electricity is called chemical effect of electric current.
- Example of Chemical Effect
- (i) **Electroplating** : One metal is coated on the other substance or metal by the effect of electric current. This is called electroplating.
- (ii) **Electrolysis** : The compound is decomposed into its constituents under the effect of electric current is called electrolysis.
21. The image of the child cannot be obtained on the screen because the image is not real. The images formed by the plane mirror are virtual, so these virtual images cannot be seen (or obtain) on the screen.

Section C

22. Soil preparation involves a loosening of the soil or turning it. This process enables the roots to penetrate easily. It aerates the roots by providing the air trapped in between the particles of soil. It also provides favourable conditions for the growth of worms and microorganisms which increase the fertility of the soil.
- Some tools used in agricultural practices are given below.
- Ploughs are used for tilling the soil, adding manure and fertilisers and for scrapping the soil.
 - Leveller is used for levelling the soil in order to prevent it from soil erosion. A plank is used to break the crumbs into fine soil.
 - Hoe was used for tilling in olden days, but these days, we use it only to remove weeds. Cultivator pulled by a tractor is also used to break the soil.

23. Coke	Coal Tar	Coal Gas
1. It is tough porous and black substance.	It is thick black liquid with an unpleasant smell.	It is a gaseous fuel.
2. It is almost pure form of carbon.	It is a mixture of 200 different carbon compounds.	It is a mixture of gases mainly methane with some carbon monoxide.
3. It is black substance obtained after heating coal in the absence of oxygen.	It is residue obtained by heating coal in the absence of oxygen.	It is obtained during the heating of coal in the absence of oxygen.

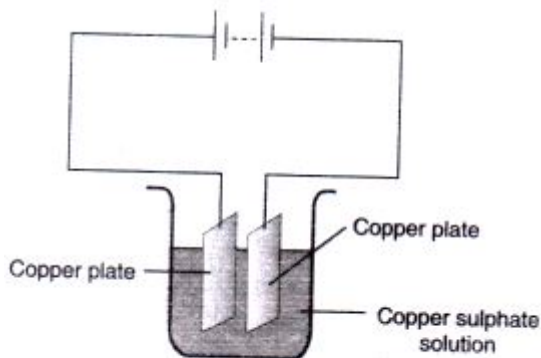
24. The type of asexual reproduction in which an animal reproduces by dividing into two individuals is called as the binary fission. It is usually found in single celled organisms such as "AMOEBA".

It begins the process of reproduction by the division of its body into two nuclei.

This is followed by division of its body into two each part receiving a nucleus.

Finally two daughter amoeba are produced from one parent amoeba.

25. a. Pineal gland
b. Pituitary gland
c. Thyroid
d. Thymus
26. When a man stands on a cushion then his two feet are in contact with the cushion. Due to this his body weight falls on a small area. On the other hand when a man lies on the cushion, his whole body comes in contact with the cushion. His weight falls over the large area because of which the depression in the cushion is less than when he stands on it.
27. Trees have the ability of absorbing sound and not letting it escape and also by reflecting the sound among the trees it lessens the speed of the sound so the impact is generally low. That is why it is advisable to plant trees alongside the roads and around buildings so that it cut down the sound.
28. The process of coating a desired metal on other metal surface by using electric current is called electroplating.
- A metal plate and the substance to be coated are dipped in a current conducting solution with conducting wires.
 - The object to be coated is attached to the negative terminal.
 - When electric current is passed through the solution, the compounds of the conducting solution start breaking.
 - The free metallic particles get deposited on the object at negative terminal of the battery.
- In this way we can get a coating of desired metal on any object by preparing suitable conducting solution and by using suitable electrodes.



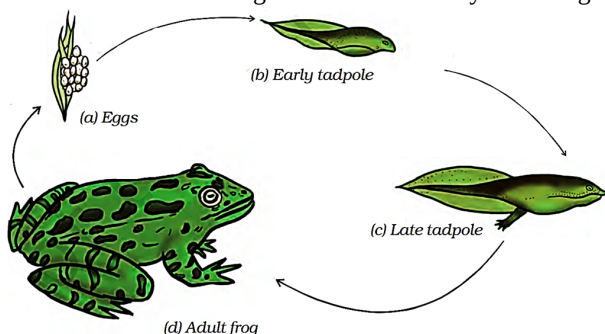
A simple circuit showing electroplating.

29. Lightning is an atmospheric discharge of electricity, which typically occurs during thunderstorms and sometimes during volcanic eruptions or dust storms. In June 1752, Benjamin Franklin raised a kite, accompanied by his son Williams as an assistant. On his end of the string he attached a key, and he tied it to a post with a silk thread. After some time he noticed that small pieces of string began to stand apart like the hair on the back of a scared dog. He then brought his hand close to the key and received a tingle of an electric shock from the key. As the rain came down, the string became soaked and the electricity began to conduct freely through the key.
30. i. choroid
ii. Sclera
iii. Aqueous humour
iv. Yellow spot

Section D

31. Read the text carefully and answer the questions:

Neha has drawn the diagram related to life cycle of frog.



- (i) **(d)** Metamorphosis
Explanation: Metamorphosis
- (ii) **(a)** reproduction
Explanation: reproduction
- (iii) **(a)** Cat
Explanation: Cat
- (iv) 1. similar
- (v) **(a)** True
Explanation: True

32. Read the text carefully and answer the questions:

Ankit is studying about contact forces. Firstly, he study about muscular force that it is the muscular force that enables us to perform all activities involving movement or bending of our body. All our body process is possible by muscular force. Muscular force of animal is used to carry out work. Secondly, he study about frictional force.



- (i) **(d)** Opposite
Explanation: Opposite
- (ii) **(a)** All of these
Explanation: All of these
- (iii) **(d)** muscular force
Explanation: muscular force
- (iv) 1. muscular
- (v) **(a)** True
Explanation: True

33. Read the text carefully and answer the questions:

Neha is teaching her friend about electroplating she told that brand new bicycle has shiny handlebar and wheel rims. However, if these are accidentally scratched, the shiny coating comes off revealing a not so shiny surface beneath. The women using ornaments, which appear to be made of gold. However, with repeated use, the gold coating wears off, revealing silver or some other metal beneath. In both these cases, a metal has a coating of another metal.

- (i) **(a)** chemical effect of electricity
Explanation: chemical effect of electricity
- (ii) **(d)** according to the disposal guidelines of Waste Management Bodies
Explanation: according to the disposal guidelines of Waste Management Bodies
- (iii) **(c)** corrosion
Explanation: corrosion
- (iv) 1. Shiny
- (v) **(b)** False
Explanation: False