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India's Number 1 Education App

PHYSICS

BOOKS - U-LIKE PHYSICS (HINGLISH)

CBSE EXAMINATION PAPER 2020

Section A

1. Define the term induced electric current.

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2. Answer question numbers (a) - (d) on the basis of your understanding of the following paragraph and the related studied concepts :

Around the year 1800, only 30 elements were known. Dobereiner in 1817 and Newlands in 1866 tried to arrange the then knon elements and

framed laws which were rejected by the scientists. Even After the rejection of the propose laws, many scientists continued to search for a pattern that correlated the properties of elements with their atomic masses.

The main credit for classifying elements goes to Mendeleev for his most important contribution to the early development of Periodic table of elements wherein he arranged the elements on the basis of their fundamental property, the atomic mass and also on the similarly of chemical properties. The formulae of their hydrides and oxides were treated as basic criteria for the classification of the elements.

However, Mendeleev's classification also had some limitations as it could not assign the position to isotopes. He left some gaps in the Periodic table.

State Mendeleev's Periodic Law.

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3. Answer question numbers (a) - (d) on the basis of your understanding of the following paragraph and the related studied concepts :

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Why did Mendeleev leave some gaps in the Periodic Table ?

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If the letter 'R' was used to represent any of the elements in the group,

then the hydride and oxide of carbon would respectively be represented as

(i) RH_4, RO (ii) RH_4, RO_2 (iii) RH_2, RO_2 (iv) RH_2, RO

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Isotopes are

(i) Atoms of an element with similar chemical properties but different atomic masses.

(ii) Atoms of different elements with similar chemical properties but different atomic masses.

(iii) Atoms of an different with different chemical properties but same atomic masses.

(iv) Atoms of different elements with different chemical properties but same atomic masses.

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6. Answer question numbers (a) - (d) on the basis of your understanding of the following paragraph and the related studied concepts :

India today is facing the problem of overuse of resources, contamination

of water and soil and lack of methods of processing the waste. The time has come for the world to say goodbye to "single-use plastics". Steps must be undertaken to develope environment-friendly substitutes, effective plastic waste collection and methods of its disposal.

Indore treated 15 lakh metric tonnes of waste in just 3 years, through biomining and bioremediation, techniques. Bioremediation involves introducing microbes into a landfill to naturally 'break' it down and biomining involves using trommel machines to sift through the waste to separate the soil and the waste component. The city managed to chip away 15 lakh metric tonnes of waste at a cost of around Rs. 10 crore. A similar experiment was successfully carries out in Ahmedabad also.

State two methods of effective plastic waste collection in your school.

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Name any two uses of "single-use plastic" in daily life.

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If we discontinue the use of plastic , how can an environment-friendly substitute be provided ?

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Do you think microbes will work similarly in landfill sites as they work in the laboratory ? Justify your answer.

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10. Which one of the following statements is correct about the human circular system ?

A. Blood transports only oxygens and not carbon dioxide.

B. Human heart has five chambers

C. Valves ensure that the blood does not flow backwards.

D. Both oxygen-rich and oxygen-deficient blood gets mixed in the heart.

Answer: C

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11. Anaerobic process

A. Takes place in yeast during fermentation.

B. takes place in the presence of oxygen.

C. produces only energy in the muscles of human beings.

D. produces ethanol, oxygen and energy

Answer: A

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12. Most of the digestion and absorption of the food takes place in the

A. small intestine

B. liver

C. stomach

D. large intestine

Answer: A

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13. Fertilisation is the process of

A. transfer of male gamete to female gamete

B. fusion of nuclei of male and female gamete

C. adhesion of male and female reproductive organs

D. the formation of gametes reproductive organ

Answer: B

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14. If a person has five resistors each of value $\frac{1}{5}\Omega$, then the maximum resistence he can obtain by connecting them is

A. 1Ω

B. 5Ω

C. 10Ω

D. 25Ω

Answer: A

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15. The resistance of a resistor is reduced to half of its initial value. In doing so, if other parameters of the circuit remain unchaned, the heating

effects in the resistor will become

A. two times

B. half

C. one-fourth

D. four times

Answer: A

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16. Fleming's Right-hand rule gives

A. magnitude of the induced current.

B. magnitude of the magnetic field

C. direction of the induced current

D. both, direction and magnitude of the induced current

Answer: C

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17. Which one of the following statements is not true about nuclear energy generation in a nuclear reactor ?

A. Energy is obtained by a process called nuclear fission

B. The nucleus of Uranium is bombarded with high energy neutrons

C. A chain reaction is set in the process

D. In this process a tremendous amount of energy is released at a controlled rate

Answer: B

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18. The biggest source of energy of Earth's surface is

A. Biomass

B. Solar radiations

C. Tides

D. Winds

Answer: B

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19. Food web is constituted by

A. relationship between the organisms and the environment

B. relationship between plants and animals

C. various interlinked food chains in an ecosystem

D. relationship between animals and environment

Answer: C

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20. Choose the incorrect statement from the following :

A. Ozone is a molecule formed by three atoms of oxygens

B. Ozone shields the surface of the earth from ultraviolet radiations.

C. Ozone is deadly poisonous

D. Ozone gets decomposed by UV radiations.

Answer: D

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21. Assertion (A) : Following is a balanced chemical equatin for the action of steam on iron:

$3Fe + 4H_2O \rightarrow Fe_3O_4 + 4H_2$

Reason (R) : The law of conservation of mass holds good for a chemical equation.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion.

B. Both (A) and (R) are true but (R) is not correct explanation of the assertion.

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

Answer: A

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22. Assertion (A) : The sex of a child in human beings will be determined by the type of chromosome he/she inherits from the father.

Reason (R) : A child who inherits 'X' chromosome from his father would be a girl (XX) , while a child who inherits a 'Y' chromosome from the father would be a boy (XY).

A. Both (A) and (R) are true and (R) is correct explanation of the assertion.

B. Both (A) and (R) are true but (R) is not correct explanation of the assertion.

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

Answer: A

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Section B

1. Lead nitrate solution is added to a tes tube containing potassium iodide solution.

(a) Write the name and colour of the compound precipitated.

(b) Write the balanced chemical equation for the reaction involved.

(c) Name the type of this reaction justifying your answer.

View Text Solution

2. What happens when food materials containing fats and oils are left for a long time ? List two observable changes and suggest three ways by which this phenomenon can be prevented.

View Text Solution

3. List three differentiating features between the processes of galvanisation and alloying.

View Text Solution

4. Compare in tubular form the reactivities of the following metals with cold and hot water :

(a) Sodium (b) Calcium (c) Magnesium

View Text Solution

5. Carbon, a member of group 14 forms a large number of carbon compounds estimated to be about 3 million. Why is this property not exhibited by other elements of this group? Explain.

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6. A cheetah, on seeing a prey, moves towards him at a very high speed. What causes the movement of his muscles ? How does the chemistry of cellular components of muscles change during this event?

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7. Define geotropism. Draw a labelled diagram of a plant showing geotropic movements of its parts.

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8. Define the term evolution. "Evolution cannot be equated with progress." Justify this statement.

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9. "During the course of evolution organs or features may be adapted for new functions". Explain this fact by choosing an appropriate example.

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10. A concave mirror is used for image formation for different positions of an object. What inferences can be drawn about the following when an object is placed at a distance of 10 cm from the pole of a concave mirror of focal length 15cm ?

(a) position of the image (b) size of the image (c) nature of the image

Draw a labelled ray diagram to justify your inferences.

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11. The refractive index of a medium 'x' with respect to a medium y is 2/3 and the refractive index of medium with respect to medium 'z' is 4/3. Find the refractive index of medium 'z' with respect to medium 'x'. If the speed of light in medium 'x' is $3 \times 10^8 ms^{-1}$, into to calculate the speed of light in medium 'y'.

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12. A person may suffer from both myopia and hypermetropia defects.

(a) What is this condition called ?

(b) When does it happen ?

(c) Name the type of lens often required by the person suffering from this defect draw labelled diagram of such lenses.

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13. How will use two identical glass prisms so that a narrow beam of white light incident on one prism emerges out of the second prism as white light ? Draw and label the ray diagram.

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14. A cloth strip dipped in onion juice is used for testing a liquid 'X'. The liquid 'X' changes its odour. Which type of an indicator is onion juice ? The liquid 'X' turns blue litmus red. List the observations the liquid 'X' will show on reacting with the following :

(a) zinc granules

(b) solid sodium carbonate

write the chemical equation for the reaction involved.

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15. Define water of crystallisation. Give the chemical formula for two compounds as examples. How can it be proved that the water of

crystallisation makes a difference in the state and colour of the compounds?

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Section C

1. (i) Write two properties of gold which make it the most suitable metal for ornaments.

(ii) Name two metals which are the best conductors of heat.

(iii) Name two metals which melt when you keep them on your palm.

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2. Explain the formation of ionic compound CaO with electron-dot structure. Atomic numbers of calcium and oxygen are 20 and 8 respectively.

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3. Why is nutrition necessary for the human body ?

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4. What causes movement of food inside the alimentary canal ?

View Text Solution

5. Why is small intestine in herbivores longer than in carnivores ?

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6. What will happen if mucus is not secreted by the gastric glands

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7. Draw a neat diagram showing fertilization in a flower and label (a) Pollen tube, (b) male germ cell and (c) female germ cell, on it. Explain the process of fertilization in flower what happens to the (i) ovary and ovule after fertilisation ?

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8. What is puberty ?

View Text Solution

9. Describe in brief the functions of the following parts in the human male reproductive system :

(i) Testes (ii) Seminal vesicle (iii) Vas deferens (iv) urethra

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10. Why are testes located outside the abdominal cavity ?

View Text Solution

11. State how sperms move towards the female germ cell.

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12. Draw a schematic diagram of a circuit consisting of a battery of 3 cells of 2V each, a combination of three resistors of $10\Omega, 20\Omega$ and 30Ω connected in a parallel, a plug key and an ammeter, all connected in series. Use the circuit to find the value of the following :

(a) current through each resistor

(b) total current in the circuit.

(c) total effective resistance of the circuit.

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13. Two identical resistors, each of resistance are connected in (i) series, and (ii) parallel, in turn to a battery of 6 V. Calculate the ratio of the power consumed in the combination of resistors in each case.

View Text Solution

14. State Fleming's left-hand rule.

View Text Solution

15. List three characteristic features of the electric current used in our homes.

View Text Solution

16. What is a fuse ? Why is it called a safety device ?

View Text Solution

17. Why is it necessary to earth metallic electric appliances ?

View Text Solution

Section A

1. Name a cyclic unsaturated carbon compound.

View Text Solution

2. The change in magnetic field lines in a coil is the cause of induced electric current in it.Name the underlying phenomenon.

View Text Solution

3. Answer question numbers (a) to (d) on the basis of your understanding of the following paragraph and the related studied concepts.

The growing size of the human population is a cause of concern for all people. The rate of birth and death in a given population will determine its size. Reproduction is the process by which organisms increase their population. The process of sexual maturation for reproduction is gradual and takes place while general body growth is still going on. Some degree of sexual maturation does not necessarily mean that the mind or body is ready for sexual acts or for having and bringing up children. Various contraceptive devices are being used by human beings to control the size of population.

List two common signs of sexual maturation in boys and girls.

View Text Solution

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What is the result of reckless female foeticide ?

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of population.

Which contraceptive method changes the hormonal balance of the body ?

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Write two factors that determine the size of a population.

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7. Answer question numbers (a) to (d) on the basis of your understanding of the following paragraph and the related studied concepts.

Human body is made up of five important components, of which water is the main component. Food as well as potable water are essential for every human being. The food is obtained from plants through agriculture. Pesticides are being used extensively for a high yield in the fields. These pesticides are absorbed by the plants from the soil along with water and minerals and from the water bodies these pesticides are taken up by the aquatic animals and plants. As these chemicals are not biodegradable, they get accumulated progressively at each trophic level. The maximum concentration of these chemicals gets accumulated in our bodies and greatly affects the health of our mind and body.

Why is the maximum concentration of pesticides found in human beings ?

View Text Solution

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Give one method which could be applied to reduce our intake of pesticides through food to some extent.

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Various steps in a food chain represent :

A. Food web

B. Trophic level

C. Ecosystem

D. Biomagnification

Answer:

View Text Solution

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With regard to various food chains operating in an ecosystem, man is a :

A. Consumer

B. Producer

C. Producer and consumer

D. Producer and decomposer

Answer:

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11. Calcium oxide reacts vigorously with water to produce slaked lime.

$$CaO \quad (s) + H_2O \quad (I) \rightarrow Ca(OH)_2 \quad (aq)$$

This reaction can be classified as :

(A) Combination reaction

(B) Exothermic reaction

(C) Endothermic reaction

(D) Oxidation reaction

A. (A) and (C)

B. (C) and (D)

C. (A), (C) and (D)

D. (A) and (B)

Answer: D

View Text Solution

12. When hydrogen sulphide gas is passed through a blue solution of copper sulphate, a black precipitate of copper sulphide is obtained and the sulphuric acid so formed remains in the solution. The reaction is an example of a :

A. Combination reaction.

B. Displacement reaction.

C. Decomposition reaction.

D. Double displacement reaction.

Answer: D

View Text Solution

13. In a double displacement reaction such as the reaction between sodium sulphate solution and barium chloride solution :

(A) exchange of atoms takes place.

(B) exchange of ions takes place.

(C) a precipitate is produced.

(D) an insoluble salt is produced.

The correct option is :

A. (B) and (D)

B. (A) and (C)

C. only (B)

D. (B), (C) and (D)

Answer: D

View Text Solution

14. Baking soda is a mixture of :

A. Sodium carbonate and acetic acid.

B. Sodium carbonate and tartaric acid.

C. Sodium hydrogen carbonate and tartaric acid.

D. Sodium hydrogen carbonate and acetic acid.

Answer: C

View Text Solution

15. The chemical formula for plaster of Paris is :

A. $CaSO_4.2H_2O$

B. $CaSO_4.\ H_2O$

C. $CaSO_4.\frac{1}{2}H_2O$

D. $2CaSO_4.H_2O$

Answer: C

View Text Solution

16. The laws of reflection hold true for :

A. plane mirrors only.

B. concave mirrors only.

C. convex mirrors only.

D. all reflecting surfaces.

Answer: D

View Text Solution

17. When an object is kept within the focus of a concave mirror, an enlarged image is formed behind the mirror. This image is :

A. real.

B. inverted.

C. virtual and inverted.

D. virtual and erect.

Answer: D

View Text Solution

18. At the time of short circuit, the electric current in the circuit :

A. vary continuously.

B. does not change.

C. reduces substantially.

D. increases heavily.

Answer: D

View Text Solution

19. Two bulbs of 100 W and 40 W are connected in series. The current through the 100 W bulb is 1 A. The current through the 40 W bulb will be :

A. 0.4 A

B. 0.6 A

C. 0.8 A

D. 1A

Answer: D

View Text Solution

20. Which one of the following is responsible for the sustenance of underground water ?

A. Loss of vegetation cover

B. Diversion for high water demanding crops

C. Pollution from urban wastes

D. Afforestation

Answer: D

View Text Solution

21. Incomplete combustion of coal and petroleum :

(A) increases air pollution.

(B) increases efficiency of machines.

(C) reduces global warming.

(D) produce poisonous gases.

The correct option is :

A. (A) and (B)

B. (A) and (D)

C. (B) and (C)

D. (C) and (D)

Answer: B

View Text Solution

22. Assertion (A) : Esterification is a process in which a sweet smelling substance is produced.

Reason (R) : When esters react with sodium hydroxide, an alcohol and sodium salt of carboxylic acid are obtained.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion.

B. Both A and R are true but R is not the correct explanation of the Assertion.

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

Answer: B

View Text Solution

23. Assertion (A) : In the process of nuclear fission, the amount of nuclear energy generated by the fission of an atom of uranium is so tremendous that it produces 10 million times the energy produced by the combustion of an atom of carbon from coal.

Reason (R) : The nucleus of a heavy atom such as uranium, when bombarded with low energy neutrons, splits apart into lighter nuclei. The mass difference between the original nucleus and the product nuclei gets converted to tremendous energy.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion.

B. Both A and R are true but R is not the correct explanation of the Assertion.

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

Answer: A

View Text Solution

24. Covalent compounds have low melting and boiling point. Why?

View Text Solution

25. Answer question numbers 3(a) to 3(d) on the basis of your understanding of the following information and related studied concepts.

Thyroid gland is a bilobed structure situated in our neck region. It secretes a hormone called thyroxine. Iodine is necessary for the thyroid

gland to make thyroxine. Thyroxine regulates carbohydrate, protein and fat metabolism in the body. It promotes growth of body tissues also. When there is an excess of thyroxine in the body, a person suffers from hyperthyroidism and if this gland is underactive it results in hypothyroidism. Hyperthyroidism is diagnosed by blood tests that measure the levels of thyroxine and Thyroid Stimulating Hormone (TSH). Hypothyroidism is caused due to the deficiency of iodine in our diet resulting in a disease called goitre. Iodised salt can be included in our diet to control it.

Where is thyroid gland situated in our body ?

View Text Solution

26. Answer question numbers 3(a) to 3(d) on the basis of your understanding of the following information and related studied concepts.

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State the function of thyroxine in human body.

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What is hyperthyroidism ?

View Text Solution

28. Answer question numbers 3(a) to 3(d) on the basis of your understanding of the following information and related studied concepts.

Thyroid gland is a bilobed structure situated in our neck region. It secretes a hormone called thyroxine. Iodine is necessary for the thyroid gland to make thyroxine. Thyroxine regulates carbohydrate, protein and fat metabolism in the body. It promotes growth of body tissues also. When there is an excess of thyroxine in the body, a person suffers from

hyperthyroidism and if this gland is underactive it results in hypothyroidism. Hyperthyroidism is diagnosed by blood tests that measure the levels of thyroxine and Thyroid Stimulating Hormone (TSH). Hypothyroidism is caused due to the deficiency of iodine in our diet resulting in a disease called goitre. Iodised salt can be included in our diet to control it.

How can we control hypothyroidism ?

View Text Solution

29. Answer question numbers 4(a) to 4(d) on the basis of your understanding of the following paragraph and the related studied concepts.

Geothermal energy is the energy produced by the heat of molten rocks formed in the deeper hot regions of the earth's crust. This energy is harnessed to generate electricity. When water is made to flow deep underground in the rocks it returns as steam (or hot water, which is later converted to steam) to drive a turbine on an electric power generator. In India, exploration and study of geothermal fields started in 1970. The

Geological Survey in India has identified 350 geothermal energy locations in the country. The most promising of these is in Puga valley of Ladakh. The estimated potential for geothermal energy in India is about 10000 MW. There are seven geothermal provinces in India namely the Himalayas, Sohna, West coast, Cambay, Son-Narmada-Tapi, Godavari and Mahanadi. Most power stations in India produce Alternating Current (A.C.).

What are geothermal energy hot-spots ?

View Text Solution

30. Answer question numbers 4(a) to 4(d) on the basis of your understanding of the following paragraph and the related studied concepts.

Geothermal energy is the energy produced by the heat of molten rocks formed in the deeper hot regions of the earth's crust. This energy is harnessed to generate electricity. When water is made to flow deep underground in the rocks it returns as steam (or hot water, which is later converted to steam) to drive a turbine on an electric power generator. In India, exploration and study of geothermal fields started in 1970. The

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Name two countries, other than India, where power plants based on geothermal energy are operational.

View Text Solution

31. Answer question numbers 4(a) to 4(d) on the basis of your understanding of the following paragraph and the related studied concepts.

Geothermal energy is the energy produced by the heat of molten rocks formed in the deeper hot regions of the earth's crust. This energy is harnessed to generate electricity. When water is made to flow deep underground in the rocks it returns as steam (or hot water, which is later converted to steam) to drive a turbine on an electric power generator. In

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Name the phenomenon that explains the working of an electric generator.

View Text Solution

32. Answer question numbers 4(a) to 4(d) on the basis of your understanding of the following paragraph and the related studied concepts.

Geothermal energy is the energy produced by the heat of molten rocks formed in the deeper hot regions of the earth's crust. This energy is harnessed to generate electricity. When water is made to flow deep underground in the rocks it returns as steam (or hot water, which is later

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State an important advantage of using A.C. over D.C.

View Text Solution

33. On the basis of electronic configuration of 3X, the group number and period of the element 'X' is :

A. Group 15 period 2

B. Group 13 period 2

C. Group 9 period 5

D. Group 13 period 5

Answer: B

View Text Solution

34. An element 'X' with atomic number 11 forms a compound with element 'Y' with atomic number 8. The formula of the compound formed is

A. XY

B. X_2Y

C. XY_2

D. X_2Y_3

Answer: B

View Text Solution

35. A visually challenged student, has to perform a lab test to detect the presence of acid in a given solution. The acid-base indicator preferred by

him will be :

A. Blue litmus.

B. Clove oil.

C. Red cabbage extract.

D. Hibiscus extract.

Answer: B

View Text Solution

36. Identify 'x', 'y' and 'z' in the following reaction :

$$2KClO_3(x) \xrightarrow{(y)} 2KCl(x) + O_2(z)$$

A. x = gas, y = reaction condition, z = gas

B. x = solid, y = liquid, z = gas

C. x = number of moles of $KClO_3$, y = reaction condition, z = no. of molecules of oxygen.

D. x = physical state of $KClO_3$ and KCI, y = reaction condition, z = physical state of O_2.

Answer: D

View Text Solution

37. Bandharas and Tals are age old water harvesting concepts/structures found in

A. Bihar

B. Maharashtra

C. Tamil Nadu.

D. Rajasthan

Answer: B

View Text Solution

38. Which of the following are water intensive crops ?

A. Wheat and rice

B. Wheat and sugarcane

C. Sugarcane and rice

D. Wheat and gram

Answer: A

View Text Solution

39. The most poisonous product formed by incomplete combustion of fossil fuels is

A. Carbon dioxide.

B. Nitrogen dioxide

C. Carbon monoxide.

D. Sulphur dioxide.

Answer: C

View Text Solution

40. The maximum resistance which can be made using four resistors each of 2 Ω is

A. 2 Ω

B. 4 Ω

C. 8 Ω

D. 16 Ω

Answer: C

View Text Solution

41. Consider the following reasons for the reddish appearance of the sun at the sunrise or the sunset :

(A) Light from the sun near the horizon passes through thinner layers of air.

(B) Light from the sun covers larger distance of the earth's atmosphere before reaching our eyes.

(C) Near the horizon, most of the blue light and shorter wavelengths are scattered away by the particles.

(D) Light from the sun near the horizon passes through thicker layers of air.

The correct reasons are

A. (A) and (C) only.

B. (B), (C) and (D).

C. (A) and (B) only.

D. (C) and (D) only.

Answer: B

View Text Solution

42. Person suffering from cataract has

A. elongated eyeball.

B. excessive curvature of eye lens.

C. weakened ciliary muscles.

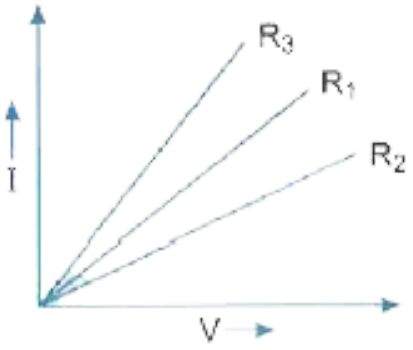
D. opaque eye lens.

Answer: D

View Text Solution

43. A student plots V-I graphs for three samples of nichrome wire with resistances R_1, R_2 and R_3.

Choose from the following the statement that holds true for this graph.



A. $R_1 = R_2 = R_3$

B. $R_1 > R_2 > R_3$

C. $R_3 > R_2 > R_1$

D. $R_2 > R_1 > R_3$

Answer: D

View Text Solution

44. Assertion (A): The metals and alloys are good conductors of electricity.

Reason (R) : Bronze is an alloy of copper and tin and it is not a good conductor of electricity.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion.

B. Both (A) and (R) are true but (R) is not the correct explanation of the assertion.

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

Answer: D

View Text Solution

45. Assertion (A) : Ethanoic acid is also known as glacial acetic acid.

Reason (R) : The melting point of pure ethanoic acid is 290 K and hence it often freezes during winters in cold climates.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion.

B. Both (A) and (R) are true but (R) is not the correct explanation of the assertion.

C. (A) is true but (R) is false.

D. (A) is false but (R) is true.

Answer: A

View Text Solution

46. Covalent compounds are generally poor conductors of electricity. Why ?

View Text Solution

47. State the common characteristic of the following elements : Boron, Silicon, Germanium and Arsenic

View Text Solution

48. State the Periodic Law on which the Modem Periodic Table is based

View Text Solution

49. On the basis of your understanding of the following paragraph and the related studied concepts. Solar power in India is a fast developing industry. The country's solar installed capacity reached 30.071 GW as of 31 July 2019. India has the lowest capital cost per MW to install solar power plants. Solar electricity generation recorded nearly 3.4% of total utility electricity generation in January 2019. The following table shows Annual Solar Power Generation of the last six years.

Year	*Solar Power Generation* (TW h)
2013-14	3.35
2014-15	4.60
2015-16	7.45
2016 -17	12.09
2017-18	25.87
2018-19	39.27

Our country is lucky to receive solar energy for the greater part of the year. It is estimated that during a year India receives the energy

equivalent to more than 5000 trillion kW h from the Sun.

What are solar cells ?

View Text Solution

50. On the basis of your understanding of the following paragraph and the related studied concepts. Solar power in India is a fast developing industry. The country's solar installed capacity reached 30.071 GW as of 31 July 2019. India has the lowest capital cost per MW to install solar power plants. Solar electricity generation recorded nearly 3.4% of total utility electricity generation in January 2019. The following table shows Annual Solar Power Generation of the last six years.

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2018-19	39.27

How much voltage can be developed and how much electricity can be produced by one typical-solar cell when exposed to the Sun ?

View Text Solution

51. On the basis of your understanding of the following paragraph and the related studied concepts. Solar power in India is a fast developing industry. The country's solar installed capacity reached 30.071 GW as of 31 July 2019. India has the lowest capital cost per MW to install solar power plants. Solar electricity generation recorded nearly 3.4% of total utility electricity generation in January 2019. The following table shows Annual Solar Power Generation of the last six years.

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The future of power generation by solar energy is bright in India. Give reason.

View Text Solution

52. On the basis of your understanding of the following paragraph and the related studied concepts. Solar power in India is a fast developing industry. The country's solar installed capacity reached 30.071 GW as of 31 July 2019. India has the lowest capital cost per MW to install solar power plants. Solar electricity generation recorded nearly 3.4% of total utility electricity generation in January 2019. The following table shows Annual Solar Power Generation of the last six years.

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2017-18	25.87
2018-19	39.27

List two advantages of solar cells.

View Text Solution

53. Are based on the table and the related information in passage given below.

Thyroid Stimulating Hormone (TSH) stimulates thyroid gland to produce thyroxine. Study the table given below :

Table : TSH levels during pregnancy

Stage of pregnancy	*Normal* (mU/L)	*Low* (mU/L)	*High* (mU/L)
First trimester	0.2 – 2.5	< 0.2	2.5 – 10
Second trimester	0.3 – 3.0	< 0.3	3.01 – 4.5
Third trimester	0.8 – 5.2	< 0.8	> 5.3

It is important to monitor TSH levels during pregnancy. High TSH levels and hypothyroidism can especially affect chances of miscarriage. Therefore, proper medication in consultation with a doctor is required to regulate/control the proper functioning of the thyroid gland.

Give the full form of TSH.

View Text Solution

54. Are based on the table and the related information in passage given below.

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It is important to monitor TSH levels during pregnancy. High TSH levels and hypothyroidism can especially affect chances of miscarriage. Therefore, proper medication in consultation with a doctor is required to

regulate/control the proper functioning of the thyroid gland.

State the main function of TSH.

View Text Solution

55. Are based on the table and the related information in passage given below.

Thyroid Stimulating Hormone (TSH) stimulates thyroid gland to produce thyroxine. Study the table given below :

Table : TSH levels during pregnancy

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It is important to monitor TSH levels during pregnancy. High TSH levels and hypothyroidism can especially affect chances of miscarriage. Therefore, proper medication in consultation with a doctor is required to regulate/control the proper functioning of the thyroid gland.

Why do TSH levels in pregnant women need to be monitored ?

View Text Solution

56. Are based on the table and the related information in passage given below.

Thyroid Stimulating Hormone (TSH) stimulates thyroid gland to produce thyroxine. Study the table given below :

Table : TSH levels during pregnancy

Stage of pregnancy	*Normal* (mU/L)	*Low* (mU/L)	*High* (mU/L)
First trimester	0.2 – 2.5	< 0.2	2.5 – 10
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It is important to monitor TSH levels during pregnancy. High TSH levels and hypothyroidism can especially affect chances of miscarriage. Therefore, proper medication in consultation with a doctor is required to regulate/control the proper functioning of the thyroid gland.

A pregnant woman has TSH level of 8.95 mU/L. What care is needed for her ?

View Text Solution

57. The image distance from the eye lens in the normal eye when we increase the distance of an object from the eye

A. increases.

B. decreases

C. remains unchanged.

D. depends on the size of the eyeball

Answer: C

View Text Solution

58. The values of mA and μA are

A. 10^{-6} A and 10^{-9} A respectively.

B. 10^{-3} A and 10^{-6} A respectively.

C. 10^{-3} A and 10^{-9} A respectively.

D. 10^{-6} A and 10^{-3} A respectively.

Answer: B

View Text Solution

59. A cylindrical conductor of length 'I' and uniform area of cross-section 'A' has resistance 'R'.

Another conductor of length 2.5 I and resistance 0.5 R of the same material has area of crosssection

A. 5A

B. 2.5A

C. 0.5 A

D. $\frac{1}{5}$ A

Answer: A

View Text Solution

60. Consider the following criticisms that are generally addressed when a new project is launched :

I. Displacement of peasants and local tribals without compensation.

II. Swallowing up large amount of public money without any benefits.

III. Deforestation and loss of biodiversity. The criticisms about large dams in particular are

A. I and II

B. II and III

C. I and III

D. I, II and III

Answer: C

View Text Solution

61. Switching off unnecessary lights and fans and repairing leaking taps correctly defines which term of 5R's ?

A. Recycle

B. Reuse

C. Repurpose

D. Reduce

Answer: D

View Text Solution

62. The Reni village of Garhwal is famous for

A. Monocultures of pine, teak and eucalyptus.

B. Chipko Movement

C. Extensive biodiversity

D. Participation of local people in efficient management of forests

Answer: B

View Text Solution

63. Strong heating of ferrous sulphate leads to the formation of a brown solid and two gases. This reaction can be categorised as

A. displacement and redox.

B. decomposition and redox.

C. displacement and endothermic.

D. decomposition and exothermic.

Answer: B

View Text Solution

64. If 10 mL of H_2SO_4 is mixed with 10 mL of $Mg(OH)_2$ of the same concentration, the resultant solution will give the following colour with universal indicator :

A. Red

B. Yellow

C. Green

D. Blue

Answer: D

View Text Solution

65. An element X with atomic number 12 forms a compound with element Y with atomic number 17. The formula of the compound formed is

A. XY

B. XY_2

C. X_2Y

D. X_2Y_3

Answer: B

View Text Solution

66. An element X with atomic number 12 forms a compound with element Y with atomic number 17. The formula of the compound formed is

A. Group 1 and Period 3

B. Group 16 and Period 3

C. Group 17 and Period 3

D. Group 2 and Period 3

Answer: B

View Text Solution

67. Assertion (A) : Carbon has a strong tendency to either lose or gain electrons to attain noble gas configuration.

Reason (R) : Carbon has four electrons in its outermost shell and has the tendency to share electrons with carbon or other elements.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion

B. Both (A) and (R) are true but (R) is not the correct explanation of the assertion.

C. (A) is true but (R) is false

D. (A) is false but (R) is true.

Answer: B

View Text Solution

68. Assertion (A) : At high temperatures, metal wires have a greater chance of short circuiting.

Reason (R) : Both resistance and resistivity of a material vary with temperature.

A. Both (A) and (R) are true and (R) is correct explanation of the assertion

B. Both (A) and (R) are true but (R) is not the correct explanation of the assertion.

C. (A) is true but (R) is false

D. (A) is false but (R) is true.

Answer: B

View Text Solution

Section B

1. 1 g of copper powder was taken in a China dish and heated. What change takes place on heating ? When hydrogen gas is passed over this heated substance, a visible change is seen in it. Give the chemical equations of reactions, the name and the colour of the products formed in each case.

View Text Solution

2. List the important products of the Chlor-alkali process. Write one important use of each.

View Text Solution

3. How is washing soda prepared from sodium carbonate ? Give its chemical equation. State the type of this salt. Name the type of hardness of water which can be removed by it ?

View Text Solution

4. 3 mL of ethanol is taken in a test tube and warmed gently in a water bath. A 5% solution of alkaline potassium permanganate is added first drop by drop to this solution, then in excess.

(i) How is 5% solution of $KMnO_4$ prepared ?

(ii) State the role of alkaline potassium permanganate in this reaction. What happens on adding it in excess ?

(iii) Write chemical equation of this reaction.

View Text Solution

5. A squirrel is in a scary situation. Its body has to prepare for either fighting or running away, State the immediate changes that take place in its body so that the squirrel is able to either fight or run ?

View Text Solution

6. Why is chemical communication better than electrical impulses as a means of communication between cells in a multi-cellular organism ?

View Text Solution

7. Define the term pollination. Differentiate between self pollination and cross pollination. What is the significance of pollination ?

View Text Solution

8. What are homologous structures ? Give an example. Is it necessary that homologous structures always have a common ancestor. Justify your answer.

View Text Solution

9. Why is Tyndall effect shown by colloidal particles ? State four instances of observing the Tyndall effect.

View Text Solution

10. Differentiate between a glass slab and a glass prism. What happens when a narrow beam of (i) a monochromatic light, and (ii) white light passes through (a) glass slab and (b) glass prism ?

View Text Solution

11. Draw a labelled diagram to show (i) reddish appearance of the sun at the sunrise or the sunset and (ii) white appearance of the sun at noon when it is overhead.

View Text Solution

12. A V-I graph for a nichrome wire is given below. What do you infer from this graph ? Draw a labelled circuit diagram to obtain such a graph.

View Text Solution

13. (a) Write the mathematical expression for Joule's law of heating.

(b) Compute the heat generated while transferring 96000 coulomb of charge in two hours through a potential difference of 40 V.

View Text Solution

14. Give reasons for the following:

(i) Only one half of water molecule is shown in the formula of Plaster of Paris.

(ii) Sodium hydrogen carbonate is used as an antacid.

(iii) On strong heating, blue coloured copper sulphate crystals turn white.

View Text Solution

15. (i) Draw a labelled diagram to show the preparation of hydrogen chloride gas in laboratory.

(ii) Test the gas evolved first with dry and then with wet litmus paper. In which of the two cases, does the litmus paper show change in colour ?

(iii) State the reason of exhibiting acidic character by dry HCl gas / HCl solution.

View Text Solution

16. A compound 'A' is used in the manufacture of cement. When dissolved in water, it evolves a large amount of heat and forms compound 'B'.

(i) Identify A and B.

(ii) Write chemical equation for the reaction of A with water.

(iii) List two types of reaction in which this reaction may be classified.

View Text Solution

17. The position of three elements A, B and C in the Modern periodic table is as follows :

Group → / Period ↓	1	2	13	14	15	16	17	18
1	*B*							
2							*A*	
3						*C*		

Write formula of compound formed between :

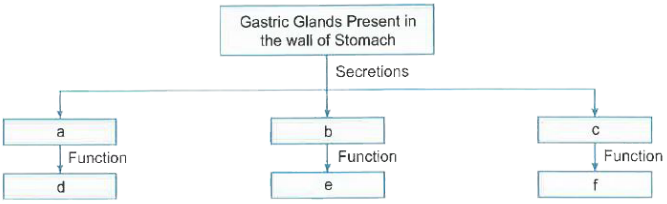
(i) B and A,

(ii) B and C

(b) Is any of the three elements a metal ? Give reason to justify your answer.

View Text Solution

18. Complete the following flow chart as per the given instructions :



View Text Solution

19. Construct a terrestrial food chain comprising four trophic levels.

(b) What will happen if we kill all the organisms in one trophic level ?

(c) Calculate the amount of energy available to the organisms at the fourth trophic level if the energy available to the organisms at the second trophic level is 2000 J.

View Text Solution

20. Complete the following table :

	Oxygen	*Ozone*
Formula	(*i*) _____	(*ii*) _____
Benefits to biotic component	(*iii*) _____	(*iv*) _____

(b) How is ozone formed at the higher levels of atmosphere ?

View Text Solution

21. What are fossils ?

(b) Describe two methods of determining the age of fossils.

View Text Solution

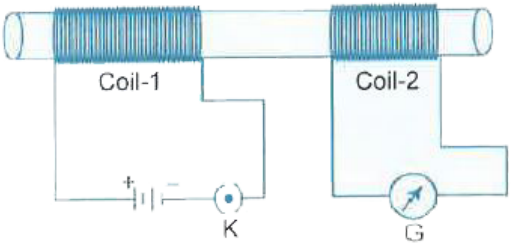
22. Why did Mendel carry out an experiment to study inheritance of two traits in garden-pea ?

(b) What were his findings with respect to inheritance of traits in F1 and F2 generation ?

(c) State the ratio obtained in the F2 generation in the above mentioned experiment.

View Text Solution

23. Two coils of insulated copper wire are wound over a non-conducting cylinder as shown. Coil 1 has comparative large number of turns. State your observations, when



(i) Key K is closed. (ii) Key K is opened

Give reason for each of your observations.

View Text Solution

24. List two causes of Hypermetropia.

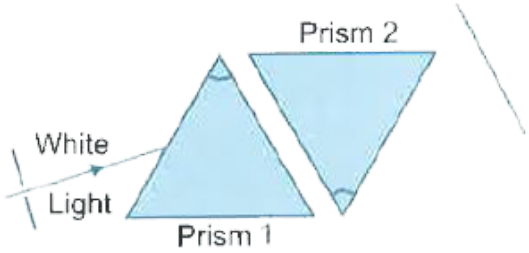
(b) Draw ray diagrams showing (i) a hypermetropic eye and (ii) its correction using suitable optical device.

View Text Solution

25. State the relation between colour of scattered light and size of the scattering particle.

(b) The apparent position of an object, when seen through the hot air, fluctuates or wavers. State the basic cause of this observation.

(c) Complete the path of white light when it passes through two identical prisms placed as shown:



View Text Solution

26. Draw ray diagrams for the following cases when a ray of light :

(i) passing through centre of curvature of a concave mirror is incident on it.

(ii) parallel to principal axis is incident on convex mirror.

(iii) is passing through focus of a concave mirror incident on it.

View Text Solution

27. A shining metal 'M', on burning gives a dazzling white flame and changes to a white powder 'N'.

Identify 'M' and 'N'.

View Text Solution

28. A shining metal 'M', on burning gives a dazzling white flame and changes to a white powder 'N'.

Represent the above reaction in the form of a balanced chemical equation.

View Text Solution

29. A shining metal 'M', on burning gives a dazzling white flame and changes to a white powder 'N'.

Does 'M' undergo oxidation or reduction in this reaction ? Justify.

View Text Solution

30. In the electrolysis of water

Name the gases liberated at anode and cathode.

View Text Solution

31. In the electrolysis of water

Why is it that the volume of gas collected on one electrode is two times that on the other electrode

View Text Solution

32. In the electrolysis of water

What would happen if dil. H_2SO_4 is not added to water ?

View Text Solution

33. A chemical compound X is used in the soap and glass industry. It is prepared from brine.

Write the chemical name, common name and chemical formula of 'X'.

View Text Solution

34. A chemical compound X is used in the soap and glass industry. It is prepared from brine.

Write the equation involved in its preparation

View Text Solution

35. A chemical compound X is used in the soap and glass industry. It is prepared from brine.

What happens when it is treated with water containing Ca or Mg salts ?

View Text Solution

36. From the elements Li, K, Mg, C, Al, S identify the elements belonging to the same group.

View Text Solution

37. From the elements Li, K, Mg, C, Al, S identify the element which has the tendency to lose two electrons.

View Text Solution

38. From the elements Li, K, Mg, C, Al, S identify the

element which prefers sharing of electrons to complete its octet.

View Text Solution

39. From the elements Li, K, Mg, C, Al, S identify the

most metallic element.

View Text Solution

40. From the elements Li, K, Mg, C, Al, S identify the

element that forms acidic oxide.

View Text Solution

41. From the elements Li, K, Mg, C, Al, S identify the

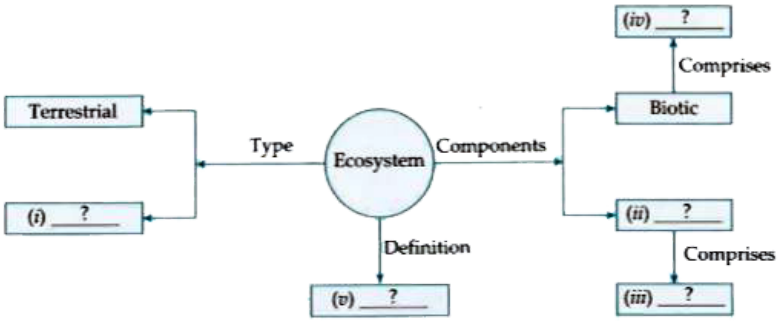
element that belongs to group 13.

View Text Solution

42. What is meant by trophic level in a food chain ? Construct a terrestrial food chain with four trophic levels. The energy flow in a food chain is always unidirectional. Why

View Text Solution

43. Complete the following flow chart based on ecosystem and its components.



View Text Solution

44. In the process of respiration, state the function of alveoli.

View Text Solution

45. Rate of breathing in aquatic organisms is much faster than that in terrestrial organisms. Give reasons

View Text Solution

46. Complete the following pathway showing the breakdown of glucose

Glucose

$$\xrightarrow{\text{in cytoplasm}} (i) \xrightarrow[3-\text{carbon molecules} + \text{energy}]{} \xrightarrow[\text{in mitochondria}]{\text{presence of} O_2} (ii) \xrightarrow{?} + H_2O + \text{Ener}$$

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47. Why is the Fl progeny always of tall plants when a tall pea plant is crossed with a short pea plant

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48. How is F2 progeny obtained by self-pollination of Fl progeny different from Fl progeny ?

Give reason for this observation.

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49. State a conclusion that can be drawn on the basis of this observation

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50. What provides nutrition to human sperms ? State the genetic constitution of a sperm.

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51. Mention the chromosome pair present in zygote which determines the sex of (i) a female child, and (ii) a male child

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52. Draw ray diagram in each of the following cases to show what happens atfer reflection to the incident ray when

it is parallel to the principal axis and falling on a convex mirror.

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53. Draw ray diagram in each of the following cases to show what happens atfer reflection to the incident ray when

it is falling on a concave mirror while passing through its principal focus.

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54. Draw ray diagram in each of the following cases to show what happens atfer reflection to the incident ray when

it is coming oblique to the principal axis and falling on the pole of a convex mirror.

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55. A coil of insulated wire is connected to a galvanometer. What would be observed if a strong bar magnet with its south pole towards one face of the coil is

(i) moved quickly toward it ?

(ii) moved quickly away from it ?

(iii) held stationary, near it ?

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56. Name the phenomena involved

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View Text Solution

57. State the conclusion based on the observations in (i), (zz) and (in).

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58. A student uses spectacles of focal length - 2.5 m.

Name the defect of vision he is suffering from.

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59. A student uses spectacles of focal length - 2.5 m.

Which lens is used for the correction of this defect ?

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60. A student uses spectacles of focal length - 2.5 m.

List two main causes of developing this defect.

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61. A student uses spectacles of focal length - 2.5 m.

Compute the power of this lens.

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62. Give reasons :

Red colour is selected for danger signals.

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63. Give reasons :

The sky appears dark in space.

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64. Give reasons :

The time difference between actual sunset and apparent sunset is about 2 minutes

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Section C

1. Carbon cannot reduce the oxides of sodium, magnesium and aluminium to their respective metals. Why ? Where are these metals placed in the reactivity series? How are these metals. obtained from their ores ? Take an example to explain the process of extraction along with chemical equations.

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2. The position of certain elements in the Modern Periodic Table are shown below:

Using the above table answer the following questions giving reasons in each case :

(i) Which element will form only covalent compounds ?

(ii) Which element is a non-metal with valency 2 ?

(iii) Which element is a metal with valency 2 ?

(iv) Out of H, C and F which has largest atomic size ?

(v) To which family does H, C and F belong ?

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3. Define atomic size. Give its unit of measurement. In the Modern Periodic Table what trend is observed in the atomic radius in a group and a period and why is it so ?

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4. (a) Why is there a difference in the rate of breathing between aquatic organisms and terrestrial organisms ? Explain.

(b) Draw a diagram of human respiratory system and label - pharynx, trachea, lungs, diaphragm and alveolar sac on it.

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5. (a) Name the organs that form the excretory system in human beings.

(b) Describe in brief how urine is produced in human body.

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6. (a) What is the law of dominance of traits ? Explain with an example.

(b) Why are the traits acquired during the life time of an individual not inherited ? Explain.

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7. Draw a ray diagram in each of the following cases to show the formation of image, when the object is placed :

(i) between optical centre and principal focus of a convex lens.

(ii) anywhere in front of a concave lens.

(iii) at 2F of a convex lens.

State the signs and values of magnifications in the above mentioned cases (i) and (ii).

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8. An object 4.0 cm in size, is placed 25.0 cm in front of a concave mirror of focal length 15.0 cm.

(i) At what distance from the mirror should a screen be placed in order to obtain a sharp image.

(ii) Find the size of the image.

(iii) Draw a ray diagram to show the formation of image in this case.

View Text Solution

9. (a) What is an electromagnet ? List any two uses.

(b) Draw a labelled diagram to show how an electromagnet is made.

(c) State the purpose of soft iron core used in making an electromagnet.

(d) List two ways of increasing the strength of an electromagnet if the material of the electromagnet is fixed.

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10. What is a homologous series ? Explain with an example.

(b) Define the following terms giving one example of each.

(i) Esterification (ii) Addition reaction

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11. Complete and balance the following chemical equations :

(i) $Al_2O_3 + Hcl \rightarrow$

(ii) $K_2O + H_2O \rightarrow$

(iii) $Fe + H_2O \rightarrow$

(b) An element 'X' displaces iron from the aqueous solution of iron sulphate. List v observations if the element 'X' is treated with the aqueous solutions of copper sulphate, zinc sulphate and silver nitrate. Based on

the observations arrange X, Zn, Cu and Ag in increasing order of their reactivities.

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12. Name the following:

(i) Metal that can be cut by knife

(ii) Lustrous non-metal

(iii) Metal that exists in liquid state at room temperature

(iv) Most malleable and ductile metal

(v) Metal that is best conductor of electricity

(vi) Non-metal that can exist in different forms

(b) How are alloys better than metals ? Give composition of solder and amalgam.

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13. List three different categories of contraception methods.

(b) Why has Government of India prohibited prenatal sex determination

by law ? State its benefits in the long run.

(c) Unsafe sexual act can lead to various infections. Name two bacterial and two viral infections caused due to unsafe sex.

View Text Solution

14. In the female reproductive system of human beings, state the functions of

(i) ovary (ii) oviduct

(b) Mention the changes which the uterus undergoes, when

(i) it has to receive a zygote. (ii) no fertilisation takes place.

(c) State the function of placenta.

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15. Blood circulation in fishes is different from the blood circulation in human beings." Justify the statement

(b) Describe "blood circulation" in human beings.

View Text Solution

16. A concave mirror of focal length 10 cm can produce a magnified real as well as virtual image of an object placed in front of it. Draw ray diagrams to justify this statement.

(b) An object is placed perpendicular to the principal axis of a convex mirror of focal length 10 cm. The distance of the object from the pole of the mirror is 10 cm. Find the position of the image formed.

View Text Solution

17. Define the following terms :

(i) Power of a lens

(ii) Principal focus of a concave mirror

(b) Write the relationship among the object distance (u), image distance (v) and the focal length (f) of a

(i) Spherical lens

(ii) Spherical mirror

(c) An object is placed at a distance of 10 cm from optical centre of a

convex lens of focal length 15 cm. Draw a labelled ray diagram to show the formation of image in this case.

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18. A 6 Ω resistance wire is doubled on itself. Calculate the new resistance of the wire.

(b) Three 2 Ω resistors A, B and C are connected in such a way that the total resistance of the combination is 3 Ω Show the arrangement of the three resistors and justify your answer.

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19. Two ores X and Y were taken. On heating these ores it was observed that

ore X gives CO_2 gas, and

View Text Solution

20. Two ores X and Y were taken. On heating these ores it was observed that

ore Y gives SO_2 gas.

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21. Write steps to convert these ores into metals, giving chemical equations of the reactions that take place.

With the help of a diagram explain the method of refining of copper by electrolysis.

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22. Write steps to convert these ores into metals, giving chemical equations of the reactions that take place.

How are broken railway tracks joined ? Give the name of the process and the chemical equation of the reaction involved.

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23. Define isomerism. Draw all possible isomers of butane.

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24. "A compound 'X' on combustion gives a yellow flame with lots of smoke." What inference would you draw from this statement ?

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25. State the role of alkaline $KMnO_4$ in the reaction involving conversion of an alcohol to corresponding carboxylic acid.

View Text Solution

26. Give reasons

Ventricles have thicker muscular walls than atria.

View Text Solution

27. Give reasons

Transport system in plants is slow.

View Text Solution

28. Give reasons

Circulation of blood in aquatic vertebrates differs from that in terrestrial vertebrates.

View Text Solution

29. Give reasons

During the daytime, water and minerals travel faster through xylem as compared to the night.

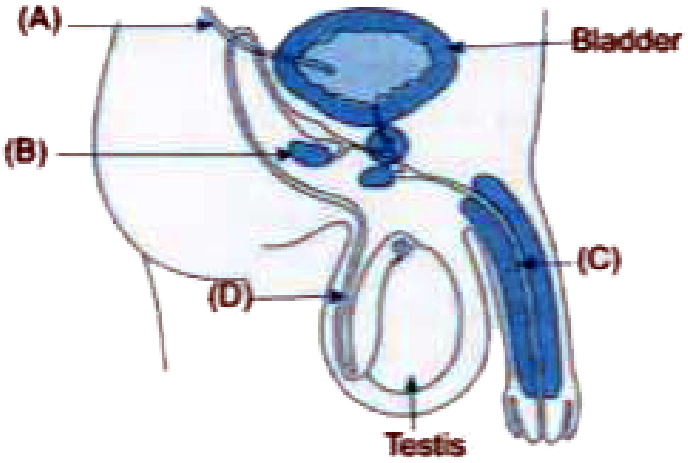
View Text Solution

30. Give reasons

Veins have valves whereas arteries do not.

View Text Solution

31. Based on the given diagram answer the questions given below :



Label the parts A, B, C and D.

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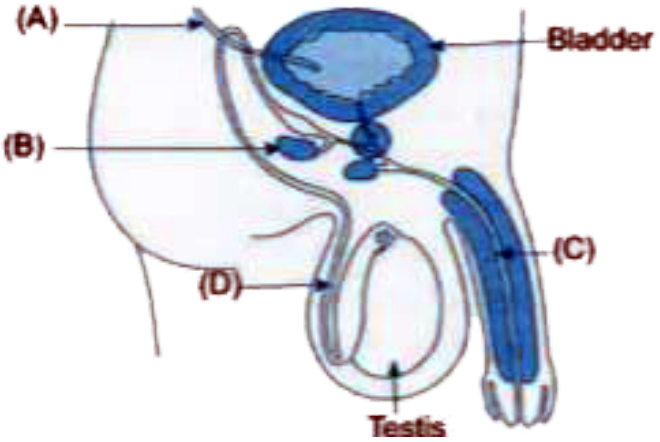
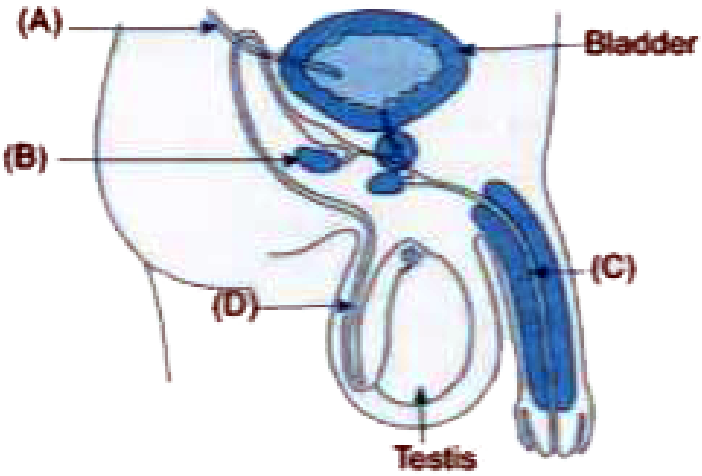
32. Based on the given diagram answer the questions given below :



Name the hormone secreted by testis and mention its role.

View Text Solution

33. Based on the given diagram answer the questions given below :



State the functions of B and C in the process of reproduction.

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34. Name the mode of reproduction of the following organisms and state the important feature of each mode :

(i) Planaria

(ii) Hydra

(iii) Rhizopus

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35. We can develop new plants from the leaves of Bryophyllum. Comment

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36. List two advantages of vegetative propagation over other modes of reproduction.

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37. Two lamps rated 100 W, 220 V and 10 W, 220 V are connected in parallel to 220 V supply.

Calculate the total current through the circuit.

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38. Two resistors X and Y of resistances 2 ω and 3 ω respectively are first joined in parallel and then in series. In each case the voltage supplied is 5

V.

(i) Draw circuit diagrams to show the combination of resistors in each case.

(ii) Calculate the voltage across the 3 Q resistor in the series combination of resistors.

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39. Draw a labelled ray diagram to show the path of a ray of light incident obliquely on one face of a glass slab.

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40. Calculate the refractive index of the material of a glass slab. Given that the speed of light through the glass slab is $2 \times 10^8 m/s$ and in air is $3 \times 10A^8 m/s$.

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41. Calculate the focal length of a lens, if its power is - 2.5 D

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42. A person suffering from myopia (near-sightedness) was advised to wear corrective lens of power - 2.5 D. A spherical lens of same focal length was taken in the laboratory. At what distance should a student place an object from this lens so that it forms an image at a distance of 10 cm from the lens ?

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43. Draw a ray diagram to show the position and nature of the image formed in the above case.

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