

Bounty Of Nature

A natural resource is something that is found in nature and can be used by people. Air, water and soil are renewable natural resources.



CLASSROOM DISPLAY PULLOUT

NUTRITION IN PLANTS

Tick (✓) the correct answer

1. The ultimate source of energy for all organisms is

a. Plants	c. Soil
b. Sun	d. Water

2. Plants synthesise food in the form of

a. Carbon dioxide	c. Sugar
b. Light	d. Water

- 3. The loss of water in plants through leaves and stems is called
 - a. Perspirationb. Photosynthesisc. Transpirationd. Respiration
- 4. Food and water is carried throughout the plant by

a. Leaves c. Roots b. Vascular bundles d. Stomata

5. Haustoria helps plants to

a. Anchor and absorb foodc. Respireb. Photosynthesised. Produce oxygen

6. Bacteria are present in the root nodules of

a. Parasitic plants

b. Leguminous plants

c. Saprotrophic plant

d. Insectivorous plants

7. Bacteria in leguminous

- plants help in
- a. Capturing oxygen
- b. Capturing carbon dioxide
- c. Capturing nitrogen
- d. Capturing sunlight

8. Plants with the help of light energy convert water and carbon dioxide into

- a. Sugar and oxygen
- c. Water and sugar d. Water and oxygen
- b. Sugar and nitrogen d. Wate

9. Bromothymol blue is used to detect

- a. Carbon dioxide produced by the plant
- b. Oxygen produced by the plant
- c. Presence of starch in leaves
- d. Presence of stomata in leaves

10. Though mistletoe carries out photosynthesis, it is still a parasitic plant as

- a. It depends on the host for nitrogen
- b. It draws water and few other nutrients from the host
- c. It uses the chloroplast of the host to carry out photosynthesis
- d. It uses the stored food of the host plant

Fill in the blanks:

11. The mutual association in which both organisms gain from each other is called ______.

12. Chloroplast contains stacks of _____

- 13. Green plants are ______. while mushrooms are ______.
- 15. The plants that trap and feed on insects are called _____
- 16. Give two examples of parasitic plants.
- 17. Write the chemical equation for the process of photosynthesis.
- 18. Which plant produces the largest flower and what is its mode of nutrition?

19. Give one word for the following:

- a. The structures that contain chlorophyll in them.
- b. Living organisms that can synthesise their own food
- 20. Spores _____ food _____ hyphae _____ Mycellium _____ Spores The above represents the life cycle of _____

NUTRITION IN ANIMALS

Tick (✓) the correct answer

1. Which of the following is the correct order of processing food in our body?

- a. Ingestion, digestion, absorption, elimination
- b. Digestion, ingestion, absorption, elimination
- c. Ingestion, absorption, elimination, digestion
- d. Ingestion, digestion, elimination, absorption

2. Breakdown of carbohydrates first begins in

a.	Mouth	
b.	Stomach	

c. Small intestine d. Pancreas

- 3. Which of the following is not a function of the tongue?
 - a. Tasting food
 - b. Manipulating food within the mouth
 - c. Secreting saliva
 - d. Pushing food into the pharynx to begin swallowing

4. Villi are finger- like projections in the small intestine that help in

- a. Increasing the surface area of the intestine lining
- b. Secreting digestive juices
- c. Egesting waste
- d. All of the above

5. Herbivores probably lack

a. Molars b. Premolars c. Incisors d. Canines

c. Two chambered

d. Highly acidic

6. The stomach of ruminants is

- a. Convoluted
- b. Four chambered

7. The largest part of ruminant stoamch is

a. Abomassum	c. Reticulum
b. Rumen	d. Omasum

8. The gastric juices produced in the stoamch act upon

a. Protein	c. Fat
b. Carbohydrate	d. Minerals

9. Which of the following organs secretes bile?

- a. Pancreas
- b. Liver
- c. Gall bladder
- d. Spleen

- 10. Which of the following statements about the large intestine is true?
 - a. The function of the large intestine is to absorb water and some salts from digested food
 - b. The function of the large intestine is to absorb water and some salts from undigested food material
 - c.The large intestine is wider and longer than the small intestine
 - d. The large intestine is highly coiled

Fill in the blanks with words provided:

Twenty, Bile, Chyme, Tearing, Chewing, Food vacoule, Holozoic

- 11. There are _____ teeth in a temporary set of teeth.
- 12. After digestion in the stomach, food is called_____.
- 13. Carnivores have very strong _____teeth.
- 14. Most animals have _____mode of nutrition.
- 15. Amoeba forms a ______when it comes in contact with food.
- 16. Label the parts of the human digestive system in the following picture:



HEAT

Tick (\checkmark) the correct answer

1. Temperature is measured in a. Celsius

- a. Celsiusc. Kelvinb. Farhenheitd. All of the above
- Which one of the following is the preferred mode of transfer of heat energy in solids?

 a. Conduction
 b. Convection
 c. Radiation
 d. a and b
- Which one of the following is the preferred mode of transfer of heat energy in liquids and gases?
 a. Conduction
 b. Convection
 c. Radiation
 d. a and b
- 4. Heat from the sun travels to the earth by the process of
 - a. Conductionc. Radiationb. Convectiond. All of the above
- 5. Which of the following materials should be used to make a ladle for cooking a. Plastic c. Iron b. Copper d. Wood
- 6. Woollen jerseys have holes in them. This prevents heat loss by
 - a. Conduction
 - b. Convection
 - c. Radiation
 - d. All of the above
- Food is kept in a cool-box which uses two ice packs to keep it cool.
 Where should the ice packs be placed to keep all the food as cool as possible?
 - a. Both at the bottom of the box
 - b. Both at the top of the box
 - c. One at the front and one at the back of the box
 - d. One on the left and one on the right of the box
- 8. Hot liquid in a vacuum flask cools extremely slowly.

This is because some methods of heat transfer cannot take place in a vacuum. Which methods cannot take place in a vacuum?

- a. Conduction and convection only
- b. Conduction and radiation only
- c. Convection and radiation only
- d. Conduction, convection and radiation

 An engineer wants to fix a steel washer on to a steel rod.
 The rod is just too his to fit into

The rod is just too big to fit into the hole of the washer. How can the engineer fit the washer onto the rod?

- a. Cool the washer and put it over the rod
- b. Cool the washer and rod to the same temperature and push them together
- c. Heat the rod and then place it in the hole
- d. Heat the washer and place it over the rod
- 10. A student places 2 thermometers near a melting ice cube. X is placed above the ice cube and Y is placed below. What change will the student observe in the readings on the thermometers?
 - a. Temperature in X will decrease more than that in Y
 - b. Temperature in Y will decrease more than that in X
 - c. Both X and Y will show the same decrease in temperature
 - d. There will be no change in both X and Y

11. Convection current blowers should be placed on the floors because

- a. This prevents over heating of the blower
- b. They are easy to earth
- c. Hot air goes up
- d. Hot air stays down

12. Which of the following are good conductors of heat?

- a. Copper
- b. Iron
- c. Aluminum
- d. All of the above

Fill in the blanks using a suitable word:

Black, Kinetic energy, Thermometer, Thermos flask, Conduction

- 13. A thing which keeps things hot _____.
- 14. Transfer of heat without the actual movement of particles is called_____
- 15. _____ is a device used to measure temperature.
- 16. Heat is the ______ of particles that make up matter.
- 17. _____ bodies are good absorbers and good emitters of heat energy.
- 18. Draw a well labelled diagram illustrating an example of convection currents.

ACIDS. BASES AND SALTS

Tick (\checkmark) the correct answer

1. Slaked lime improves soil fertility by

- a. Providing nutrition to plants
- b. By increasing acidity of soil
- c. By increasing basicity of the soil
- d. By decreasing acidity of the soil

2. Turmeric solution turns from yellow to red as it is

a. A base c. An indicator b. An acid d. A salt

3. Antacids are used

a. To speed up the process of digestion

b. As an indicator of digestion

- c. To neutralise excess acid produced in the stomach
- d. To neutralise salts present in the stomach
- 4. Water sample from a river has a pH value of 3. Which substance can be added in to the water to neutralise the pH value of the acidic water present, without leaving an alkaline solution?
 - a. Aqueous potassium hydroxide
 - b. Calcium carbonate
 - c. Ammonia
 - d. Hydrochloric acid
- 5. When baking soda is added to vinegar, an effervescent reaction results due to the release of
 - a. Hydrogen gas b. Carbon dioxide gas
- c. Hydrochloride gas d. Carbon disulphide gas
- 6. A water sample is tested for pH using a universal indicator. The paper turns green. What is the pH of this water sample? a. Acidic c. Basic b. Neutral d. Highly acidic

7. Which of the following

is not a natural indicator? c. Purple cabbage juice

- a. Turmeric b. Berries extract
 - d. Methyl orange
- 8. When Hydrochloric acid reacts with magnesium, one of the end products is
 - a. Carbon dioxide b. Ammonia
- c. Hydrogen gas d. Chloride gas

- 9. Blue litmus paper is dipped into a solution; the colour of the litmus paper does not change. This indicates that the solution is
 - a. Acidic c. Neutral b. Basic d. Made by dissolving salt

10. Which of the following will not produce hydrogen when it reacts with acid?

- a. Sodium c. Zinc
- b. Magensium d. Aluminium
- 11. Blockage in pipes can be cleared by using
 - a. Acetic acid and sodium carbonate
 - b. Acetic acid and sodium bicarboante
 - c. Acetic acid
 - d. Sodium bicarbonate

12. Which of the following statements is incorrect?

- a. Some bases are insoluble in water
- b. Pickles can corrode metal containers
- c. Organic acids are weak acids
- d. A salt is always neutral

State whether the following statements are true or false:

- 13. Salt is formed by the neutralisation of Hydrochloric acid with sodium hydroxide
- 14. Bases are used in household cleaners
- 15. Sodium hydroixde is an alkali
- 16. Turmeric can act as an antacid
- 17. Acids present in food, can cause tooth decay

Complete the following reactions:

_____+_____

- 19. HCl + _____ NaCl +

RATIONAL NUMBERS

Tick ($\sqrt{}$) the correct answer

- Every number that can be written as fraction, in which both the numerator and denominator are integers, is
 - a. integers
 - b. rational number
 - c. fraction
 - d. decimals
- 2. The sum of a number and its opposite, or additive inverse, is

a. 0	b. 1
c. 2	d. Number itself

3. Number of rational numbers between any two rational numbers is

a. 2	b. 4
c. 0	d. Infinite

- 4. Multiplicative inverse of 0 is a. 0 b. 1 c. does not exist d. none of these
- 5. The product of two numbers is $\frac{-9}{35}$. If one of the numbers is $\frac{-4}{7}$, the other is

a. 9/20	b. $\frac{-9}{35}$
c. $\frac{7}{35}$	d. $\frac{-7}{35}$

6. Which one of the rational numbers...

$\frac{-11}{28}, \frac{-5}{7}, \frac{-29}{42}, \frac{9}{-14}$	is the greatest?
a. <u>-5</u> 7	b. $\frac{9}{-14}$
C. $\frac{-29}{42}$	d. $\frac{-11}{28}$

7. Which of the following rational numbers is in the standard form?

a. <u>-4</u>	b. <u>9</u>
11	<u>-81</u>
c. <u>-4</u> 76	d. $\frac{14}{24}$

8. Which is greater, the sum of $\frac{4}{5}$ and $\frac{-7}{9}$ or the subtraction of $\frac{2}{7}$ and $\frac{-1}{5}$? a. the subtraction of $\frac{-1}{5}$ and $\frac{2}{7}$ b. the sum of $\frac{4}{5}$ and $\frac{-7}{9}$

WORKS

9. Simplify
$$\left(\frac{2}{5} \div \frac{3}{8}\right) \div \frac{-3}{5}$$

a. $\frac{16}{5}$ b. $\frac{-16}{5}$
c. $\frac{16}{3}$ d. $\frac{-16}{3}$

10.	Simplify	$\frac{-9}{5} \times \left(\frac{-10}{3} \times \frac{15}{-4}\right)$	÷5
	a. <u>-9</u> 2	b.	<u>9</u> 2
	c. <u>45</u> 2	d.	<u>-45</u> 2

Fill in the blanks.

- 11. The product of a rational number and its reciprocal is
- 12. The reciprocal of a, where $a \neq 0$, is _____.
- 13. Zero has _____ reciprocal.
- 14. The numbers _____ and _____ are their own reciprocals.
- 15. As per the _____ property, the two rational numbers can be multiplied in any order, their product remains the _____.

State whether the following statements are true or false.

- 16. The reciprocal of a positive rational number is negative.
- 17. The sum of any two rational numbers is also a rational number.
- 18. Subtraction of rational number is neither commutative nor associative.
- 19. In case of division of rational numbers, commutative and associative properties are applicable.
- 20. Zero is the smallest rational number.

EXPONENTS AND POWERS

Tick ((√)	the	correct	answer
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- Sum of first n odd natural numbers is

 a. 2n²
 b. n + 1
 c. n
 d. n²
- 2. Which of the following numbers is a perfect square?
 a. 123
 b. 576
 c. 189
 d. 245
- 3. A perfect square number can never have the digit _____at the unit place.
 a. 1
 b. 5
 c. 6
 d. 7
- 4. The square of a proper fraction is ______
 the fraction.
 a. smaller than b. greater than
 c. equal to
- 5. The sum of 1 + 3 + 5 + 7 + 9 + 11 is a. 25 b. 16
- c. 36 d. 49
- By which number should 588 be multiplied so as to get a perfect square?
 a. 2
 b. 3
 c. 4
 d. 5
- 7. A gardener has to plant 500 saplings in such a way that the number of rows and the number of columns remains the same. How many saplings would be left out?
 a. 16 b. 25
 - c. 4 d. 8
- 8. A number has 4 zeroes at the end. How many zeroes will its square root have?
 - a. 1 b. 2 c. 0. d. Cannot be calculated
- 9. (75)² (74)² = _____ a. 150 b. 149 c. 120 d. None

- 10. A number to the 7th power divided by the same number to the 3rd power equals 256. What is the number?
 - a. 0 b. 2 c. 4 d. 6
- 11. Find the value of $\sqrt[3]{1728}$
 - a. 22 b. 32 c. 12 d. 82
- 12. Find the value of $\sqrt[3]{\frac{-216}{1331}}$
 - a. $\frac{-6}{11}$ b. $\frac{6}{11}$ c. $\frac{-6}{19}$
 - d. Does not exist

Fill in the blanks.

- 13. The square of an even number is always
- 14. The number ending in _____ numbers of zeroes is always a perfect square.
- 15. To divide powers with the same base, keep the base and ______ the exponents.
- 16. To multiply powers with the same base, keep the base and ______ the exponents.

State whether the following statements are true or false.

- 17. 2^5 is read as five raised to the power of 2.
- 18. A square number is always positive.
- 19. Cubes of all negative integers are always positive.
- 20. The sum of two perfect squares is a perfect square.

ALGEBRAIC EXPRESSIONS

Tick ($\sqrt{}$) the correct answer

- 1. Sonal planted t fewer trees than Shelly. Shelly planted 32 trees. Which expression shows the trees planted by Sonal?
 - a. 32 t b. t – 32
 - c. t + 32
 - d. t
- 2. Identify the degree of the polynomials. $20x^6 + 10x^4 - x$ a. 2nd degree
 - b. 7th degree
 - c. 9th degree
 - d. 6th degree

3. Add the polynomials

 $(5x^2 - 3x + 7) + (2x^3 + 5x^2 + x + 5)$ a. 2x³+10x²+2x+12 b. 2x³+10x²-2x+12 c. 2x³+2x²+5x+71 d. 7x³+2x²+7x+5

4. Find the product of $a^2(b^2 - c^2) + b^2(c^2 - a^2) + c^2(a^2 - b^2)$

a. 2 <i>a²b²</i> + 2 <i>a²c²</i> + 2 <i>b²c²</i>	b. 1
c. 0	d. None

- 5. Find the value of *m*, if 4m = (52)² - (50)²

 a. 102
 b. 4
 c. 204
 d. 51
- 6. Find the value of (u² + v²), if (u + v) = 20 and uv = 10.
 a. 380 b. 400
 c. 390 d. 410
- 7. If 3a + 5b = 21 and ab = 6, find the value of 9a² + 25b².
 a. 251 b. 261
 c. 361 d. 350

Fill in the blanks.

- 8. The degree of a constant is _____.
- Algebraic expressions having one, two and three terms are called ________
 ______ and ______.

State whether the following statements are true or false.

- 10. In $(-4x^3 + 6y^2 3z) (-5x^3 3y^2 2z)$, the second equation will become positive.
- 11. The difference of 3ab 7ab is a positive.

Match the polynomials in column A to its corresponding terms in column B.

Column A	Column B
12. <i>xy</i>	a. trinomial
13. $5x^2 - 8y + 2$	b. 4 <i>ab</i>
14. 7 <i>x</i> ² + <i>y</i>	c. monomial
15. Monomial	d. 6 <i>x</i> ³ + 5 <i>x</i> – 9
16. Trinomial	e. binomial

Write your solution in performing the given operations.

- 17. $(8x^5 3xy^3 + 2y^2) + (2x5 2xy^3 + 2y^2) =$
- 18. $(x^3 3x^2 + 7x + 2) (5x^3 + x^2 10x + 24) =$
- 19. 3*x*3(4*y*²) = _____

20.
$$(6y^2 + y - 5) \div (6y - 5) =$$

FACTORISATION

Multiple Choice Questions.		9. The factor of $2x + 8y - 3px - 12py$ is			
1.	(<i>a</i> + <i>b</i>)² equals		State whether the following statements are true		
	a. (a + b)(a + b)	b. (a − b)(a − b)	or false.		
	c. (a + b)(a – b)	d. 2(a + b)			
			10. The factor of $2n^2 - 6n + 10$	4 is (<i>n</i> −1)(<i>n</i> −2).	
2.	Highest common f	actor of 7 <i>p</i> 3 <i>q</i> 3 and 21 <i>p</i> 2 <i>q</i> is			
	a. p ³ q ³	b. p²q	11 The factor of 25 p^2 is p^2	(5+n)(5-n)	
	c. 7p²q	d. 7pq ²	The factor of $25 - p^2$ is	(3 + p)(3 - p).	
3.	The highest comr	non factor of 6a³b + 3a²b² –	12. The factor of $12b^2 + 17b^2$	<i>b</i> – 5 is (2 <i>b</i> + 1)(6 <i>b</i> – 5).	
	18ab³ is				
	a. 3ab	b. 3a²b	13. The two factors of $x^2 - 4$	Ix + 4 are same.	
	c. 3ab ²	d. ab			
			Match the polynomial	s in	
4.	Evaluate (205) ² – (195) ²		column 'A' to its prop	er factor of	
	a. 400 b. 4000		grouping in column 'B'		
	c. 100	d. None of these			
			Column A	Column B	
5.	Which one of the $x^2 + x$?	following is not a factor of	14. $2x^2 - 6x + 8$	a. 3(x + 3y)	
	a. <i>x</i> + 2	b. <i>x</i> + 1	45 5. 00		
	C. <i>X</i>	d. <i>x</i> (<i>x</i> + 1)	15. 5x + 30	D. 3xy(2x + 3y)(x - 2y)	
6.	Evaluate (2.6) ² – (0.6) ²	16. 3xy + 21x – 2y – 14	c. $2(x^2 - 3x + 4)$	
	a. 0.4 D. 0 C. Z.	4 U. 0.4	17. 5x ² + 11x + 2	d. (y + 7)(3x − 2)	
Fil	I in the blanks.				
			18. 3x + 9y	e. (5x − 1)(x − 2)	
7.	The process of finding called	factors of an algebraic expression is	19. $2x^3 - 4x^2 - 6x$	f. 5(x + 6)	
8.	Factorisation of	is (t + 7) (t + 1).	20. $6x^{3}y + 3x^{2}y^{2} - 18xy^{3}$	g. $2x(x + 1)(x - 3)$	

DIVERSITY IN LIVING ORGANISMS

Tick (\checkmark) the correct answer

- 1. Which one of the following is not included in Linnaean hierarchy?
 - a. Order c. Genus
 - b. Category d. Species
- 2. The vascular system first developed in
 - a. Algae
- c. Mosses
- b. Liverworts d. Ferns
- 3. Which of the following are the most primitive and simple seed plants?
 - a. Angiosperms c. Bryophytes
 - b. Gymnosperms d. Pteridophytes

4. The double envelope system first developed in

- a. Kingdom Monera c. Kingdom Fungi
- b. Kingdom Protista d. Kingdom Plantae

5. Which one of the following is a true fish?

- a. Cat fish c. Jelly fish
- b. Cuttle fish d. Silver fish

6. Three chambered heart is present in

- a. Frogs c. Birds
- b. Lizards d. Fishes
- 7. Multicellular photosynthetic producers of the biosphere belong to
 - a. Kingdom Plantae c. Kingdom Monera
 - b. Kingdom Fungi d. Kingdom Protista
- 8. The birds have bipedal locomotion as it
 - a. Reduces weight c. Provides support
 - b. Increases speed d. Spares forelimbs for flight
- 9. Which one of the following is an exclusively marine phylum?
 - a. Porifera c. Coelenterate
 - d. Echinodermata d. Protozoa
- 10. Which one of the following plants produces seeds but not fruits?
 - a. Pine c. Banyan b. Maize d. Mint

Complete the following Analogies.

11. Balanoglossus: Protochordata :: Marsilea: _____

- 12. Binomial nomenclature: Carolus Linnaeus :: Five Kingdom classification: _____
- 13. Amoeba: Pseudopodia :: Asterias: _____
- 14. Diatoms: Protista :: Cyanobacteria: _____

Fill in the blanks.

- 15. A chitinous exoskeleton and jointed legs are the characteristics of phylum_____.
- 16. The _____are referred to as the 'amphibians of the plant kingdom'.

Match each term in Column B with its related term in Column A.

Column A	Column B
17. Endospore	a. Fungi
18. Cyst	b. Monera
19. Spore	c. Protista

20. Given below is the diagram of a 4 chambered heart. Identify the vertebrate animal groups which have a 4 chambered heart.



WORKSHEET Max marks: 20

CLASS IX: BIOLOGY

WHY DO WE FALL ILL?

Tick (✓) the correct answer

- 1. Which one of the following diseases is not contracted by droplet infection?
 - a. Tetanus c. Mumps b. Diphtheria d. Leprosy
- 2. Which one of the following diseases can be cured by giving ORS-Oral Saline Solution?
 - a. AIDS c. Chickenpox
 - b. Hepatitis d. Cholera
- 3. Which one of the following diseases can be transmitted by shaking hands?
 - a. Common cold c. Malaria
 - b. AIDS d. Polio
- 4. Which one of the following diseases is present right from the birth?
 - a. Sickle cell anaemia c. Amoebiasis
 - b. Cancer d. SARS

5. A pathogen refers to

- a. Any microorganism
- b. Microorganism inside a body
- c. Disease causing organism
- d. Cultured microorganism
- 6. A person who does not maintain personal hygiene is most likely to suffer from
 - a. Genetic diseases c. Degenerative diseases
 - b. Deficiency diseases d. Contagious diseases
- 7. Which one of the following diseases is not caused by a mosquito bite?
 - a. Encephalitis
- c. Dengue
- b. Filariasis

a. Neutrophils

d. Amoebiasis

8. Which one of the following is not involved in the defense of our body against pathogens?

c. Macrophages

ANSWER KEY - CLASS VII: SCIENCE 2. c 4. b 1. a 2. a 1. d 1. d 2. c 1. b 3. c 3. c 4. a 2. a 3. c 4. b 5. a 7. c 6. b 6. b 5 d 6 b 3. b 5 b 8. a 9 h 10 b 7. b 8. a 7. d 8. c 4 c Fill in the blanks 9 b 10 a 9 h 10 d 5. d 11. Symbiosis 12. Thylakoids Fill in the blanks: 11. b 12. d 6. a -13. Autotrophic and 11. Twenty True/False: 7 b Saprophytic 14. Carbon Dioxide 12. Chyme 13. True 8. a 13. Tearning 14. Ture and water 9. d 15. Insectivorous 14. Holozoic 15. True 10. b plants 15. Food Vacoule 16. False 16. Examples for 11. c parasitic plants: Cuscuta, Indian 16. Labels for the 17. True 12. d 18. Zinc+Hydrochloric diagram Fill in the blanks: pipe 17. 6CO_+6H_O a. Liver acid→Zinc Chloride 13. Thermos Flask C₆H₁₂O6+6O₂ 18. Rafflesia, b. Stomach and Hydrogen Gas 14. Conduction c. Large 19. HCI+NaOH→ Parasitic 15. Thermometer intestine Nacl+H₂0 19.a. Chloroplast, 16. Kinetic energy d. Small intestine 20. Methyl Orange + Acid b. Autotrophs 20. Bread Mould 17. Black → Pink/red solution e. Anus

- b. Lymphocytes d. Antigens
- 9. Which one of the following statements is not correct? a. All antibiotics are specific
 - b. All antibodies are specific
 - c. Antigens help in blood grouping
 - d. Antibodies are produced by B lymphocytes
- 10. In which disease, a common cold infection progresses into pneumonia, resulting in death of the patient?
 - a. AIDS c. Cancer
 - b. Influenza d. Typhoid

Complete the following analogies.

- 11. Influenza: Virus :: Cholera: ____
- 12. Syphilis: Sexual contact: Pneumonia :: _____
- 13. Penicillin: Alexander Fleming :: Smallpox vaccine: _
- 14. B cells :: Humoral immunity :: T cells:

Fill in the blanks.

- 15. The aim of vaccination is to induce ______ immunity against microbial invasion.
- 16. Influenza is _____ disease while tuberculosis is _____ disease.

Match each term in Column B with its related term in Column A.

Column A	Column B
17. Smallpox	a. Typhoid
18. TAB	b. Variola virus
19. Measles	c. Tuberculosis
20. BCG	d. Rubeola virus



WORKSH

NATURAL RESOURCES

Tick (\checkmark) the correct answer

- 1. The ultraviolet radiations are absorbed in the stratosphere by
 - c. CFC a. Carbon dioxide
 - b. Ozone d. Oxygen
- Which one of the following is mismatched? 2.
 - a. Fossil fuel burning release of carbon dioxide
 - b. Nuclear wastes Radioactive wastes
 - c. Solar energy Greenhouse effect
 - d. Biomass burning Release of carbon dioxide

3. BOD-Biochemical oxygen demand measures

- a. Water pollution due to organic wastes
- b. Water pollution due to inorganic wastes
- c. Polluting capacity of effluents
- d. Air pollution

The ozone layer is chiefly disturbed by 4.

- a. Automobile exhausts c. Greenhouse effect
- b. Acid rain d. Supersonic jet planes
- What will be the effect on the temperature of the 5. earth's surface, if there was no carbon dioxide in the atmosphere?

a. No effect

- b. The temperature will increase
- c. The temperature will decrease
- d. Will depend on the amount of oxygen in the atmosphere

6. Acid rain is mainly due to

- a. Sulphur dioxide pollution c. Pesticide pollution
- b. Carbon monoxide pollution d. Dust particles

7. In the future, skin related disorders might be more common due to

- a. Use of detergents c. Air pollution b. Water pollution
 - d. Depletion of ozone layer



As DDT travels along the food chain, its concentration a. Decreases

- c. Stays constant
- b. Increases

b. Carbon dioxide

- d. Fluctuates randomly
- Which one of the following is not a pollutant? 9 a. Hydrocarbons
 - c. Carbon monoxide
 - d. Sulphur dioxide
- 10. The fish die in the water bodies polluted by sewage due to
 - a. Pathogens c. Reduction in oxygen
 - b. Clogging of gills by silt d. Foul smell

Complete the following analogies.

- 11. Thermal pollution: Water pollution :: Acid rain:
- 12. Greenhouse effect :Carbon dioxide: Ozone hole ::
- 13. Fertilizers: Eutrophication :: Pesticides:
- 14. DDT :: Non biodegradable pollutant :: Sewage:
- Fill in the blanks.
- 15. The process of nutrient enrichment of water, and consequent loss of species diversity is referred to as
- 16. The increase in the global mean temperature is referred to as

Match each term in Column B with its related term in Column A.

Column A	Column B
17. Water cycle	a. Photosynthesis
18. Nitrogen cycle	b. Precipitation
19. Oxygen cycle	c. Ammonification
20. Carbon cycle	d. Limestone

	ANSWER KEY - CLASS X: PHYSICS						
	1.a		1.a		1. d		1. a
	2. b		2. b		2. c		2. c
	3. c	σ	3. a		3. c		3. a
E	4. b	/or	4. b		4. b	4	4.a
Ë	5. b	2	5. b		5. c	len l	5. D
ĕ	6. d	rfu	6. c		6. d	5	0.u 7 a
ě	7. a	0	7. b		7. d	C U	8. c
5	8. b	2	8. d		8. b		9. d
5	9. d	e	9. d	ŧυ	9. c	lle	10. d
E	10. a		10. c	Ľ.	10. c	5	11. Fleming's Right-
Ŧ	11. Incidence,	Ľ	11. Real, Inverted	ect	11. Viriable	-	hand rule, motion
<u> H</u> e	Thickness	9	ConesDroplet	Π	12. Series	fec	of the conductor
Å	12. Increases	Ē	13 5D		13. Earth	Ш	13 Magnetic South
	13. Thermosetting	ш	14. VIBGYOR		14. 25 : 1	eti	of earth
	14. 1, 125	E	15. Tre		15. Resistance	ШG	14. Terminates
÷	15. Refractive index	Ĩ	16. False		16. False	Мо	15. False
	16. False	Je	17. False		17. False		16. True
	17. True	F	18. False		18. True		17. Ture
	18. True		19. True		19. True		18. False
	19. False		20 False		20 False		19. Faise

IMPROVEMENT IN FOOD RESOURCES

Tick (✓) the correct answer

- 1. Which method of animal breeding results into the Mule?
 - a. Selection c. Inbreeding
 - b. Interspecific hybridisation d. Cross breeding

2. Which of the following statements is NOT true for mineral nutrition?

- a. 13 essential plant nutrients are obtained from the soil
- b. N, P, H are called the primary nutrients
- c. Manures replenish the general deficiency of nutrients in the soil
- d. Green manures are used for crops that require high nutrient input
- 3. Which of the following is NOT true for organic farming?
 - a. Use of fertilizers
 - b. Use of blue green algae
 - c. Use of green manure
 - d. Use of biological pest control

4. Green revolution in India was possible primarily due to

- a. Hybrid seeds
- b. Increased area for crop cultivation
- c. Improved technique of irrigation
- d. Mutations resulting in semi-dwarf varieties
- 5. What will be the effect on the temperature of the stored grain, if it is stored without drying?
 - a. No effect
 - b. Temperature will increase
 - c. Temperature will decrease
 - d. Will depend on amount of oxygen in the atmosphere
- 6. Which one of the following methods is most commonly used for bringing about crop variety improvement?
 - a. Selection
- c. Mutation
- b. Hybridisation d. Genetic engineering
- 7. Which one of the following methods is most commonly used for cattle breeding?
 - a. Random mating c. Mutation
 - b. Artificial insemination d. Hybridisation

8. Inbreeding is possible between the two members of

- a. Same species c. Same genus
- b. Different species d. Different genus
- 9. The process of bringing a species under human management is called
 - a. Breeding b. Selection
- c. Domesticationd. Hybridisation

10. Which statement is NOT true for animal breeding?

- a. Composite fish culture uses 5-6 fish species in a single pond
- b. The Indian bees have a high honey collection capacity as compared to Italian bees
- c. Milk production can be increased by increasing the lactation period
- d. The nutritional requirements of broilers is different from layers

Complete the following analogies.

- 11. Sahiwal: Indigenous breed :: Jersey: _____
- 12. Catla :Surface feeder :: Carp: _____
- 13. Methyl bromide: Fumigant :: 2, 4 D: _____
- 14. Foot and mouth disease :: Cattle disease :: Ranikhet:

Fill in the blanks.

- 15. The tremendous increase in egg production in India is referred to as ______revolution.
- 16. Triticale has been developed by _____ hybridisation.

Match the following:

Column A	Column B
17. Exotic breed	a. 1 : 3
18. Crop rotation	b. Legumes
19. Intercropping	c. Leghorn
20. Cross breed	d. Karan swiss

LIGHT - REFLECTION AND REFRACTION

Tick (✓) the correct answer

- 1. If the angle between surface of a plane mirror and incident ray is 400, the angle between incident and reflected ray is
 - a. 1000 c. 1100 b. 800 d. 900
- 2. How many letters in the word EXAMINATION look unchanged when viewed in a plane mirror?
 - a. 6 c. 7 b. 8 d. All 11
- 3. A ray of light falls on a plane mirror such that the reflected ray bounces back along the same line. On reflection, the ray of light turns by an angle of
 - a. 00 c. 1800 b. 900 d. 3600
- 4. The image formed by a spherical mirror is virtual and magnified, then
 - a. the mirror is convex and the image is between focus and pole.
 - b. the mirror is concave and the object is between focus and pole.
 - c. the mirror is concave and the image is beyond centre of curvature.
 - d. the mirror is concave and the image is between focus and pole.
- 5. For the same angle of incidence of 600 for a beam of light falling on water, glass, diamond and kerosene, the angle of refraction is
 - a. same for all the four substance.
 - b. minimum for diamond.
 - c. minimum for water
 - d. minimum for glass
- 6. A convex lens of focal length 10 cm and a concave lens of focal length 20 cm are joined together. The power of the combination is

a.	+15 D	С.	– 5 D
b.	– 15 D	d.	+ 5 D

- 7. Convex lens can form
 - a. real image of a virtual image formed in a plane mirror.
 - b. virtual and inverted image.
 - c. only real and magnified images.
 - d. none of these.
- 8. An object is placed 20 cm away from a concave lens of focal length 20 cm. The image will be formed at a. Infinity.
 - b. 10 cm away from the lens between the lens and object.

- c. 20 cm away from the lens but on the other side of the lens.
- d. 40 cm away from the lens behind the object.
- 9. The refractive index of glass with respect to air is 1.5. The speed of light in glass is
 - a. 2.5 × 108 m/s c. 1.5 × 108 m/s
 - b. 3.0 × 108 m/s d. 2.0 × 108 m/s
- 10. When a virtual image is formed by a concave mirror, the magnitude of distance of image is
 - a. always greater than the magnitude of object distance.
 - b. always less than the magnitude of object distance.
 - c. may be greater or less than the magnitude of object distance.
 - d. equal to the magnitude of object distance.

Fill in the blanks:

- 11. The lateral displacement between incident and emergent rays through a rectangular glass slab increases with increase of angle _____ and of slab.
- 12. If an object in front of a concave mirror gradually moved away from the mirror, the linear magnification of virtual image gradually _____.
- 13. The refractive index of glass with respect to air is 1.5 and refractive index of water with respect to air is $\frac{4}{3}$, then refractive index of glass with respect to water is
- 14. A graph is plotted between sin of angle of incidence and sin of angle of refraction. The slope of the graph gives _____.

State whether the following statements are true or false:

- 15. Linear magnification is measured in meters.
- 16. All real images can be obtained on a screen.
- 17. The two lenses in contact of equal focal lengths, one convex and other concave behave as plane transparent sheet of glass.
- 18. The rear view convex mirror in a car gives large field of view.
- 19. If image of an object is obtained using a concave mirror having a hole in the centre, the central part of image will not be available.

THE HUMAN EYE AND THE COLOURFUL WORLD

Tick (✓) the correct answer

The eye lens is 1.

- a. convex and its focal length is maximum while viewing the distant object.
- b. convex and its focal length is minimum while viewing the distant object.
- c. constant and does not change at all.
- d. concave and its focal length is maximum while viewing the distant object.

2. The function of iris is

- a. to identify the colour of an object.
- b. to control the amount of light entering in the eye.
- c. to focus the image on the retina.
- d. all of these.

3. The least distance of distinct vision is

- a. constant and is equal to 25 cm.
- b. more than 25 cm for a person having Hypermetropia.
- c. less than 25 cm for a person having Hypermetropia.
- d. less than 25 cm for a person having Myopia.

For a person suffering with Shortsightedness 4.

- a. the rays coming from infinity meet behind the retina.
- b. the rays coming from infinity meet in front of the retina.
- c. the rays coming from infinity meet at the far point.
- d. the rays coming from infinity meet at the retina.

Which of the four figures depict Myopia? 5.

a. (i) and (iii) b. (ii) and (iii)



c. (i) and (iv) d. (ii) and (iv)



The refractive index of glass 6.

- a. for all colours of the light is same.
- b. is minimum for violet colour and maximum for red colour.
- c. is maximum for violet colour and maximum for red colour.
- d. is maximum for yellow colour and maximum for red colour.

The blue colour of the sky is 7.

- a. due to the refraction of light.
- b. due to the scattering of light by the molecules of gases.
- c. due to the dispersion of light by the molecules of qases.
- d. due to the absorption of light of all colours except blue by the molecules of gases.

- 8. Which phenomenon is responsible for the reddening around the sun at the time of sunset?
 - a. Dispersion of light.
 - b. Reflection of light.
 - c. Refraction of light.
 - d. Scattering of light.

According to the Tyndall effect, 9.

- a. if size of particles is very small, they scatter more light of smaller wavelength.
- b. if size of particles is bigger, they scatter light of all wavelengths equally.
- c. the colour of the scattered light depends on the size of particles.
- d. all of these.
- 10. Which of the following phenomenon is NOT due to the atmospheric refraction?
 - a. Size of sun appears larger at the time of sunset.
 - b. Twinkling of stars.
 - c. White colour of clouds.
 - d. Advanced sunrise and delayed sunset.

State whether the following statements are true or false:

- 11. The images formed on the retina are _____ and
- 12. Colour blindness is due to the absence of some type of cells in the retina called
- 13. The far point of a person is 2 meters. The power of lens required to correct the defect of vision is
- 14. The order of colours in the spectrum of natural white light is referred by ____

State whether the following statements are true or false:

- 15. Near point of a person suffering from Hypermetropia is more than 25 cm.
- 16. The speed of violet light is more than that of red light in glass.
- 17. Myopia is corrected by the use of convex lenses of suitable focal lengths.
- 18. Presbyopia is corrected by the use of bifocal lenses.
- 19. The size of pupil is independent of intensity of light.

ELECTRICITY

Tick (✓) the correct answer

- 1. If a current of 1 A is flowing through a wire, the number of electrons passing through the wire in 1 minute is
 - a. 6.25 × 1018
 - b. 3.75 × 1019
 - c. 6.25 × 1020
 - d. 3.75 × 1020

2. Which of the following statements is correct?

- a. In primary cells, chemical energy changes into electrical energy and the chemical reaction is reversible.
- b. In primary cells, electrical energy changes into chemical energy and the chemical reaction is irreversible.
- c. In secondary cells, chemical energy changes into electrical energy and the chemical reaction is reversible.
- d. Secondary cells, cannot be charged.
- 3. A point charge q_0 is carried from infinity to point A and then to point B. If potential at A is V_A and potential at B is V_B then
 - at B is V_B then a. $V_A = V_B$ b. $V_A > V_B$ c. $V_A < V_B$ d. $V_A \ge V_B$
- 4. The potential difference V across AB and the value of resistance R (between AB) are

(A)

- a. V = 3 V and R = 1 Ω
- b. V = 4.5 V and R = 3 Ω
- c. V = 3 V and R = 1.5Ω
- d. V = 4.5 V and R = 3 Ω
- According to Ohm's law $R = \frac{V}{I}$ if
- a. V is doubled, R is also doubled.
- b. V is doubled, R is halved.
- c. V is doubled, R remains same.
- d. None of these.

5.

- The R P L/A where p is resistivity, A is area of cross section and L is length of the conductor. Then R increases with increase of temperature because of a. Increase of L.
 c. Increase of volume.
 - b. Increase of A. d. Increase of p.
- 7. Two bulbs each marked 100 W-220 V in series are connected across 220 V. The total power consumed is a 200 W c 50 W

u.	200 11	υ.	00 11
b.	100 W	d.	25 W

8. Kilowatt-hour (kwh) is

- a. The unit of power and 1 kwh = 1000 W
- b. The unit of energy and 1 kwh = 3600 kJ
- c. The unit of power and 1 kwh = 1.3 Horse power
- d. The unit of energy and 1 kwh = 1000 kJ
- 9. A wire of length 1 m and resistance 20 Ω is stretched to the length of 4 m, the new resistance will be
 - a. 20 Ω c. 80 Ω
 - b. 40 Ω d. 60 Ω
- 10. When two resistance are connected in series, the total resistance is 25Ω and when the same two resistance are connected in parallel, the total resistance is 6Ω . The value of the two resistances are
 - a. 12.5Ω and 9Ω c. 10Ω and 15Ω
 - b. 20 Ω and 5 Ω d. 12 Ω and 13 Ω

Fill in the blanks:

- 11. Rheostat is a _____ resistance and it is connected in series.
- 12. Kilowatt-hour meter is connected in _____ with the circuit.
- 13. In the power cord used in house hold appliances, the lead covered with green rubber connected with ______ of the socket.
- 14. There are 5 resistance each of resistance 10 Ω . The value in series combination is Rs and the value in parallel combination is Rp. Then Rs : Rp =
- 5. The slope of potential difference (V) and current (I) gives _____ of the conductor.

State whether the following statements are true or false:

- 16. The resistivity of all good conductors is equal.
- 17. Ohm's law is obeyed by all type of conductors.
- 18. An Electric fuse wire has a low melting point.
- 19. A Kilo-watt hour meter is connected in the series of the wiring.
- 20. In the verification of Ohm's law, ammeter and voltmeter can be interchanged.

MAGNETIC EFFECTS OF ELECTRIC CURRENT

Tick (✓) the correct answer

ORKSHEET

- Who gave the experimental demonstration of 1. magnetic effect of current?
 - a. Hans Christian Oersted c. Alessandro Volta
 - b. Sir Isaac Newton d. Charles de Coulomb
- The direction of magnetic field around a current 2. carrying straight wire is found by
 - a. Fleming's Left-Hand Rule.
 - b. Fleming's Right-Hand Rule.
 - c. Right Thumb Rule.
 - d. None of these.

Which of the following statements is wrong? 3.

- a. Strength of an electromagnet is inversely proportional to the resistance of the coil.
- b. Strength of an electromagnet is directly proportional to the number of turns in the coil.
- c. Strength of an electromagnet is directly proportional to the current in the coil.
- d. Strength of an electromagnet can be changed as per our requirement.

The direction of induced current in a conductor is 4. determined by using

- a. Fleming's right-hand rule.
- b. Left-hand thumb rule.
- c. Maxwell's cork screw rule.
- d. None of these.

Which of the following is NOT applicable for an 5. electric motor?

- a. The split rings act as commutator.
- b The carbon brushes rotate with the armature.
- c. The rectangular coil is free to rotate between the cylindrical pole pieces of a horse shoe magnet.
- d. By reversing the terminals of the battery, direction of rotation of coil is also reversed.

The instruments based on magnetic effect of current are 6. c. Motors.

- a. Galvanometer.
- d. All of these. b. Electro-magnets.
- 7. When N-pole of the bar magnet is moved towards the wooden rod inside a solenoid, then
 - a. No magnetic poles are • • induced in the solenoid
 - b. N-pole is induced on the left of the solenoid
 - c. The galvanometer shows deflection
 - d. There is no current in the
 - galvanometer if the magnet stops



- a. Parallel to the current carrying conductor.
- b. Anti-parallel to the current carrying conductor.
- c. Circular.
- d. Radially outward.
- Which of the following indicates the magnetic effect of 9 current?
 - a. The relative motion between coil and magnet producing current.
 - b. A charged metallic sphere brought near a strong bar magnet.
 - c. The dynamo producing d.c. voltage.
 - d. The force acting on a current carrying conductor when placed in a uniform, magnetic field.

10. Induced current in a coil does NOT depend on

- a. number of turns of the coil.
- b. strength of magnetic field.
- c. resistance of the coil.
- d. temperature of the coil.

Fill in the blanks:



- 11. The above diagram depicts and the thumb indicates the direction of
- 12. The polarity of a/an can be reversed by reversing the direction of current.
- 13. The N-pole of a magnetic compass points towards North of earth because lies in that direction.
- 14. The magnetic lines of force originating at N-pole at S-pole

State whether the following statements are true or false:

- 15. A Galvanometer works on the principle of electromagnetic induction.
- 16. A current carrying circular coil behaves as a magnet.
- 17. In a motor, when the coil rotates a reverse voltage is also produced.
- 18. Steel can also be used for electromagnet.
- 19. The induced current in a coil is independent of speed of rotation of the coil.

mure





Play this game with your friend and find out who conserves the natural resources.

