

I. Answer the following:

20x1=20

- If $3x+y=10$ and $y=4$, then find the value of x ?
- The point of intersection of the lines $x-2=0$ and $y+6=0$ is _____.
- If $x^2+2Kx+4=0$ has a root $x=2$, then find the value of K .
- The Product of two consecutive natural numbers is 72. Find the natural numbers.
- What is the 100th term of the sequence 1,1,1,1,1,.....?
- In an AP, $a+a+d+2d+a+3d, \dots$. What is d called?
- $\Delta ABC, \sim \Delta PQR$. If $\frac{ar(\Delta ABC)}{ar(\Delta PQR)} = \frac{9}{4}$ and $AB = 18$ cm, then find the corresponding length of PQ .
- Sides of two similar triangles are in the ration 4:9. Find the ratio of the areas of these triangle.
- If $\tan \theta = \cot \theta$, then the value of $\sec \theta$ is
- If $\sin 2A = \frac{1}{2} \tan^2 45^\circ$, where 'A' is an acute angle then find the value of A.
- Find the sum of the deviations of the variate values 3,4,6,7,8,14 from their mean.
- The class with maximum frequency is called__.
- The angle of elevation of the top of a tower from a point on the ground, which is 30m away from the foot of a tower of height $10\sqrt{3}m$ is _____.
- The angle of elevation of the top of a tower from a point on the ground 30m away from the foot of the tower is 30° . Find the height of the tower.
- The total surface area of a solid hemisphere of radius r is ____.
- The radius of spherical balloon increases from 8cm to 12cm. Find the ratio of the surface areas of the balloon in two cases.
- Find the probability of getting two tails when two coins are tossed together.
- Find the probability of getting 53 fridays in a leap year.
- The positive average is _____.
- Find the 10th term of an AP 11,15,19,....

II. Answer the following:

6x2=12

- Is $\sqrt{5} + x^2 + 6x + 3 = 0$ a quadratic equation?
- Find k , if the given value of x is the k th term of the given AP, -1,-3,-5,-7,.....; $x = -151$.
- If the points $(a,0), (0,b)$ and $(1,1)$ are collinear, then find $\frac{1}{a} + \frac{1}{b}$
- Find the mean of the data using an empherical formula when it is given that mode is 50.5 and median is 45.5.
- A bag contains 6 red and 5 blue balls. Find the probability that the ball drawn is id not red.

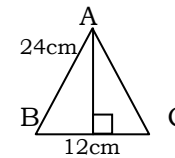
- A solid sphere of radius r is melted and recast into the shape of a solid cone of height r . Find the radius of the base of a cone.

III. Answer the following:

8x3=24

- Solve for x : $2x^2+6\sqrt{3}x-60=0$.

- In an equilateral of side 24cm, find the length of the altitude.



- The probability of getting a bad egg in a lot of 400 eggs is 0.035. Find the number of bad eggs in the lot.
- Find the value of P , if the points $A(2,3)$ $B(4,P)$ $C(6,-3)$ are collinear
- Sum of the ages of a father and the son is 40 years. If Father's age is three times that of his son, then find their respective age.
- The mean of the following distribution is 53. Find the missing frequency P .

Class	Frequency
0-20	12
20-40	15
40-60	32
60-80	P
80-100	13

- If $\tan A + \cot A = 2$, then, find the value of $\tan^2 A + \cot^2 A$.

- The common difference of an AP is -2. Find its sum, if first term is 100 and last term is -10.

IV. Solve

6x4=24

- State and Prove converse of Thales' Theorem.
- An AP consists of 37 terms. The sum of the three middle most terms is 225 and the sum of the past three terms is 429. Find the AP.
- A man on the top of a vertical tower observes a car moving at a uniform speed towards him. If it takes 12min. for the angle of depression to change from 30° to 45° , how soon after this, the car will reach the tower?
- In a rain- water harvesting system, the rain - water from a roof of $22m \times 20m$ drains into a cylindrical tank having diameter of base 2m and height 3.5m . If the tank is full, find the rainfall in cm. Write your views on water conservation.

39. Literacy rates of 40 cities are given in the following tables. If it is given that mean literacy rate is 63.5, then find the missing frequencies x and y .

Literacy rate (in %)	No. of cities
35-40	1
40-45	2
45-50	3
50-55	x
55-60	y
60-65	6
65-70	8
70-75	4
75-80	2
80-85	3
85-90	2

40. Draw the graphs of the equations $x-y+1=0$ and $3x+2y-12=0$. Determine the co-ordinates of the vertices of the triangle formed by these lines and the x axis and shade the triangular region.

I. Choose the right option from the following statements: $3 \times 1 = 3$

1. Assertion (A): Brown fumes are produced when lead nitrate is heated.

Reason (R): Nitrogen dioxide gas is produced as a by product due to the decomposition of lead nitrate.

a) Both (A) and (R) are correct and (R) is the explanation of (A)

b) Both (A) and (R) are correct, but (R) is not the correct explanation of (A)

c) (A) is correct but (R) is incorrect.

d) (A) is incorrect but (R) is correct.

2. Assertion (A): the Statement of ohm's law is $V=IR$

Reason(R): $V= IR$ is the equation which defines resistance.

a) (A) is true (R) are false.

b) (A) is false (R) is true.

c) (A) & (R) are true.

d) (A) & (R) are false.

3. Assertion(A): Stamens and pistils are non-reproductive parts of a

flower.

Reason (R): Stamens and pistil contain the germ cells.

a) Both A and R are correct R is the correct explanation of A.

b) Both A and R are correct, but R is not a correct explanation of A.

c) A is correct, but reason (R) is wrong statement.

d) A is wrong, but reason (R) is correct statement

e) Both A and R are wrong statement.

II. Fill in the blanks: $7 \times 1 = 7$

1. Reactions in which heat is given out along with products are called _____.

2. _____ is a synthetic indicator. A _____ indicator is mixture of several indicators.

3. Direction of rotation of a coil in electric motor is determined by _____.

4. If the magnification has a minus sign, then the image is _____ and _____.

5. The structure and functional units of lungs is _____.

6. The nervous system uses _____ to transmit messages.

7. _____ is the periodic discharge of blood, mucous uterine mucosa pieces, etc.. from uterus.

III. Answer in one sentence: $7 \times 1 = 7$

1. Write the molecular formula of first two members of homologous series having functional group $-Cl$.

2. Name the acids present in i) Nettle sting ii) curd.

3. For what position of object, a concave mirror forms a real image

equal to size of object?

4. Write one use of solenoid.

5. What process in plants is known as transpiration?

6. What happens when a mature spirogyra filament attains considerable length?

7. An organism which is a worm has very simple 'eyes' that are really eye spots which detect light. Name the organism.

SECTION-B

IV. Answer in brief: $7 \times 3 = 21$

1. i) In the electrolysis of water.

a) Name the gas collect at the cathode and anode respectively.

b) Why is volume of gas collected at one electrode double than that

at the other? Name this gas?

c) How will you test this gas?

(Or)

ii) Define the term decomposition reaction. Give one example each of thermal decomposition and electrolytic decomposition reactions.

2. i) A compound X on heating with excess of conc. H_2SO_4 at $443K$ gives an unsaturated compound Y. X also reacts with sodium metal to evolve a colourless gas. Identify X, Y and Z. Write the equations of the chemical reaction of formation of Y and also write the role of conc. H_2SO_4 in the reaction.

(Or)

ii) Draw the structural formula of all the possible isomers of the compound with the molecular formula C_3H_6O and also give their structure with names

3.i) The linear magnification produced by a spherical mirror is $\frac{1}{3}$.

Analysing this value state the a) type of mirror b) position of the object with respect to pole c) Draw ray diagram to justify your answer. (Or)

ii) a) How can we differentiate between convex and concave lenses without touching them.

b) Two thin lenses of power +3.5D and -2.5D. Find the focal length of the lenses.

4.i) Differentiate between AC & DC (Or)

ii) a) What are magnetic field lines?

b) why do magnetic field lines never cross each other?

c) Why are magnetic field lines closed curves?

5.i) a) Name the process by which an amoeba reproduces.

b) Draw the various stages of its reproduction in a proper sequence.

(Or)

ii) State the changes that take place in the uterus when:

a) implantation of embryo has occurred

b) female gamete/egg is not fertilised.

6. i) Distinguish between the acquired traits and the inherited traits in tabular form giving one example for each.

(Or)

ii) a) Define neurons

b) Name the parts of neuron where

i) information is acquired

ii) impulse must be converted into a chemical signal for onward transmission

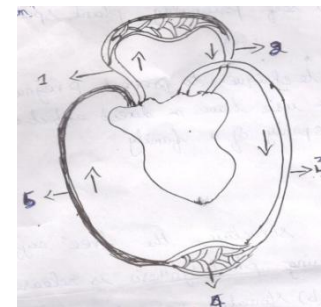
7.i) a) Insects, octopus and vertebrates all have eyes. Can we group eyes of these animals together to establish a common evolutionary origin? Justify your answer.

b) "Birds have evolved from reptiles" – state evidence to prove the statement.

(Or)

ii) a) label the parts in the given diagram.

b) What are the two functions represented in this diagram?



SECTION C

V. Answer in detail:

6x5=30

1. i) Write balanced chemical equation for the following statements:

a) NaOH solution is heated with Zinc granules

b) Excess of CO_2 is passed through lime water sodium carbonate

c) Dilute Sulphuric acid is added to Sodium carbonate.

d) Egg shell is dropped in hydrochloric acid.

e) Copper II oxide reacts with dilute hydrochloric acid.

(Or)

ii) Define chemical reaction. State four observations which help to determine whether a chemical reaction has taken place or not. Write one example of each observation with a balanced chemical equation.

2. i) a) Dry pellets of a base X when kept in open absorb moisture and turn sticky. The compound is also formed by chlor-alkali process. Write the chemical name and formula of X. Describe the chlor-alkali process with balanced chemical equations. Name the type of reaction that occurs when X is treated with dilute hydrochloric acid. Write the relevant chemical equations. b) While diluting an acid, why is it recommended that the acid should be added to water and not water to the acid?

(Or)

ii) a) Tooth enamel is one of the hardest substances in our body. Explain the changes in P^H of mouth which indicate tooth decay. How does tooth paste help in preventing it?

b) What is the nature of salt if P^H of its aqueous solution is greater than 7? Name the acid and base that would be used to prepare the following salts: i) Potassium sulphate ii) Ammonium chloride

3. i) a) Define electric power. Express it in terms of potential difference V and resistance R .

b) An electrical fuse is rated at 2A. What is meant by this statement?

c) An electric iron of 1Kw is operated at 220V. Find which of the following fuses that respectively rated 1A,3A & 5A can be used in it.

(Or)

ii) Two resistors 3Ω and unknown resistor are connected in a series across a 12V battery. If the voltage drop across the unknown resistor is 6V. Find

a) Potential across 3Ω resistor

b) the current through unknown resistor

c) equivalent resistance of the circuit.

4.i) At what distance from a concave lens of focal length 20cm, a 6cm, tall object be placed so as to obtain its image at 15cm from the lens ? Also calculate the size of the image formed Draw a ray diagram to justify yours answer.

(OR)

ii) a) State Flemings left hand rule

b) Write the principle of working of a motor.

c) Draw and label the parts of electric motor.

5. i) How do Mendel's' experiments show that

a) traits may be dominant or recessive?

b) inheritance of two traits is independent of each other?

(OR)

ii) a) Define excretion

b) Name the basic filtration unit present in the kidney.

c) Draw excretory system in human beings and label the following organs of the excretory system which perform following functions.

i) Forms urine

ii) is a long tube which collects urine from kidney

iii) store urine it is passed out.

6.i) a) What is speciation?

b) List four factors that could lead to speciation

c) Which of these cannot be a major factor in the speciation of a self-pollinating plant species? Explain

(OR)

ii) List three techniques to prevent pregnancy. How does their use have a direct effect on the health and prosperity of a family.

SECTION – D

VI. Choose the right choice from the following options: $3 \times 1 = 3$

1. When a few drops of phenolphthalein is added to dilute solution of sodium hydroxide, its colour changes to

a) pink b) violet c) green d) yellow

2. What sign is given to the focal length of convex mirror?

a) +ve b) -ve c) both + & -

c) either +ve or -ve.

3. From which structure the free oxygen gas produced during photosynthesis is released?

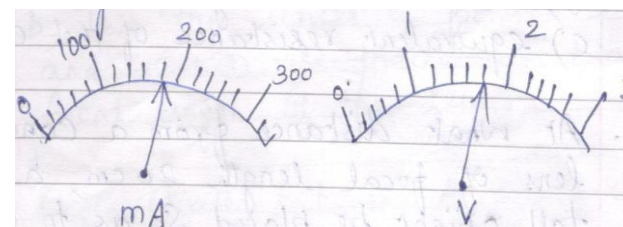
a) Epidermis b) stomata c) cortex d) Guard cell

VII. Answer in brief:

$3 \times 3 = 9$

1. While performing the experiment to study the properties of HCl and NaOH by reaction with Na_2CO_3 , how can a student confirm whether hydrogen or carbon dioxide gas is liberated?

2. The current flowing through a resistor connected in an electrical circuit and the potential difference developed across its ends are shown in the given diagrams.



Find the value of resistance of the resistors.

3. Leaves of a healthy potted plant were coated with Vaseline to block the stomata will this plant for long? State three reasons for your answer?

03.09.19 EVERWIN VIDHYASHRAM
CLASS: X HALF YEARLY ASSESSMENT Marks :
80
(DAZ,CUT,BLI)[AN] SOCIAL SCIENCE Time: 3
hrs

- I. Write the answer in one word. (20×1=20)
1. Who created the first image of Bharat Mata?
 2. Which act did not permit plantation workers to leave the tea garden without permission?
 3. Sometimes the _____ could make the difference between life and death.
 4. Who was the first Governor of the Massachusetts Bay Colony in New England?
 5. Define Corns Law?
 6. Resource planning in the widely accepted strategy for ____ use of resources.
 7. Which state is very well endowed with solar and wind energy but lacks in water resources?
 8. Three crops of paddy grown in Assam, West Bengal and Odisha are _____, ___ and _____.
 9. Which crops have high nutritional value?
 10. The _____ variety of coffee initially brought from yemen is produced in the country
 11. Why we need power sharing?
 12. Which reasons make power sharing essential and valuable?
 13. The era of _____ began after 1996
 14. What is caste hierarchy?
 15. What is a ruling party?
 16. For development people look at a _____ of goals
 17. Abbreviate: UNDP

18. Define Underemployment.
 19. Which is the largest source of Credit in rural areas?
 20. What is Globalisation?
- II. Answer in brief: (Any 8) (8×3=24)
1. What type of flag was designed during the Swadesi Movement in Bengal? Explain its main features? (or)
The relocation of industry to low-wage countries stimulated World Trade and Capital flows. Justify the statement
 2. What was the Khilafat agitation? Why did Gandhiji support this agitation?
 3. What are the three stages of Resource planning? (or)
Write any three characteristics of commercial farming
 4. Mention the factors which have influenced the change in the methods of cultivation?
 5. Compare the power sharing models of Belgium and Sri Lanka
 6. Describe the various forms of casteism in politics?
 7. Suggest some development goals for your locality (or)
Differentiate between Unemployment and disguised unemployment
 8. In India the rupee is widely accepted as a medium of exchange. Explain
- III. Write in detail: (6×5=30)
1. Why did Mahatma Gandhi find in 'salt' a powerful symbol that could unite the nation? Explain (or)
How did economic exploitation of the country arouse national consciousness among Indians in the late 19th century?
 2. Explain the three types of movements or flows within International Economic Exchange? (or)
How was the World transformed after the First World war?
 3. How does federalism work in India? (or)
Explain a. Alluvial soil b. Black soil c. Red and yellow soil
 4. What are the challenges faced by the political parties?

5. What are the four important fibre crops of India? Describe any two of them.

6. Explain these terms: a) Trade barrier b) MNC c) Investment d) cheque e) Collateral (or)

What are the advantages of working in organised sector?

IV. Mark these places in India Map. (6×1=6)

A.1. Indian National Congress session held on December 1920

2. Plantation workers strike held on this place

3. Peasants rebellion held on this place

B.1. Alluvial soil

2. Jowar producing state

3. Tea producing state.