## ISANT NISCHAL SINGH PUBLIC SCHOOL LADWA

## CLASS - X

# SUMMER HOLIDAY 

 HOMEWORKACADEMIC SESSION 2023-24

## ART INTEGRATED ACTIVITY

- Prepare a PPT of 10-15 slides on famous sports personality of Manipur \& Haryana


## ART INTEGRATED PROJECT

## General Instructions for ART INTEGRATED PROJECT :

The project needs to be developed and presented in this order.
a) Handwritten/ Type cover page showing project title, student's name, class, section, school's name and academic year.
b) Index page should include names of the subjects, page no. and a column for teacher's sign
c) Acknowledgements (acknowledging the institutions and persons who have helped).
d) The work is to be done in the given sequence only
e) Page limits (for each subject); Minimum 3 Maximum no limits excluding cover page, index page and acknowledgement page
f) Google text to be avoided.
g) You have to mention Project Report also.

## - English

Highlight the literary heritage of Manipur by featuring renowned poets ,writers anc their works. Mention their contributions to Manipuri literature and quote few lines from their notable poems and writings.

Provide brief Biographical Sketches of the featured poets ,highlighting their award and notable works.

Include interesting anecdotes or quotes that reflect their poetic style and philosophy. Also paste the photographs to support your Project

## - Social Science

Comparative Study of Mesmerizing traditions, Art , Music ,Food and Festivals of Manipur and Haryana.

## - Science

The integration of your state Haryana has to be done with state of Manipur under this project.
You have to prepare Project file of the under listed topics in relation to the state of Haryana and Manipur

Use all the topics to make the comparative study of Haryana and Manipur
Topic 1- Analysis of Indigenous soil and water conservation measures
Topic 2 - Eco-efficient approaches to land management
Topic 3-Conservation strategy for flora and fauna initiated by state governments.

Prepare an integrated project on the mathematical measurement or structure of any two monument of Manipur and Haryana

## - Hindi

* मणिपुर के प्रसिद्ध लेखकों और हरियाणा के प्रसिद्ध लेखकों का परिचय एवं उनकी साहित्यिक उपलब्धियों का वर्णन करते हुए एक परियोजना तैयार कीजिए।


## - Social-Science

## Revise and Learn the syllabus done.

Economics - Development, Sectors of Indian Economy.
Civics - Power Sharing, Federalism.
History - Nationalism in Europe, Nationalism in India.
Geo - Resources and Development, Forest and Wildlife Resources, Water Resources.

## Assignment

## - History \& Economics

1. Explain the Non - Cooperation Movement.
2. Explain the limitations of civil disobedience movement.
3. Explain the following-
a)Satyagraha movement.
b) Khilafat movement.
c) Rowlatt Act.
d) The Salt March.
d) Inland Emigration Act.
e) Guerrilla Movement.
3) Who wrote the book Hind Swaraj?
4) Who was Alluri Sitaram Raju?
5)Explain the following-
a) Unification of Italy
b)Unification of Germany
c) Unification of Britain.
5) Define Per Capita Income.
6) Differentiate between GDP and GNP.
7) Distinguish between Primary, Secondary and Tertiary sectors.
8) 'Developmental goals are conflicting in nature'. Explain.

## Assignment

## Geography \& Civics

1) Differentiate between Roof Top Rain Water Harvesting and Bamboo Drip Irrigation System.
2) Explain the following terms

- Shelter Belt
- Crop Insurance
- Gully Erosion
- Vulnerable Species
- Endangered Species
- Sheet Erosion

3) Define federalism
4) Differentiate between Coming together federation and Holding Together Federation.
5) Explain the different forms of power sharing .

## Hindi

- कबीर के 10 शिक्षाप्रद दोहों का संकलन कर लिखिए।
- 'आई एम कलाम' फिल्म देख कर उससे मिलने वाली शिक्षाएं लिखिए।
- Revise all chapters and poems


## English

- Watch a video of any motivational speaker and give a detailed account of it.
- Solve practice assignments $1,2,3,4,5,6$ from module 1 (Reading)in BBC.
- Solve practice assignments 16,17,18 from module 2 ( Writing) in BBC.
- Revise all the chapters and poems done in the class


## Chapter - Light

- Draw the ray diagram of convex lens, when the object placed at focus, between focu and centre of curvature.
- Draw the ray diagram of concave mirror, when the object placed at focus and i between focus and pole.
- A convex lens formed image of double of actual size having focus length 10 cm . fin $u$ and $v$.
- A concave mirror formed image of double of actual size having focus length 20 cr find $u$ and $v$.
- An object is placed 40 cm in front of convex mirror. The image appears 15 cm behin the mirror. What is focus of mirror?
- What are defects of eye? How can we correct them? Draw neat and clean diagram c these.
- Define power and what is its unit. Define 1 diopter.
- An incident wave falls off on plane mirror. The incident angle is $60^{\circ}$. what is angl between reflected angle and plane mirror?
- What is the focal length plane mirror?
- What is the effect on nature of image if object is moving towards convex mirror?
- Two plane mirrors are set at right angle and flower is placed between the mirrors Find the number of images formed.
- Which of following lenses would prefer to use while reading small letters i dictionary?
- The refractive index of medium $A$ is $3 / 2$ and medium $B$ is $4 / 3$. Find the relativ refractive index of $B$ with respect to $A$.
- The refractive index of diamond with respect to glass is 1.65 . what is the refractiv index of diamond.
- An object is placed at the centre of curvature of concave mirror. Find the distanc between its image and pole.
- A light bulb is placed inside a cube. A small hole is made on one of surface. The hol behaves which type of lens?
- What is the sign of power of convex lens and concave lens.
- In which mirror the image formed by mirror is equal in size and virtual and erect?
- In which medium the incident ray and emergent ray is parallel?
- A ray incident at an angle of 60 degree and the refractive index of medium is 1.732 Find the refracted angle.


## Chapter-chemical reaction and equations

Q1:-Identify the type of chemical reaction
i. A - -> B+C
ii. $A D+C B-->\quad A B+C D$

Q2:-Why does not silver evolve hydrogen on reacting with dil $\mathrm{H}_{2} \mathrm{SO}_{4}$ ?
Q3:-. Why do diamond and graphite, the two allotropic forms of carbon, evolve different amounts of heat on combustion?
Q4:-What happens chemically when quick lime is added to water?
Q5:-Why a combustion reaction an oxidation reaction?
Q6:-"We need to balance a skeltal chemical equation." Give reason to justify the statement.
Q7:-Name the reducing agent in the following reaction:

$$
3 \mathrm{MnO}_{2}+4 \mathrm{Al}--->3 \mathrm{Mn}+2 \mathrm{Al}_{2} \mathrm{O}_{3}
$$

Q8:-(i) Write a balanced chemical equation for process of photosynthesis.
(ii)When do desert plants take up carbon dioxide and perform photosynthesis?

Q9:- Name the type of chemical reaction represented by the following equation:
(i) $\mathrm{CaO}+\mathrm{H}_{2} \mathrm{O} \rightarrow \mathrm{Ca}(\mathrm{OH})_{2}$
(ii) $3 \mathrm{BaCl}_{2}+\mathrm{Al}_{2}(\mathrm{SO} 4)_{3}+2 \mathrm{AlC}_{3}+3 \mathrm{BaSO}_{4}$
(iii) $2 \mathrm{FeSO}_{4} \quad$ Heat. $\mathrm{Fe}_{2} \mathrm{O}_{3}+\mathrm{SO}_{2}+\mathrm{SO}_{3}$

Q10:-Write the chemical equation of the reaction in which the following changes have taken place with an example of each:
(i) Change in colour
(ii) Change in temperature
(iii) Formation of precipitate

Q11:-List four observations that help us to determine whether a chemical reaction has taken place.
Q12:-What is the role of oxidizing agent in a reaction?
Q13:-Identify the substance oxidized and reduced in the reaction.
$\mathrm{CuO}(\mathrm{s})+\mathrm{Zn}(\mathrm{s}) \quad---->\mathrm{ZnO}(\mathrm{s})+\mathrm{Cu}(\mathrm{s})$
Q14:-. A substance $X$ used for coating iron articles is added to a blue solution of a reddish. brown metal $Y$, the colour of the solution gets discharged. Identify $X$ and $Y \&$ also the typ of reaction.
Q15:-Why should a magnesium ribbon be cleaned before burning in air?
Q16:-What do you mean by a precipitation reaction? Explain by giving examples.
Q17:-Identify the substances that are oxidized and the substances that are reduced in the following reactions. $\quad 4 \mathrm{Na}(\mathrm{s})+\mathrm{O}_{2}(\mathrm{~g})--— —>\quad 2 \mathrm{Na}_{2} \mathrm{O}(\mathrm{s})$
Q18:-What is the product formed on adding quick lime to water?
Q19:-Write the chemical formula for marble.


Q21:- Write balanced chemical equations for the following chemical reactions:
(a) Hydrogen + Chlorine $\rightarrow$ Hydrogen chloride
(b) Lead + Copper chloride $\rightarrow$ Lead chloride + Copper
(c) Zinc oxide + Carbon $\rightarrow$ Zinc + Carbon monoxide

Q22:-Why should we not touch iron container in which CaO reacts with H 2 O ? Give reason Q23:-Why is aluminium called a self-protecting metal?
Q24:-A rod of metal $X$ is placed in an aqueous solution of lead nitrate. After sometime, it was observed that a thin layer of lead is deposited on the the rod of metal $X$. According tc you, which is more reactive, lead or metal $X$ and why?
Q25:-On what chemical law, balancing of chemical equation is based?
Q26:-Hydrogen being a highly inflammable gas and oxygen being a supporter of combustion, yet water which is a compound made up of hydrogen and oxygen is used to extinguish fire. Why?
Q27:-What is a redox reaction ? When a magnesium ribbon burns in air with a dazzling flame and forms a white ash; is magnesium oxidised or reduced ? Why?
Q28:-What does the symbol (aq) represent in a chemical equation?
Q29:-Why is photosynthesis considered an endothermic reaction?
Q30:-Why do we store silver chloride in dark colored bottles? Explain in brief.
Q31:- When hydrogen sulphide gas is passed through a blue solution of copper sulphate, 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.

Q32:- Study the following equation of a chemical reaction:
$\mathrm{H}_{2}+\mathrm{Cl}_{2} \rightarrow 2 \mathrm{HCl}$
(i) Identify the type of reaction.
(ii) Write a balanced chemical equation of another example of this type of reaction.

Q33:- A student prepares aqueous solutions of the following salts:
Copper sulphate: ferrous sulphate, Sodium sulphate, barium chloride. Write the colour of each solution thus formed.
Q34:- Write one equation each for decomposition reactions where energy is supplied in the form of heat, light and electricity.
Q35:- A sample of water weed was placed in water and exposed to sunlight. Bubbles of a gas are seen on the surface of the leaves.
(i) Name the gas evolved.
(ii) Name the process taking place.
(iii) Write a balanced equation of reaction taking place.

Q36:- Explain the following terms with suitable examples.
(a) Oxidation
(b) Reduction

Q37:- Write the balanced chemical equations for thefollowing reactions and identify the type of reaction in each case.
(b) Sodium hydroxide solution is treated withacetic acid to form sodium acetate and water.
(c) Ethanol is warmed with ethanoic acid toform ethyl acetate in the presence ofconcentrated H 2 SO 4
(d) Ethene is burnt in the presence of oxygen to form carbon dioxide, water and releases heat and light.
Q38:- What is lime water test for the detection of carbon dioxide?
Q 39:- Identify the oxidising agent (oxidant) in the following reactions:
(a) $\mathrm{Pb}_{3} \mathrm{O}_{4}+8 \mathrm{HCl} 3 \mathrm{PbCl}_{2}+\mathrm{Cl}_{2}+4 \mathrm{H}_{2} \mathrm{O}$
(b) $2 \mathrm{Mg}+\mathrm{O}_{2} \rightarrow 2 \mathrm{MgO}$
(c) $\mathrm{CuSO}_{4}+\mathrm{Zn} \rightarrow \mathrm{Cu}+\mathrm{ZnSO}_{4}$
(d) $\mathrm{V}_{2} \mathrm{O}_{5}+5 \mathrm{Ca} \rightarrow 2 \mathrm{~V}+5 \mathrm{CaO}$
(e) $3 \mathrm{Fe}+4 \mathrm{H}_{2} \mathrm{O} \rightarrow \mathrm{Fe}_{3} \mathrm{O}_{4}+4 \mathrm{H}_{2}$
(f) $\mathrm{CuO}+\mathrm{H}_{2} \rightarrow \mathrm{Cu}+\mathrm{H}_{2} \mathrm{O}$

Q40:- Write the balanced chemical equations for the following reactions and identify the type of
reaction in each case.
(a) Thermite reaction, iron (III) oxide reacts with aluminium and gives molten iron and aluminium oxide.
(b) Magnesium ribbon is burnt in an atmosphere of nitrogen gas to form solid magnesium nitride.
(c) Chlorine gas is passed in an aqueous potassium iodide solution to form potassium chloride solution and solid iodine.
(d) Ethanol is burnt in air to form carbon dioxide, water and releases heat

## Chapter Life processes

1.Name the term for transport of food from leaves to other parts of plants.

- What process in plants is known as transpiration.
- Name the tissue which transport soluble products of photosynthesis in a plant.
- Name the tissue which transport water and Minerals in a plant.
- How do autotrophs obtain CO2 and N2 to make their food?
- Which pancreatic enzyme is effective in digesting protein.
- Name the two ways in which glucose is oxidised to provide energy in various organisms.
- How do plants get each of the raw material required for photosynthesis.
- Name the intermediate and the and products of glucose breakdown in aerobic respiration.
- State the purpose of urine formation?.
- Give reason for the following
- why is diffusion not sufficient to meet oxygen requirement of all the cells in the multicellular organism?
- Howi dnec decort nlant norform nhotocionthocic if thoir ctnmata romain rlncod
- Differentiate between arteries and veins.
- Leakage of blood from the vessels reduce the efficiency of pumping system. How is leakage prevented?
- Major amount of water is selectively reabsorbed by the Tubular part of nephron in humans. What are the factors on which the amount of water reabsorbed depends?
- Leaves of a healthy potted plant were coated with Vaseline. Will this plant remain healthy for long? Give reason for your answer.
- Give reason -
- The two ventricles have thicker muscular wall than the two Atria in human heart.
- The capillaries have wall which are one cell thick.
- Glottis is covered by epiglottis
- The wall of track your supported by cartilage ring
- Long Al covered with blood capillaries 17. In which form nitrogen is taken by plants
- Compare Albela in the lungs and the nephron in the Kidney with respect to their structure and functioning.
- State three common features of respiratory organs of animals.
- Why is double circulation necessary in human being?


## Maths

## ASSIGNMENT

- Do the revision of chapters- $1,2,3,7,8,9,14,15$
- Class 10 Maths MCQs Chapter 1 Real Numbers

1. The largest number which divides 60 and 75 , leaving remainders 8 and $1 C$ respectively, is
(a) 260
(b) 75
(c) 65
(d) 13
2. HCF of $8,9,25$ is
(a) 8
(b) 9
(c) 25
(d) 1
3. Which of the following is not irrational?
(a) $(2-\sqrt{ } 3) 2$
(b) $(\sqrt{ } 2+\sqrt{ } 3) 2$
(r) $(\sqrt{ } 2-\sqrt{3})(\sqrt{ } 2+\sqrt{3})$
4. The product of a rational and irrational number is
(a) rational
(b) irrational
(c) both of above
(d) none of above
5. The sum of a rational and irrational number is
(a) rational
(b) irrational
(c) both of above
(d) none of above
6. The product of two different irrational numbers is always
(a) rational
(b) irrational
(c) both of above
(d) none of above
7. The sum of two irrational numbers is always
(a) irrational
(b) rational
(c) rational or irrational
(d) one
8. . If the HCF of 408 and 1032 is expressible in the form $1032 \times 2+408 \times p$ then the value of $p$ is
(a) 5
(b) -5
(c) 4
(d) -4
9. The product of three consecutive positive integers is divisible by
(a) 4
(b) 6
(c) no common factor
(d) only
10. The set $A=\{0,1,2,3,4, \ldots\}$ represents the set of
(a) whole numbers
(b) integers
(c) natural numbers
(d) even numbers
11. Which number is divisible by 11 ?
(a) 1516
(c) 1011
(d) 1121
12. LCM of the given number ' $x$ ' and ' $y$ ' where $y$ is a multiple of ' $x$ ' is given b)
(a) $x$
(b) $y$
(c) $x y$
(d) $x y$
13. The largest number that will divide 398,436 and 542 leaving remainders 7,11 and 15 respectively is
(a) 17
(b) 11
(c) 34
(d) 45
14. There are 312, 260 and 156 students in class $\mathrm{X}, \mathrm{XI}$ and XII respectively. Buses are to be hired to take these students to a picnic. Find the maximum number of students who can sit in a bus if each bus takes equal number of students
(a) 52
(b) 56
(c) 48
(d) 63
15. There is a circular path around a sports field. Priya takes 18 minutes to drive one round of the field. Harish takes 12 minutes. Suppose they both start at the same point and at the same time and go in the same direction.
After how many minutes will they meet?
(a) 36 minutes
(b) 18 minutes
(c) 6 minutes
(d) They will not meet
16. Express 98 as a product of its primes
(a) $2^{2} \times 7$
(b) $2^{2} \times 7^{2}$
(c) $2 \times 7^{2}$
(d) $2^{3} \times 7$
17. Three farmers have $490 \mathrm{~kg}, 588 \mathrm{~kg}$ and 882 kg of wheat respectively. Find the maximum capacity of a bag so that the wheat can be packed in exact number of bags.
(a) 98 kg
(b) 290 kg
(c) 200 kg
(d) 350 ka
18. The decimal expansion of the rational number 14587250 will terminate after:
(a) one decimal place
(b) two decimal places
(c) three decimal places
(d) four decimal places
19. For some integer $p$, every odd integer is of the form
(a) $2 p+1$
(b) $2 p$
(c) $p+1$
(d) $p$
20. . If two positive integers $A$ and $B$ can be ex-pressed as $A=x y 3$ and $B=$ xiy $2 z$; $x$, $y$ being prime numbers, the LCM $(A, B)$ is
(a) $x y^{2}$
(b) $x^{4} y^{2} z$
(c) $x^{4} y^{3}$
(d) $x^{4} y^{3} z$

## SHORT ANSWER TYPE QUESTIONS

Q21. Two positive integers ' $a$ ' and ' $b$ ' can be expressed $a s a=x 3$ y 2 and $b=x y$ '. $x$ and $y$
are prime numbers. What is the L.C.M and H.C.F of $a$ and $b$ ?
Q22. Prove that if $x$ and $y$ are both odd positive integers, then $x 2+y 2$ is even but not divisible by 4 .

Q23. Prove that $\mathrm{n} 2-\mathrm{n}$ is divisible by 2 for every positive integer ' n '.
Q24. Prove that one of every three consecutive positive integers is divisible by 3.

Q25. Find the H.C.F of 65 and 117 and express it in the form $65 m+117 n$.
Q26. If the H.C.F of 210 and 55 is expressible in the form of $210 \times 5+55 y$, find ' $y$ '.

Q27. Find the greatest number of six digits exactly divisible by 24,15 and 36 .
Q28. Three sets of English, Hindi and Mathematics books have to be stacked in such a
same.The number of English books is 96, the number of Hindi books is 24 and
the number of Mathematics books is 336. Assuming that the books are of same thickness, determine the number of stacks of English, Hindi and Mathematics books.

Q29. Two brands of chocolates are available in packs of 24 and 15 respectively. If I need
to buy an equal number of chocolates of both kinds, what is the least number of
boxes of each kind I would need to buy?
Q30. Given $\sqrt{ } 2$ is irrational, prove that $5+3 \sqrt{ } 2$ is an irrational number.
Class -10 Maths MCQs

## Chapter- 2 Polynomials

1. If one zero of the quadratic polynomial $x^{2}+3 x+k$ is 2 , then the value of $k$ is
(a) 10
(b) -10
(c) 5
(d) -5
2. Given that two of the zeroes of the cubic poly-nomial $a x^{3}+b x^{2}+c x+d$ are 0 , the third zero is
(a) $\frac{-b}{a}$
(b) $\frac{b}{a}$
(c) $\frac{c}{a}$
(d) $-\frac{d}{a}$
3. If one of the zeroes of the quadratic polynomial $(k-1) x^{2}+k x+1$ is -3 , then the value of $k$ is
(a) $\frac{4}{3}$
(b) $\frac{-4}{3}$
(c) $\frac{2}{3}$
(d) $\frac{-2}{3}$
4. A quadratic polynomial, whose zeroes are -3 and 4 , is
(a) $x^{2}-x+12$
(b) $x^{2}+x+1$
(c) $x 22-x 2-6$
(d) $2 x^{2}+2 x-$
5. If the zeroes of the quadratic polynomial $x 2+(a+1) x+b$ are 2 and -3 , then
(a) $a=-7, b=-1$
(b) $a=5, b=-1$
(c) $a=2, b=-6$
(d) $a-0, b=-6$
6. The number of polynomials having zeroes as -2 and 5 is
(a) 1
(b) 2
(c) 3
(d) more than 3
7. Given that one of the zeroes of the cubic polynomial $a x^{3}+b x^{2}+c x+d$ is
the other two zeroes is
(a) $-\frac{c}{a}$
(b) $\frac{c}{a}$
(c) 0
(d) $-\frac{b}{a}$
8. If one of the zeroes of the cubic polynomial $x^{3}+a x^{2}+b x+c$ is -1 , then the product of the other two zeroes is
(a) $b-a+1$
(b) $\mathrm{b}-\mathrm{a}-1$
(c) $a-b+1$
(d) $a-b-1$
9. The zeroes of the quadratic polynomial $x 2+99 x+127$ are
(a) both positive
(b) both negative
(c) one positive and one negative (d) both equal
10. The zeroes of the quadratic polynomial $x^{2}+k x+k, k$ ? 0 ,
(a) cannot both be positive
(b) cannot both be negative
(c) are always
unequal (d) are always equal
11. If the zeroes of the quadratic polynomial $a x^{2}+b x+c, c \# 0$ are equal, then
(a) c and a have opposite signs
(b) c and b have opposite signs
(c) c and a have the same sign
(d) c and b have the same sign
12. If one of the zeroes of a quadratic polynomial of the form $x^{2}+a x+b$ is the negative of the other, then it
(a) has no linear term and the constant term is negative.
(b) has no linear term and the constant term is positive.
(c) can have a linear term but the constant term is negative.
(d) can have a linear term but the constant term is positive.
13. Which of the following is not the graph of quadratic polynomial?
(a)

(b)

(c)

(d)

14. The number of polynomials having zeroes as 4 and 7 is
(a) 2
(b) 3
(c) 4
(d) more than 4
15. A quadratic polynomial, whose zeores are -4 and -5 , is
(a) $x^{2}-9 x+20$
(b) $x^{2}+9 x+20$
(c) $x^{2}-9 x-20$
(d) $x^{2}+9 x-20$
16. The zeroes of the quadratic polynomial $x^{2}+1750 x+175000$ are
(a) both negative
(b) one positive and one negative
(c) both positive
(d) both equal
17. The zeroes of the quadratic polynomial $x^{2}-15 x+50$ are
(a) both negative
(b) one positive and one negative
(c) both
(d) both equal
positive
18. The zeroes of the quadratic polynomial $3 x^{2}-48$ are
(a) both negative
(b) one positive and one negative
(c) both
(d) both equal
positive
19. The zeroes of the quadratic polynomial $x^{2}-18 x+81$ are
(a) both negative
(b) one positive and one negative
(c) both positive and unequal
(d) both equal and positive
20. The zeroes of the quadratic polynomial $x^{2}+p x+p, p \neq 0$ are
(a) both equal
(b) both cannot be positive
(c) both unequal
(d) both cannot be negative

## SHORT ANSWER TYPE QUESTIONS

21. If are the zeros of the quadratic polynomial $f(x)=X^{2}-5 X+4$, Find the value of + - 2 .
22. If one zero of the quadratic polynomial $f(x)=4 X^{2}-8 K X-9$ is negative of the other, find the value of $k$.
23.If the sum of zeros of the quadratic polynomial $F(t)=k t^{2}+2 t+3 k$ is equal to their product. Find the value of $k$.
23. Find a quadratic polynomial whose zeros are negative of the zeros of the polynomial $P X^{2}+q X+r$.
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26. Find a quadratic polynomial , the sum and product of whose zeros are respectively. Also find its zeros 27 . If 1 is the zero of the polynomial $p(x)=a x^{2}-3(a-$ 1) $x-1$, then find value of $a$.
27. If the graph of the quadratic polynomial + the negative direction of $y$ - axis , ther what
is the sign of c .
28. If the graph of the quadratic polynomial + the positive direction of $y$ - axis, then what is the sign of c .
29. If $f(x)=+-a-$

## MCQs for Chapter 3

1. The pairs of equations $x+2 y-5=0$ and $-4 x-8 y+20=0$ have:
(a) Unique solution
(b) Exactly two solutions
(c) Infinitely many solutions
(d) No solution
2. If a pair of linear equations is consistent, then the lines are:
(a) Parallel
(b) Always coincident
(c) Always intersecting
(d) Intersecting or coincident
3. The pairs of equations $9 x+3 y+12=0$ and $18 x+6 y+26=0$ have
(a) Unique solution
(b) Exactly two solutions
(c) Infinitely many solutions
(d) No solution
4. If the lines $3 x+2 k y-2=0$ and $2 x+5 y+1=0$ are parallel, then what is the value of $k$ ?
(a) $4 / 15$
(c) $4 / 5$
(d) $5 / 4$
5. If one equation of a pair of dependent linear equations is $-3 x+5 y-2=0$. The second equation will be:
(a) $-6 x+10 y-4=0$
(b) $6 x-10 y-4=0$
(c) $6 x+10 y-4=0$
(d) $-6 x+10 y+4=0$
6. The solution of the equations $x-y=2$ and $x+y=4$ is:
(a) 3 and 1
(b) 4 and 3
(c) 5 and 1
(d) -1 and -3
7. A fraction becomes $1 / 3$ when 1 is subtracted from the numerator and it becomes $1 / 4$ when 8 is added to
its denominator. The fraction obtained is:
(a) $3 / 12$
(b) $4 / 12$
(c) $5 / 12$
(d) $7 / 12$
8. The solution of $4 / x+3 y=14$ and $3 / x-4 y=23$ is:
(a) $1 / 5$ and -2
(b) $1 / 3$ and $1 / 2$
(c) 3 and $1 / 2$
(d) 2 and
9. The angles of cyclic quadrilaterals $A B C D$ are: $A=(6 x+10), B=(5 x)^{\circ}, C$
(a) $x=20^{\circ}$ and $y=10^{\circ}$
(b) $x=20^{\circ}$ and $y=30^{\circ}$
(c) $x=44^{\circ}$ and $y=15^{\circ}$
(d) $x=15^{\circ}$ and $y=15^{\circ}$.
10. The pair of equations $x=a$ and $y=b$ graphically represents lines which are
(a) parallel
(b) intersecting at (b, a)
(c) coincident
(d) intersecting at ( $\mathrm{a}, \mathrm{b}$ )
11. The pair of equations $5 x-15 y=8$ and $3 x-9 y=24 / 5$ has
(a) one solution
(b) two solutions
(c) infinitely many solutions
(d) no solution
12. The pair of equations $x+2 y+5=0$ and $-3 x-6 y+1=0$ have
(a) a unique solution
(b) exactly two solutions
(c) infinitely many solutions
(d) no solution
13. The value of $c$ for which the pair of equations $c x-y=2$ and $6 x-2 y$ $=3$ will have infinitely many

## solutions is

(a) 3
(b) -3
(c) -12
(d) no value
14. If the lines representing the pair of linear equations $a_{1} x+b_{1} y+c_{1}=$ and $\mathrm{a}_{2} \mathrm{x}+\mathrm{b}_{2} \mathrm{y}+\mathrm{c}_{2}=0$ are
coincident, then
(a) $a_{1} / a_{2}=b_{1} / b_{2}$
(b) $\mathrm{a}_{1} / \mathrm{a}_{2}=\mathrm{b}_{1} / \mathrm{b}_{2}=\mathrm{c}_{1} / \mathrm{c}_{2}$
(c) $a_{1} / a_{2} \neq b_{1} / b_{2}$
(d) $a_{1} / a_{2}=b_{1} / b_{2} \neq c_{1} / c_{2}$
15. A pair of linear equations which has a unique solution $x=2, y=-3$ i:
(a) $x+y=-1 ; 2 x-3 y=-5$
(b) $2 x+5 y=-11 ; 4 x+10 y=-22$
(c) $2 x-y=1 ; 3 x+2 y=0$
(d) $x-4 y-14=0 ; 5 x-y-13=0$
16. The father's age is six times his son's age. Four years hence, the age of the father will be four times
his son's age. The present ages, in years, of the son and the father are, respectively
(a) 4 and 24
(b) 5 and 30
(c) 6 and 36
(d) 3 and 24
17. If the pair of linear equations has a unique solution, then the lines representing these equations will
(a) coincide
(b) intersect at one point
(c) parallel to each other
(d) narallal th vosvic
18. Which of the following method(s) is/are used to find the solution of a pair of linear
equations algebraically?
(a) Substitution Method
(b) Elimination Method
(c) Cross- multiplication Method
(d) All the above
19. The graphical representation of a pair of equations $4 x+3 y-1=5$ and $12 x+9 y=15$ will be
(a) parallel lines
(b) coincident lines
(c) intersecting lines
(d) perpendicular lines
20. A two digit number is 4 times the sum of its digits. If 18 is added to the number, the digits are reserved. find the number.
(a) 24
(b) 42
(c) 36
(d) 63

## SHORT ANSWER TYPE QUESTIONS

21. Two numbers are in the ratio $5: 6$. If 8 is subtracted from each of the numbers, the ratio becomes 4:5.

Find the numbers.
22. A two digit number is obtained by either multiplying the sum of the digits $b$ 8 and then subtracting 5
23. The sum of bthe numerator and the denominator of a fraction is 12 . if the denominator is increased
by 3 , the fraction becomes $1 / 2$. Find the fraction.
24. The sum of the numerator and denominator of a fraction is 3 less than denominator. If the
numerator and denominator are decreased by 1 , the numerator becomes half the
denominator. Determine the fraction.
25. Two year ago a father was five times as old as his son. Two years later his age will be 8 more than

Three times the age of his son. Find the present ages of father and son.
26. Two years ago Ram was thrice as old as his daughter and six years later, he will be four years older than

Twice her age. How old are they now?
27. Points $A$ and $B$ are 90 km apartfrom each other on a highway. A car starts from point A
and another from point $B$ at the same time. If they go in the same direction they meet in nine
hours if they go in the opposite directions they meet in $9 / 7$ hours. Find their speeds.
28. There are two examination rooms A and B. If 10 candidates are sent fron $A$ To $B$, the number of

Students in each room is same. If 20 students are sent from B to $A$, The number of students in $A$ is

Double the number of students in B. Find the number of students in eact room.
29. In a competitive examination, one mark is awarded for each correct answer while $1 / 2$ mark is
deducted for each wrong answer. Anil awarded 120 questions and got 90 marks. How many
30. $2^{x+y}=2^{x-y}=$, find $x$ and $y$.

## CHAPTER- 7 (Coordinate Geometry)

## MCQs for Coordinate Geometry

1. The points $(-1,-2),(1,0),(-1,2),(-3,0)$ form a quadrilateral of type:
(a) Square
(b) Rectangle
(c) Parallelogram
(d) Rhombus
2. If the distance between the points $A(2,-2)$ and $B(-1, x)$ is equal to 5 , then the value of $x$ is:
(a) 2
(b) -2
(c) 1
(d) -1
3. The midpoint of a line segment joining two points $A(2,4)$ and $B(-2,-4$ is
(a) $(-2,4)$
(b) $(2,-4)$
(c) $(0,0)$
(d) $(-2,-4)$
4. The distance of point $A(2,4)$ from the $x$-axis is
(a) 2 units
(b) 4 units
(n) -7 unite
(d) -4 units
5. The distance between the points $P(0,2)$ and $Q(6,0)$ is
(a) $4 \sqrt{ } 10$
(b) $2 \sqrt{ } 10$
(c) $\sqrt{ } 10$
(d) 20
6. If $O(p / 3,4)$ is the midpoint of the line segment joining the points $P(-6$,

5 ) and $Q(-2,3)$, the the value of $p$ is:
(a) $7 / 2$
(b) -12
(c) 4
(d) -4
7. The point which divides the line segment of points $P(-1,7)$ and $(4,-3)$ in the ratio of 2:3 is:
(a) $(-1,3)$
(b) $(-1,-3)$
(c) $(1,-3)$
(d) $(1,3)$
8. The ratio in which the line segment joining the points $\mathrm{P}(-3,10)$ and $Q(6,-8)$ is divided by $O(-1,6)$ is:
(a) $1: 3$
(b) $3: 4$
(c) $2: 7$
(d) $2: 5$
9. The coordinates of a point $P$, where $P Q$ is the diameter of a circle whose centre is $(2,-3)$ and $Q$ is $(1,4)$ is:
(a) $(3,-10)$
(h) $10-101$
(c) $(-3,10)$
(d) $(-2,10)$
10. The area of a rhombus whose vertices are (3, 0), (4, 5), (-1, 4) and (-$2,-1$ ) taken in order, is:
(a) 12 sq.units
(b) 24 sq.units
(c) 30 sq.units
(d) 32 sq.units
11. The distance of the point $P(-6,8)$ from the origin is
(a) 8 units
(b) $2 \sqrt{ } 7$ units
(c) 10 units
(d) 6 units
12. The distance between the points $(0,5)$ and $(-5,0)$ is
(a) 5 units
(b) $5 \sqrt{ } 2$ units
(c) $2 \sqrt{ } 5$ units
(d) 10 units
13. The perimeter of a triangle with vertices $(0,4),(0,0)$ and $(3,0)$ is
(a) 5
(b) 12
(c) 11
(d) $7+\sqrt{ } 5$
14. The coordinates of a point $R$ on the line segment joining the points $p(-1,3), Q(2,5)$ such
that $P R=3 / 5 P Q$
(A) $(4 / 5,21 / 5)$
(B) $\left(0^{\circ} 0,1 / 5\right)^{\circ}$
(C) $(2 / 5,3 / 5)$
(D) NONE
15. The point which lies on the perpendicular bisector of the line segment joining the points $A(-2,-5)$ and $B(2,5)$ is
(a) $(0,0)$
(b) $(0,2)$
(c) $(2,0)$
(d) $(-2,0)$
16. If the points $A(1,2), O(0,0)$ and $C(a, b)$ are collinear, then
(a) $a=b$
(b) $a=2 b$
(c) $2 \mathrm{a}=\mathrm{b}$
(d) $a=-b$
17. If the points $A(6,1), B(8,2), C(9,4)$ and $D(p, 3)$ are the vertices of a parallelogram, taken in order, then the value of $p$ is
(a) 4
(b) -6
(c) 7
(d) -2
18. A line intersects the $y$-axis and $x$-axis at the points $P$ and $Q$, respectively. If $(2,-5)$ is the midpoint of $P Q$, then the coordinates of $P$ and $Q$ are, respectively
(a) $(0,-5)$ and $(2,0)$
(b) $(0,10)$ and $(-4,0)$
(c) $(0,4)$ and $(-10,0)$
(d) $(0,-10)$ and $(4,0)$
(a) $(0,13)$
(b) $(0,-13)$
(c) $(0,12)$
(d) $(13,0)$
20. The fourth vertex $D$ of a parallelogram $A B C D$ whose three vertices are $A(-2,3), B(6,7)$ and $C(8,3)$ is
(a) $(0,1)$
(b) $(0,-1)$
(c) $(-1,0)$
(d) $(1,0)$

## SHORT ANSWER TYPE QUESTIONS

21. Find a point on which is at equidistant from the points $A(2,-5)$ and $B(-$ 2,9)
22. Find a point on which is at equidistant from the points $A(6,5)$ and $B(-<$ ,3).
23. If the point $A(2,-4)$ is equidistant from $P(3,8)$ and $Q(-10, y)$. find the value of y . Also find the distance PQ.
24. Show that the points $A(1,-2), B(3,6), C(5,10), D(3,2)$ are the vertices of a parallelogram.
25. Name the quadrilateral formed by the points $A(2,-2), B(7,3), C(1,-1)$, $D(6,-6)$.and give reason for
your answer.
26. Prove that the points $(3,0),(4,5),(-1,4),(-2,-1)$, taken in order are the vertices of a Rhombus also find its area.
27. Name the type of a triangle formed by the points, $P(6)$.
28. The centre of a circle is ( $2 a, a-7$ ), Find the values of ' $a$ ' if the circle passes through the point $(11,-9)$
29. Two opposite vertices of a square are $(-1,2)$ and $(3,2)$. Find the coordinates of other two vertices.
30. Prove that the points $(2,-2),(-3,8)$, and $(-1,4)$ are collinear.
(a) $2 \cos \theta$
(b) 0
(d) 1
31. If $\triangle A B C$ is right angled at $C$, then the value of $\cos (A+B)$ is
(a) 0
(b) 1
(c) $\frac{1}{2}$
(d) $\frac{\sqrt{3}}{2}$
32. If $\sec \theta+\tan \theta=x$, then $\sec \theta=$
(a) $\frac{x^{2}+1}{x}$
(b) $\frac{x^{2}+1}{2 x}$
(c) $\frac{x^{2}-1}{2 x}$
(d) $\frac{x^{2}-1}{x}$
33. If $\sec \theta+\tan \theta=x$, then $\tan \theta=$
(a) $\frac{x^{2}+1}{x}$
(b) $\frac{x^{2}-1}{x}$
(c) $\frac{x^{2}+1}{2 x}$
(d) $\frac{x^{2}-1}{2 x}$
34. $\sec ^{4} A-\sec ^{2} A$ is equal to
(a) $\tan ^{2} A-\tan ^{4} A$
(b) $\tan ^{4} A-\tan ^{2} A$
(c) $\tan ^{4} A+\tan ^{2} A$
(d) $\tan ^{2} A+\tan ^{4} A$
35. $\cos ^{4} A-\sin ^{4} A$ is equal to
(a) $2 \cos ^{2} A+1$
(b) $2 \cos ^{2} A-1$
(c) $2 \sin ^{2} A-1$
(d) $2 \sin ^{2} A+1$
36. The value of $(1+\cot \theta-\operatorname{cosec} \theta)(1+\tan \theta+\sec \theta)$ is
(a) 1
(b) 2
(c) 4
(d) 0
37. $(\operatorname{cosec} \theta-\sin \theta)(\sec \theta-\cos \theta)(\tan \theta+\cot \theta)$ is equal
(a) 0
(b) 1
(c) -1
(d) none of thes

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warthe correct alternative in each of the following:
The length of shadow of a tower on the plane ground is $\sqrt{3}$ times the height of the tower angle of elevation of sun is
(a) $45^{\circ}$
(b) $30^{\circ}$
(c) $60^{\circ}$
(d) $90^{\circ}$
[CBSE
2. The angle of depression of a car, standing on the ground, from the top of a 75 m tower, is The distance of the car from the base of the tower (in metres) is
(a) $25 \sqrt{3}$
(b) $50 \sqrt{3}$
(c) $75 \sqrt{3}$
(d) 150
[CBSE

A ladder 15 m long just reaches the top of a vertical wall. If the ladder makes an angle d with the wall, then the height of the wall is
(a) $15 \sqrt{3} \mathrm{~m}$
(b) $\frac{15 \sqrt{3}}{2} \mathrm{~m}$
(c) $\frac{15}{2} \mathrm{~m}$
(d) 15 m
[CBSE
4. The angle of depression of a car parked on the road from the top of 150 m high tower is The distance of the car from the tower (in metres) is
(d) 75
[CBSE 2
(a) $50 \sqrt{3}$
(b) $150 \sqrt{3}$
(c) $150 \sqrt{2}$
hadow on the ground, then the at
[CBSE 20
If the height of a vertical pole is $\sqrt{3}$ tin
of elevation of the sun at that time is
(d) $75^{\circ}$
(c) $45^{\circ}$
(a) $30^{\circ}$
(b) $60^{\circ}$
of the tower is $45^{\circ}$. Then the heigh
(c) $\frac{50}{\sqrt{2}}$
(d) $\frac{50}{\sqrt{3}}$
(a) $50 \sqrt{3}$
(b) 50
7. A ladder makes an angle of $60^{\circ}$ with the ground when placed against a wall.
(a) $\frac{4}{\sqrt{3}}$
(b) $4 \sqrt{3}$
8. The ratio of the length of a rod and its shadow is $1: \sqrt{3}$
(d) 4
(a) $30^{\circ}$
(b) $45^{\circ}$
9. If the angle of elevation of a tower from a distance of 100 metres from its foot is $60^{\circ}$, then the
height of the tower is
(a) $100 \sqrt{3} \mathrm{~m}$
(b) $\frac{100}{\sqrt{3}} \mathrm{~m}$
(c) $50 \sqrt{3} \mathrm{~m}$
(d) $\frac{200}{\sqrt{3}} \mathrm{~m}$
10. If the altitude of the sum is at $60^{\circ}$, then the height of the vertical tower that will cast a shadow of length 30 m is
(a) $30 \sqrt{3} \mathrm{~m}$
(b) 15 m
(c) $\frac{30}{\sqrt{3}} \mathrm{~m}$
(d) $15 \sqrt{2} \mathrm{~m}$
11. If the angles of elevation of a tower from two points distant $a$ and $b(a>b)$ fro the same straight line from it are $30^{\circ}$ and $60^{\circ}$, then the her
$\begin{array}{llll}\text { (a) } \sqrt{a+b} & \text { (b) } \sqrt{a b} & \text { (c) } \sqrt{a-b} & \text { (d) } \sqrt{\frac{a}{b}}\end{array}$
(a) $\sqrt{a+b}$
$a$ and $b$ from the base ant
12. If the angles of elevation of the top of a tower from two points distant $a$ and
(a) $a b$
(b) $\sqrt{a b}$
(c) $\frac{a}{b}$
(d) $\sqrt{\frac{a}{b}}$
13. From a light house the angles of depression of two ships on opposite sides of the light house a observed to be $30^{\circ}$ and $45^{\circ}$. If the height of the light house is $h$ metres, the distance betweent
ships is
(a) $(\sqrt{3}+1) h \mathrm{~m}$
(b) $(\sqrt{3}-1) h \mathrm{~m}$
(c) $\sqrt{3} h \mathrm{~m}$
(d) $1+\left(1+\frac{1}{\sqrt{3}}\right) h_{1}$
14. The angle of elevation of the top of a tower standing on a horizontal plane from a point $A$ is After walking a distance $d$ towards the foot of the tower the angle of elevation is found to be The height of the tower is
(a) $\frac{d}{\cot \alpha+\cot \beta}$
(b) $\frac{d}{\cot \alpha-\cot \beta}$
(c) $\frac{d}{\tan \beta-\tan \alpha}$
(d) $\frac{d}{\tan \beta+\tan \alpha}$
15. The tops of two poles of height 20 m and 14 m are connected by a wire. If the wire makes angle of $30^{\circ}$ with horizontal, then the length of the wire is
(a) 12 m
(b) 10 m
(c) 8 m
(d) 6 m
16. From the top of a cliff 25 m high the angle of elevation of a tower is found to be equal to angle of depression of the foot of the tower. The height of the tower is
(a) 25 m
(b) 50 m
(c) 75 m
(d) 100 m
17. The angles of depression of two ships from the top of a light house are $45^{\circ}$ and $30^{\circ}$ towardse If the ships are 100 m apart, the height of the light house is
(a) $\frac{50}{\sqrt{3}+1} \mathrm{~m}$
(b) $\frac{50}{\sqrt{3}-1} \mathrm{~m}$
(c) $50(\sqrt{3}-1) \mathrm{m}$
(d) $50(\sqrt{3}+1) \mathrm{m}$
18. If the angle of elevation of a cloud from a point 200 m above a lake is $30^{\circ}$ and the ang depression of its reflection in the lake is $60^{\circ}$, then the height of the cloud above the lake, it
(a) 200 m
(b) 500 m
(c) 30 m
(d) 400 m
19. The height of a tower is 100 m . When the angle of elevation of the sun changes from $30^{\circ}$ the shadow of the tower becomes $x$ metres less. The value of $x$ is
(a) 100 m
(b) $100 \sqrt{3} \mathrm{~m}$
(c) $100(\sqrt{3}-1) \mathrm{m}$
(d) $\frac{100}{\sqrt{3}} \mathrm{~m}$
20. Two persons are a metres apart and the height of one is double that of the other. If fro middle point of the line joining their feet, an observer finds the angular elevation of the to be complementary, then the height of the shorter post is
(a) $\frac{a}{4}$
(b) $\frac{a}{\sqrt{2}}$
(c) $a \sqrt{2}$
(d) $\frac{a}{2 \sqrt{2}}$

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(a) $\frac{2}{3}$
(b) $\frac{1}{6}$
(c) $\frac{9}{25}$
12. Which of the following cannot be the prota
(a) $\frac{2}{3}$
(b) -1.5
(c) $15 \%$
(d) 0.7
13. If $P(E)=0.05$, then $P(\operatorname{not} E)=$
(a) -0.05
(b) 0.5
(c) 0.9
(d) 0.95
14. Which of the following cannot be the probability of occurrence of an event?
(a) 0.2
(b) 0.4
(c) 0.8
(d) 1.6
15. The probability of a certain event is
(a) 0
(b) 1
(c) $1 / 2$
(d) no existent
16. The probability of an impossible event is
(a) 0
(b) 1
(c) $1 / 2$
(d) non-existent
17. Aarushi sold 100 lottery tickets in which 5 tickets carry prizes. If Priya purchased a ticket, wha is the probability of Priya winning a prize?
(a) $\frac{19}{20}$
(b) $\frac{1}{25}$
(c) $\frac{1}{20}$
(d) $\frac{17}{20}$
18. A number is selected from first 50 natural numbers. What is the probability that it is a multip of 3 or 5 ?
(a) $\frac{13}{25}$
(b) $\frac{21}{50}$
(c) $\frac{12}{25}$
(d) $\frac{23}{50}$
19. A month is selected at random in a year. The probability that it is March or October, is
(a) $\frac{1}{12}$
(b) $\frac{1}{6}$
(c) $\frac{3}{4}$
(d) none of these
20. From the letters of the word "MOBILE", a letter is selected. The probability that the letter i vowel, is
(a) $\frac{1}{3}$
(b) $\frac{3}{7}$
(c) $\frac{1}{6}$
(d) $\frac{1}{2}$
21. A die is thrown once. The probability of getting a prime number is
(a) $\frac{2}{3}$
(b) $\frac{1}{3}$
(c) $\frac{1}{2}$
(d) $\frac{1}{6}$
[CBSE 2 :3]
22. The probability of getting an even number, when a die is thrown once is
(a) $\frac{1}{2}$
(b) $\frac{1}{3}$
(c) $\frac{1}{6}$
(d) $\frac{5}{6}$
[CBSE
23. A box contains 90 discs, numbered from 1 to 90 . If one disc is drawn at random from the ix, the probability that it bears a prime number less than 23 , is
(a) $\frac{7}{90}$
(b) $\frac{10}{90}$
(c) $\frac{4}{45}$
(d) $\frac{9}{89}$
[CBSE
24. The probability that a number selected at random from the numbers $1,2,3, \ldots, 15$ is a mu

## Information Technology

Part-B - Learn - Web Application and Security
Practical-

- Make an invitation for friends of your Birthday party with the help of ( *character and paragraph style )* \& using *Template* .Submit in Soft copy.


## Art \& Craft

Draw the following-

- 2 landscape ( colored pencil shading)
- 2 Nature study (leaves, flower)
- 1 Still life
- Page 37-(2 birds, 2 animals and trees with colors)


## Physical Education

## 1. Athletics

- Draw 400 meters Track.

2. Draw track of : Running, Jumping , Throwing field events.
3. Write about any one game mentioned in Sports file ( Cricket or Volleyball or Badminto etc).
4. Paste and mention write up about 15 Yoga asana.
