**ST. COLUMBUS SCHOOL**
**DAYALBAGH, FBD.**
**HOLIDAY HOMEWORK FOR WINTER BREAK (2024-25)**
**CLASS –X**

Dear Parent,

Greetings!!

Holiday is the time that all students eagerly wait for. We all make plans to enjoy, relax and to empower ourselves during these days.

This winter vacation, the holiday homework is designed as a medium for you all to achieve the motto of "Fun and Learn".

We have made this winter break homework only activity-based. We are looking forward to the children coming back with smiling and joyous faces .

All of us at St. Columbus School wish happy and enjoyable holidays and Happy New Year to one and all.

Regards

Columbian Family

# ST. COLUMBUS SCHOOL

## DAYALBAGH, FARIDABAD
## CLASS X

### Sub-English

Q1. Children usually do not want any interference in their life, they get irritated and start ignoring their instructions. Make a list of Do's and Don'ts in relation to your behavior with parents in reference to the poem 'Amanda'.
Q2. "Do not judge a book by its cover." Discuss with reference to Custard's character in the poem- "The Tale of Custard the Dragon."
Q3. What according to the poet, is the lesson of life that the boy will learn after the loss of the ball?
Q4. Describe the two legends related to the origin of tea.
Q5. "Man's goodness is a flame that can be hidden but never extinguished." Why does Mandela say this?
Q6. What prompted the Post Master to respond to Lencho's letter?
Q7. Lomov was desperate to get married. Comment.

### Sub-Hindi

1. **पाठ्यक्रम की कोई भी एक कविता याद करके तथा उसका वीडियो बनाकर मुझे व्यक्तिगत प्रेषित करें । (कविता डेढ़ मिनट से पाँच मिनट )**

2. **'पर्यावरण-संरक्षण' पर या अपने द्वारा बनाई गई 'पहाड़ी चॉकलेट' पर विज्ञापन तैयार करें ।** (40 शब्द)

3. **मित्र की नौकरी लगने पर उसे शुभकामना संदेश प्रेषित करें।** ( 40 शब्द)

4. **'भाग्य और पुरुषार्थ' अथवा 'स्वतंत्रता का अमृत महोत्सव' में से किसी एक विषय पर अनुच्छेद लिखिए ।** (120 शब्द)

5. **मणिपुर के किन्हीं दस स्वतंत्रता संग्राम सेनानियों की परियोजना फ़ाइल बनाएँ, जिसमें इन सेनानियों की फ़ोटो, नाम, जन्म-मृत्यु तिथि, महत्त्वपूर्ण कार्य/ स्वतंत्रता प्राप्ति हेतु सहयोग आदि का वर्णन हो।** (A4 साइज़ पेपर में)

6. **अभी तक जो भी पढ़ाया गया है, उसको कम-से कम पाँच बार दोहराएँ। आते ही उसी से प्रश्न पूछे जाएँगे।**

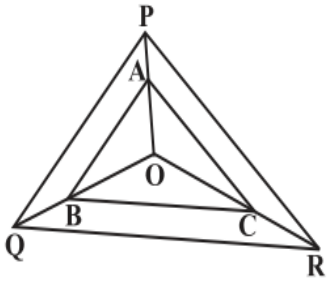
7. **चमोली ज़िले के दर्शनीय स्थलों की जानकारी देते हुए मुम्बई -स्थित अपने मित्र को पत्र लिखिए ।** (100 **शब्द**)

8. 80 **शब्दों में उपलब्ध रिक्ति (राम पब्लिक स्कूल में हिंदी-अध्यापक के पद हेतु) के लिए एक स्ववृत्त** (biodata) **लिखिए।**

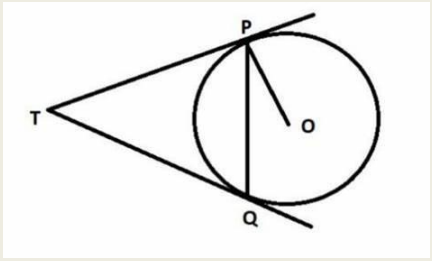
## Sub- Maths

### Section-A

1. Find the area of a sector of a circle with the radius 6 cm if angle of the sector is $60^0$ .
2. The minute hand of a clock is 12 cm long. Find the area of the face of the clock described by the minute hand in 35 minutes.
3. Find HCF and LCM of 96 and 120.
4. If $a\cos\theta+b\sin\theta=m$ and $a\sin\theta-b\cos\theta=n$, then what is the value of $a^2+b^2$?
5. If a and b are acute angles such that $\sin(a-b)=0$ and $2\cos(a+b)-1=0$ , then find values of angles a and b.
6. Find the ratio in which the y−axis divides the line segment joining the points (5,−6) and (−1,−4). Also find the point of intersection.
7. Find the value of m for which the quadratic equation
   $(m-1)x^2 + 2(m-1)x + 1 = 0$ has two real and equal roots.
8. Prove that $\sqrt{3}$ is an irrational number.
9. State and Prove basic proportionality theorem.
10. In given figure, A, B and C are points on OP, OQ and OR respectively such that AB || PQ and AC || PR. Show that BC || QR.




11. In figure, two tangents TP and TQ are drawn to a circle with centre O from an external point T.



Prove that ∠PTQ=2 ∠OPQ.

12. The first and last term of an AP are 5 and 45 respectively. If the sum of all its terms is 400, find its common difference.
13. The sum of the digits of a two-digit number is 9. Also, nine times this number is twice the number obtained by reversing the order of the digits. Find the number.

14. Three different coins are tossed together. Find the probability of getting
    (i) exactly two heads
    (ii) at least two heads
    (iii) at least two tails.
15. Red queen and a black jack are removed from a pack of 52 playing cards. Find the probability that the card drawn from the remaining cards is:
    (i) a red card
    (ii) neither a jack nor a king
    (iii)either a king or a queen.

16. (a)A man standing on the deck of a ship, which is 10 m above water level, observes the angle of elevation of the top of a hill as 60° and the angle of depression of the base of hill as 30°. Find the distance of the hill from the ship and the height of the hill.
(b)The angles of depression of the top and bottom of a 50 m high building from the top of a tower are 45° and 60° respectively. Find the height of the tower and the horizontal distance between the tower and the building, (use $\sqrt{3} = 1.73$)
17. A student, was asked to make a model shaped like a cylinder with two cones attached at its two ends by using a thin aluminium sheet. The diameter of the model is 3 cm and its length is 12 cm. If each cone has a height of 2 cm, find the volume of air contained in the model.
18. A solid wooden toy is in the form of a hemisphere surmounted by a cone of same radius. The radius of hemisphere is 3.5 cm and the total wood used in the making of toy is $166\frac{5}{6}$ $cm^3$. Find the height of the toy. Also, find the cost of painting the hemispherical part of the toy at the rate of □10 per $cm^2$.

19. A horse is tied to a peg at one corner of a square shaped grass field of side 15 m by means of a 5 m long rope. Find
    (i) the area of that part of the field in which the horse can graze.
    (ii) The increase in the grazing area if the rope were 10 m long instead of 5 m. (Use $\pi$=3.14)
20. If the total no. of students are 40, then find x and then find median and mean of the given data.

| Class | 0 – 10 | 10 – 2 0 | 20 –30 | 30 –40 | 40 –50 | 50 –60 | 60 – 70 | Total |
|---|---|---|---|---|---|---|---|---|
| frequency | x | 5 | 9 | 12 | 6 | 3 | 2 | 40 |

21. Currency is a medium of exchange for goods and services. Ashok made a payment to shopkeeper, for the article he purchased, in the denomination of Rs.500 and Rs.20. He paid Rs.2640 to the shopkeeper. If all the denomination of Rs. 500 is to be changed by Rs. 100 then the boy could have paid Rs.640 only. Assume the number of currency notes of Rs. 500 as 'f' and the number of currency notes of Rs. 20 as 'g'

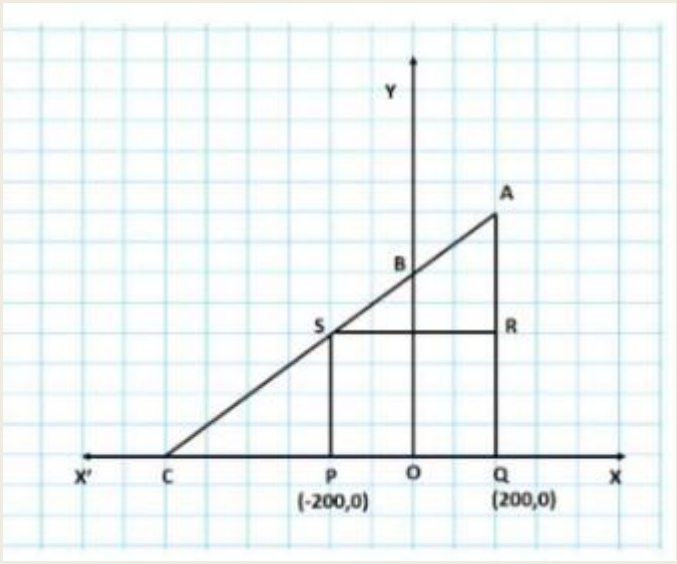
Based on the above information, answer the following questions:

(i) Write a linear equation representing the amount paid by Ashok.

(ii) If Ashok had to pay Rs. 2800 to the shopkeeper, how many Rs.20 notes did he need?

(iii)How many total currency notes did Ashok gave to shopkeeper?

22. Jagdish has a field which is in the shape of a right angled triangle AQC. He wants to leave a space in the form of a square PQRS inside the field for growing wheat and the remaining for growing vegetables (as shown in the figure). In the field, there is a pole marked as O.




Based on the above information, answer the following questions :

(i) Taking O as origin, coordinates of P are (-200, 0) and of Q are (200, 0). PQRS being a square, what are the coordinates of R and S?

(ii) (a) What is the area of square PQRS ?

OR

(b) What is the length of diagonal PR in square PQRS?

(iii)If S divides CA in the ratio K:1, what is the value of K, where point A is (200, 800) ?

23. An engineer is planning to make all the Pillars of the Metro green with plants to make these beautiful and to contribute for healthy environment as shown in the picture. Observe the picture and answer the questions if dimension of one pillar is 1.5 m X 1.5 m X 20 m

Based on the above information, answer the following questions:

(i) What is the shape of the pillars?
(ii) How much cement is used to fill the pillar?
(iii)Find the lateral surface area of one pillar.

Complete the lab activity file based on the following topics:(By paper cutting and pasting)

(1) Pair of linear equation in one variable.
(2) Arithmetic Progression
(3) Triangles
(4) Circles
(5) Trigonometric
(6) Probability
(7) Coordinate Geometry

## Sub- Science

1. Complete the following practicals in pratical file.
2. Revise full syllabus and prepare for board exam.

Chemistry

1. A. Finding the pH of the following samples by using pH paper/universal indicator
(i) Dilute Hydrochloric Acid
(ii) Dilute NaOH solution
(iii) Dilute Ethanoic Acid solution
(iv) Lemon juice
(v) Water
(vi) Dilute Hydrogen Carbonate solution
B. Studying the properties of acids and bases (HCl & NaOH) on the basis of their reaction with:

- Litmus solution (Blue/Red)
- Zinc metal
- Solid sodium carbonate

2. Performing and observing the following reactions and classifying them into:
A. Combination reaction
B. Decomposition reaction
C. Displacement reaction
D. Double displacement reaction
i) Action of water on quicklime
ii) Action of heat on ferrous sulphate crystals
iii) Iron nails kept in copper sulphate solution
iv) Reaction between sodium sulphate and barium chloride solutions
3. A. Observing the action of Zn, Fe, Cu and Al metals on the following salt solutions:

- $ZnSO_4(aq)$
- $FeSO_4(aq)$
- $CuSO_4(aq)$
- $Al_2(SO_4)_3(aq)$

B. Arranging Zn, Fe, Cu and Al (metals) in the decreasing order of reactivity based on the above result.
4. Study of the following properties of acetic acid (ethanoic acid)
i) Odour
ii) solubility in water
iii) effect on litmus
iv) reaction with Sodium Hydrogen Carbonate

**Biology**

1. Preparing a temporary mount of a leaf peel to show stomata.
2. Experimentally show that carbon dioxide is given out during respiration.
3. Studying (a) binary fission in Amoeba and (b) budding in yeast and Hydra with the help of prepared slides.
4. Identification of the different parts of an embryo of a dicot seed (Peas, gram or red kidney bean).

**Physics**

1. Tracing the path of a ray of light passing through a rectangular glass slab for different angles of incidence. Measure the angle of incidence, angle of refraction, and angle of emergence and interpret the result.
2. Tracing the path of the rays of light through a glass prism.

3. Studying the dependence of potential difference (V) across a resistor on the current (I) passing through it and determining its resistance. Also, plotting a graph between V and I.

## Chemistry

1 **A compound X is formed by the reaction of a carboxylic acid $C_2H_4O_2$ and an alcohol in the presence of a few drops of $H_2SO_4$. The alcohol on oxidation with alkaline $KMnO_4$ followed by acidification gives the same carboxylic acid as used in this reaction. Give the names and structures of (a) carboxylic acid, (b) alcohol and (c) the compound X. Also write the reaction.**

2. **Why detergents are better cleansing agents than soaps? Explain.**

3. **How is ethene prepared from ethanol? Give the reaction involved in it.**

4. **A gas is evolved when ethanol reacts with sodium. Name the gas evolved and also write the balanced chemical equation of the reaction involved.**

5. **Catenation is the ability of an atom to form bonds with other atoms of the same element. It is exhibited by both carbon and silicon. Compare the ability of catenation of the two elements. Give reasons.**

## Physics

1. **When do we consider a person to be myopic or hypermetropic? Explain using diagrams how the defects associated with myopic and hypermetropic eye can be corrected.**

2. **Explain the refraction of light through a triangular glass prism using a labelled ray diagram. Hence define the angle of deviation.**

3. **Under what conditions permanent electromagnet is obtained if a current-carrying solenoid is used? Support your answer with the help of a labelled circuit diagram.**

4. **What does the direction of thumb indicate in the right-hand thumb rule? In what way this rule is different from Fleming's left-hand rule?**

5. **Meena draws magnetic field lines of the field close to the axis of a current-carrying circular loop. As she moves away from the centre of the circular loop she observes that the lines keep on diverging. How will you explain her observation?**

## Biology

1. **Do the genetic combination of mother's play a significant role in determining the sex of a new born?**

2. **Does the occurrence of the diversity of animals on earth suggest their diverse ancestry also? Discuss this point in the light of evolution.**

3. **Describe the process of urine formation in kidneys**

4. **Explain the three pathways of breakdown of glucose in living organisms.**

5. **How do carbohydrates, proteins and fats get digested in human beings?**

## Sub- Social Science

Q1. State the reasons for Silesian weavers' uprising. How did they showed their anger?
Q2. The decade of 1830s known as the decade of great economic hardship in Europe. Why?
Q3. What was Rowlatt Act?
Q4. Explain the three Satyagraha done by Mahatma Gandhi.

Q5. Explain how global transfer of disease in the pre-modern world helped in the colonization of America.
Q6. How were the silk routes a good example of vibrant pre-modern trade and cultural links? Explain.
Q7. Describe the impact of print reading in Europe.
Q8. Why did Roman Catholic Church impose control over publishers and booksellers?
Q9. Classify the resource on the basis of status of development.
Q10. How is the issue of Sustainability important for development?
Q11. Define the features of Black and Alluvial Soil.
Q12. What is Agenda 21?
Q13. In what ways the forests were harmed by the Colonial government?
Q14. What are the benefits of constructing tanks in Rajasthan?
Q15. Describe the geographical conditions of Rice.
Q16. Explain the difference between horizontal distribution and vertical distribution of power.
Q17. What is bi-party system? State it's merits.
Q18. What is BMI?
Q19. How can the problem of unemployment be eradicated in India?
Q20. How does money solve the problem of double coincidence of wants?
**NOTE: Make a project file on Consumer Rights.**

## Sub- I.T.

Q1. Describe advantages of Networking.
Q2. Define Hazards. Write different sources of hazards.
Q3. Define basic fire safety rules.
Q4. Give any 4 good practices for internet security.
Q5. Write general guidelines for managing strong password.
Q6. Explain data transfer on Internet.
Q7. Explain different types of Networking.
Q8. Define the following:
(a) Fields
(b) Primary key
(c) Foreign key
Q9. What are relative and absolute hyperlinks?
Q10. Define:
(a) Goal Seek
(b) Scenario
(c) Subtotal
(d) Templates
(e) Solver
(f) Macro
Q11. Define TOC. Explain all the buttons present on the Structural line.
Q12. What is Data type? Explain all types of data types.
Q13. Define styles. Write name of all types of styles. Explain any two.
Q14. Write steps to add a new sheet and how to rename a new sheet?
Q15. Write all situations when we are saving a shared worksheet.
Q16. Explain Operating System. Write all the types of OS.
Q17. Define relationship. Explain all three types of relationship.