

Holiday Home Work

English Core Class XI

1. Paste 6 article clippings from the newspaper (current global issues).
2. Draft posters to create awareness on – a) measures and prevention of Covid 19, b) prevention of Drug Abuse c) Violence Against Women d) Fire Safety and prevention
3. Write Formal Letters- a) Complaint b) Editor c) Placing order d) Enquiry (three of each category)
4. Hornbill- Read and revise the following chapters

L. 1 The Portrait Of A Lady by Khushwant Singh

L.2 We are not afraid to die ... If we all are together by Gordon Cook and Alan East

Poem . A Photograph by Shirley Toulson.

Snapshot – Read and revise the following chapters

L.1 The Summer of the beautiful White Horse by William Saroyan

L. 2 The Address by Margo Minco

Read newspaper daily to aware yourself about the happenings around the world.

Note: All the work is to be done in English classwork register.

HOLIDAY HOMEWORK

CLASS – XI

PHYSICS

- Write about five physicists – two pages for each in scrap book.
- Learn chapters 1, 2, and 3 notes.
- Do 50 numericals from chapter 2 and chapter 3 in separate copy from any help book such as S. L. Arora or Together with or any else.
(Prefer previous years' board examinations problems)

Holiday Homework

Class - 11

Chemistry

1. Write notes and question answers of chapter 1 and 2 in your note book.
2. Learn the chapters done till date.
3. Write the electronic configuration of elements (atomic number 1- 50) in terms of s,p,d,f.
4. Learn the s-and p- block elements.
5. Solve 15 numerical each from the 2 chapters.
6. Write all the solved examples of both chapters.

Note:- All the above mentioned work to be done in your chemistry note book.

Practical file work is attached in this PDF. Write the experiments in your Chemistry lab manual neatly.

EXPERIMENT - 1.

Aim \rightarrow To analyse the anions present in the given salt qualitatively and systematically.

EXPERIMENT	OBSERVATION	INFERENCE
1. Salt is taken in perfectly dry test tube and dilute H_2SO_4 is added to it.	Brisk effervescence obtained, when pass through lime water, it turns milky but not turn potassium dichromate green.	May be CO_3^{2-}
confirmatory test Salt is taken in a test tube and $MgSO_4$ is added to it.	White precipitate	CO_3^{2-} confirmed
1) Salt is taken in perfectly dry test tube and dilute H_2SO_4 is added to it.	colourless gas with smell like that of rotten eggs turns lead acetate paper black.	May be S^{2-}
confirmatory test 2) To the salt solution taken in a test tube, add few drops of Sodium nitroprusside solution.	purple or violet colouration is obtained	S^{2-} confirmed

3) To the salt solution add few drops of acetic acid followed by lead acetate solution	Black precipitate is obtained	S^{2-} confirmed
1) Salt is taken in perfectly dry test tube and dilute H_2SO_4 is added to it. confirmatory test	colourless pungent gas evolved which turns acidified potassium dichromate solution green	May be SO_3^{2-}
2) To the salt solution taken in a test tube, add few drops of barium chloride solution.	white precipitate obtained which dissolves on addition of excess of dil. HCl	SO_3^{2-} confirmed
3) To the salt add few drops of acidified $KMnO_4$	Pink colour disappears.	SO_3^{2-} confirmed
1) Salt is taken in perfectly dry test tube and dilute H_2SO_4 is added to it. confirmatory test	Reddish brown pungent smelling gas evolved which turns $FeSO_4$ solution black.	May be NO_2^-
2) To the salt solution taken in a test tube, add few drops of acetic acid and $FeSO_4$ solution	Dark brown or black colouration obtained	NO_2^- Confirmed

Teacher's Signature .

3) To the Salt Solution, add few drops of dil. H_2SO_4 and KI Solution followed by freshly prepared starch solution

Blue solution obtained

NO_2 confirmed

RESULT →

Given Salt Samples contains the following ion:

CO_3^{2-} , S^{2-} , SO_3^{2-} and NO_2^-

=====

Experiment - 2

Aim \rightarrow To analyse the anions present in the given salt qualitatively and systematically.

EXPERIMENT	OBSERVATION	INFERENCE
1) Salt is taken in perfectly dry test tube and dilute H_2SO_4 is added to it.	No reaction	$CO_3^{2-}, S^{2-}, SO_3^{2-}, NO_2^-$ absent
2) Salt is taken in a dry test tube and conc. H_2SO_4 is added to it and heated.	white fumes evolved which become dense on bringing a glass rod dipped in NH_4OH solution.	May be Cl^-
confirmatory test		
1) Take salt in a test tube and solid $K_2Cr_2O_7$ is added followed by conc. H_2SO_4 and the mixture is heated. To the yellow solution,	Red fumes of chromyl chloride comes out. On passing through $NaOH$ solution, it turns yellow.	Cl^- confirmed
the yellow solution, acetic acid along with lead acetate solution is added.	yellow precipitate obtained	Cl^- confirmed
2) To the salt solution few drops of HNO_3 is added followed by silver nitrate solution.	white precipitate obtained which is completely soluble in NH_4OH solution.	Cl^- confirmed.

Teacher's Signature : _____

1) Salt is taken in perfectly dry test tube and dilute H_2SO_4 is added to it.	No reaction	CO_3^{2-} S^{2-} SO_3^{2-} NO_2^- absent
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2) Salt is taken in a dry test tube and conc. H_2SO_4 is added to it and heated.	Reddish brown fumes with pungent smell are obtained	May be Br^- or NO_3^-
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Add Copper turnings to the test tube.	Brown fumes become dense.	NO_3^- Confirmed
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Confirmatory test

3) Add freshly prepared $FeSO_4$ solution to the salt solution and then conc. H_2SO_4 is added along the walls of the test tube.	Brown ring is obtained	NO_3^- Confirmed
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4) Diphenylamine test

Add few drops of diphenylamine to the salt solution	Deep blue colour obtained.	NO_3^- Confirmed
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Teacher's Signature : _____

1) Salt is taken in perfectly dry test tube and dilute H_2SO_4 is added to it.

No reaction

$CO_3^{2-}, S^{2-}, SO_3^{2-}$
 NO_2^- absent

2) Salt is taken in a dry test tube and conc. H_2SO_4 is added to it and heated

white fumes evolved with vinegar like smell

May be CH_3COO

confirmatory test

1) salt is taken in a watch glass and mixed with solid oxalic acid and paste is prepared.

vinegar like smell

CH_3COO Confirmed

2) Salt solution is taken and $FeCl_3$ solution is added to it.

Red coloured filtrate obtained.

Divide filtrate into two parts:

a) To the first part, HCl is added followed by water. 2) To the second part distilled water is added and boiled

Red colour disappears.

CH_3COO^- Confirmed

Reddish brown precipitate obtained

CH_3COO^- Confirmed

Teacher's Signature : _____

1) Salt is taken in perfectly dry test tube and dilute H_2SO_4 is added to it.	No reaction	$CO_3^{2-}, S^{2-}, SO_3^{2-}, NO_2^-$ absent
2) Salt is taken in a dry test tube and conc. H_2SO_4 is added to it and heated	Reddish brown vapours with pungent smell evolved.	May be Br^-
confirmatory test		
1) Acidify the salt solution with dil. HCl and add 1-2ml of CS_2 and then chlorine water. Shake vigorously and allowed to stand.	CS_2 layer acquires orange colouration.	Br^- confirmed
2) To the Salt Solution few drops of HNO_3 is added followed by silver nitrate solution.	Light yellow precipitate obtained which is partially soluble in NH_4OH solution	Br^- confirmed
3) Heat a small quantity of the Salt with solid MnO_2 and conc. H_2SO_4	Evolution of yellow brown vapours of bromine which turn starch paper yellow	Br^- confirmed

Teacher's Signature : _____

1) Salt is taken in perfectly dry test tube and dilute H_2SO_4 is added to it.

No reaction

CO_3^{2-} , S^{2-} , SO_3^{2-}
 NO_3^- absent

2) Salt is taken in a dry test tube and conc. H_2SO_4 is added to it and

Deep violet vapours with pungent smell evolved

May be I ⁶

confirmatory test

1) Acidify the salt solution with dil. HCl and add 1-2 ml of CS_2 , and then chlorine water, shake vigorously and allowed to stand

CS_2 layer acquires violet colouration

I confirmed

2) To the salt solution few drops of HNO_3 is added followed by silver nitrate solution

Yellow precipitate obtained which is insoluble in NH_4OH solution.

I confirmed

3) Heat a small quantity of the salt with solid MnO_2 , and conc. H_2SO_4 which turn starch paper blue

Evolution of violet vapours of iodine

I confirmed

Result \rightarrow Given salt samples contain the following ions:
 Cl^- , Br^- , I^- , NO_3^- and CH_3COO^-

Teacher's Signature :

EXPERIMENT-3

Aim \rightarrow To analyse the anions present in the given salt qualitatively and systematically.

1) Salt is taken in perfectly dry test tube and dilute H_2SO_4 is added to it.	No reaction	CO_3^{2-} , S^{2-} , SO_3^{2-} , NO_2^- absent
2) Salt is taken in a dry test tube and conc. H_2SO_4 is added to it and heated.	No change	Cl^- , Br^- , I^- , NO_3^- , CH_3COO^- absent
3) Ammonium molybdate test To the aqueous solution of salt few drops of conc HNO_3 is added and solution is boiled. Add ammonium molybdate solution to it	Deep yellow precipitate obtained	PO_4^{3-} obtained.
4) Magnesia mixture test. To the salt solution, magnesia mixture is added and the solution is boiled and allowed to stand. (Solid NH_4Cl is added to $MgCl_2$ solution, boiled, cooled and NH_4OH is added to it)	white precipitate obtained.	PO_4^{3-} obtained

Teacher's Signature : _____

1) Salt is taken in perfectly dry test tube and dilute H_2SO_4 is added to it.	No reaction	$CO_3^{2-}, S^{2-}, SO_3^{2-}, NO_2^-$ absent
2) Salt is taken in a dry test tube and conc. H_2SO_4 is added to it and heated	No change	$Cl^-, Br^-, I^-, NO_3^-, CH_3COO^-$ absent
<u>Confirmatory test for SO_4^{2-}</u>		
3) To the salt solution add dilute HCl followed by few drops of $BaCl_2$ solution	White precipitate obtained which are insoluble in conc. HCl	SO_4^{2-} Confirmed.
4) To the salt solution add few drops of acetic acid and then lead acetate is added.	White precipitate obtained which are insoluble in hot ammonium acetate	SO_4^{2-} confirmed.

Result \Rightarrow Given Salt Samples contains the following ions: PO_4^{3-}
 SO_4^{2-}

Aim \rightarrow To prepare M/10 oxalic acid solution.

Theory \rightarrow Oxalic acid is a primary standard. Its molecular mass is 126. To prepare M/10 oxalic acid solution, 12.6 g of oxalic acid should be dissolved per litre of the solution. To prepare 100 ml of solution, $12.6/10 = 1.26$ g of oxalic acid is dissolved in lesser quantity of water and the solution diluted to exactly 100 ml.

Apparatus \rightarrow chemical balance, watch glass, 100 ml. beaker, 100 ml measuring flask, wash bottle.

procedure \rightarrow *1) Take a watch glass, wash it with distilled water and then dry it

*2) Weigh the clean and dried watch glass accurately and record its weight in the notebook.

*3) weigh 1.26 g of oxalic acid on the watch glass accurately and record this weight in the notebook.

*4) Transfer gently and carefully oxalic acid from the watch glass into a clean and dry measuring flask using a funnel. Wash the watch glass with distilled water

for this purpose should not be more than 25 ml.

- *5) Wash funnel several times with distilled water by using a wash bottle to transfer the sticking particles into the measuring flask. While washing the funnel, add water in small amounts. The volume of distilled water used for this purpose should not be more than 25 ml.
- *6) Finally wash the funnel thoroughly with distilled water with the help of a wash bottle to transfer the solution sticking to the funnel into the measuring flask.
- *7) Swirl the measuring flask till oxalic acid dissolves.
- *8) Add enough distilled water to the measuring flask carefully upto just below the etched mark on it, with the help of wash bottle.
- *9) Add the last few ml. of distilled water dropwise until the lower level of the meniscus just touches the mark on the measuring flask.
- *10) Stopper the measuring flask and shake gently to make the solution uniform throughout. Label it as $M/10$ oxalic acid solution.

HOLIDAY HOMEWORK

CLASS XI

BIOLOGY

- Read thoroughly chapters 1, 2 and 3.
- Write notes and question answers of first three chapters in your notebook.
- Learn Q/Answers of these three chapters.
- Draw the diagrams of following in your notebook –
 - a. Tobacco Mosaic Virus (TMV)
 - b. Bacteriophage
 - c. Bacteria of different shapes
 - d. A filamentous blue- green algae – Nostoc.

(Note: Practical File Work will be given later on through WhatsApp)

CLASS Xi

(computer science /informatics practices)

HOLIDAYS HOMEWORK (2020-21)

- **WRITE A PROJECT ON THE TOPIC ARTIFICIAL INTELLIGENT (A.I.)**
- What is Artificial Intelligence?
- Purpose of A.I.
- Where do we use A.I.?
- Applications of A.I.
- Need of an A.I.
- Advantages and Disadvantages of A.I. in Healthcare.
- Advantages and Disadvantages of A.I. in Transport.

- **Make a poster for Job vacancy of the year 2050.**
- **Revise and Complete Ch-1 in your notebook.**

HOLIDAY H.W. (2020 – 21)

MATHEMATICS (041)

CLASS – XI-C/E

1. The following activities (1, 2, & 3) to be done in MATHS practical file. FIGURE should be drawn on the left side plain page.
2. Do assignments based on **Sets & Trigonometry**
 - Complete your notebook. (10 MARKS)
 - Complete MATHS practical file. (10 MARKS)

ACTIVITY - 1

OBJECTIVE

To represent set theoretic operations using Venn diagrams.

MATERIAL REQUIRED

Hardboard, white thick sheets of paper, pencils, colours, scissors, adhesive.

METHOD OF CONSTRUCTION

1. Cut rectangular strips from a sheet of paper and paste them on a hardboard. Write the symbol U in the left/right top corner of each rectangle.
2. Draw circles A and B inside each of the rectangular strips and shade/colour different portions as shown in Fig. 3.1 to Fig. 3.10.

DEMONSTRATION

1. U denotes the universal set represented by the rectangle.
2. Circles A and B represent the subsets of the universal set U as shown in the figures 3.1 to 3.10.
3. A' denote the complement of the set A , and B' denote the complement of the set B as shown in the Fig. 3.3 and Fig. 3.4.
4. Coloured portion in Fig. 3.1. represents $A \cup B$.

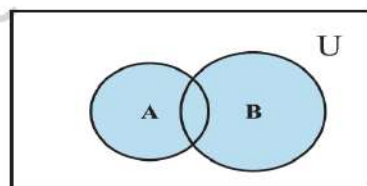


Fig. 3.1



5. Coloured portion in Fig. 3.2. represents $A \cap B$.

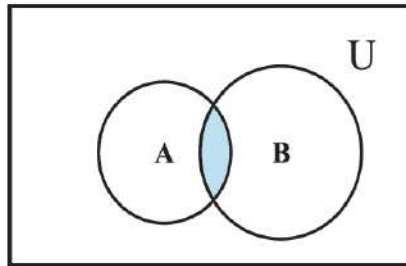


Fig. 3.2

6. Coloured portion in Fig. 3.3 represents A'

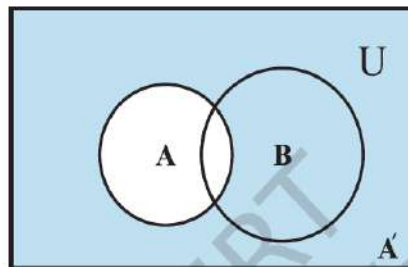


Fig. 3.3

7. Coloured portion in Fig. 3.4 represents B'

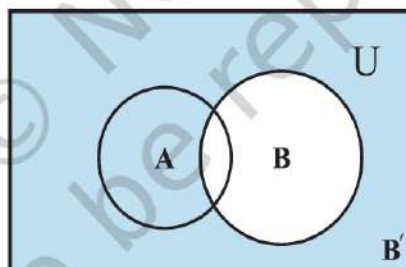


Fig. 3.4

8. Coloured portion in Fig. 3.5 represents $(A \cap B)'$

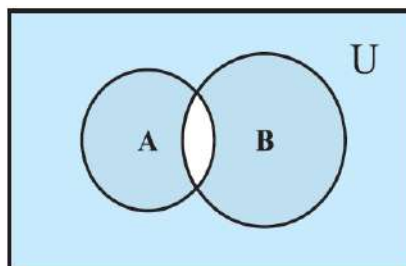


Fig. 3.5

9. Coloured portion in Fig. 3.6 represents $(A \cup B)'$

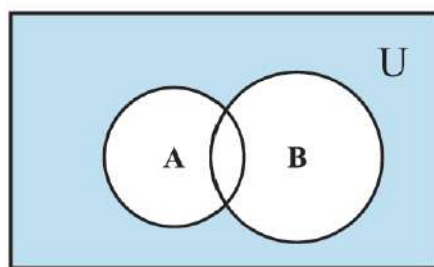


Fig. 3.6

10. Coloured portion in Fig. 3.7 represents $A' \cap B$ which is same as $B - A$.

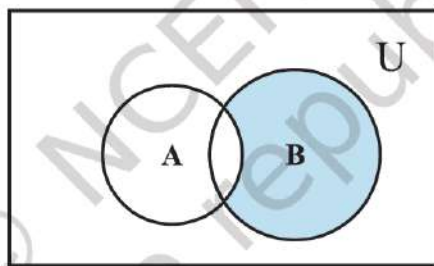


Fig. 3.7

11. Coloured portion in Fig. 3.8 represents $A' \cup B$.

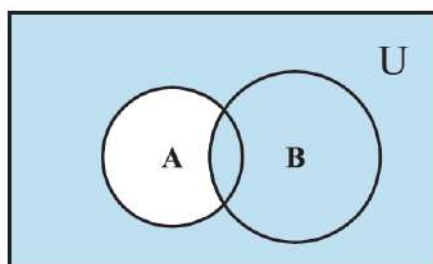


Fig. 3.8

12. Fig. 3.9 shows $A \cap B = \phi$

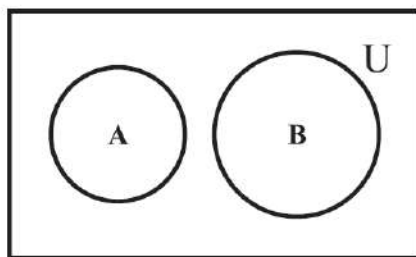


Fig. 3.9

13. Fig. 3.10 shows $A \subset B$

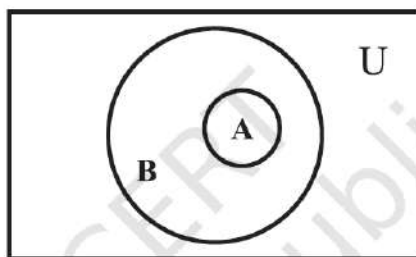


Fig. 3.10

OBSERVATION

1. Coloured portion in Fig. 3.1, represents _____
2. Coloured portion in Fig. 3.2, represents _____
3. Coloured portion in Fig. 3.3, represents _____
4. Coloured portion in Fig. 3.4, represents _____
5. Coloured portion in Fig. 3.5, represents _____
6. Coloured portion in Fig. 3.6, represents _____
7. Coloured portion in Fig. 3.7, represents _____
8. Coloured portion in Fig. 3.8, represents _____
9. Fig. 3.9, shows that $(A \cap B) =$ _____
10. Fig. 3.10, represents A _____ B.

APPLICATION

Set theoretic representation of Venn diagrams are used in Logic and Mathematics.

ACTIVITY - 2



OBJECTIVE

To verify distributive law for three given non-empty sets A, B and C, that is, $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$

MATERIAL REQUIRED

Hardboard, white thick sheets of paper, pencil, colours, scissors, adhesive.

METHOD OF CONSTRUCTION

1. Cut five rectangular strips from a sheet of paper and paste them on the hardboard in such a way that three of the rectangles are in horizontal line and two of the remaining rectangles are also placed horizontally in a line just below the above three rectangles. Write the symbol U in the left/right top corner of each rectangle as shown in Fig. 4.1, Fig. 4.2, Fig. 4.3, Fig. 4.4 and Fig. 4.5.
2. Draw three circles and mark them as A, B and C in each of the five rectangles as shown in the figures.
3. Colour/shade the portions as shown in the figures.

DEMONSTRATION

1. U denotes the universal set represented by the rectangle in each figure.
2. Circles A, B and C represent the subsets of the universal set U.

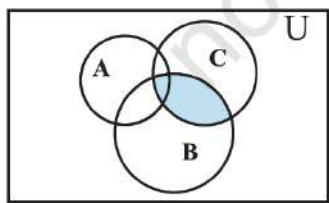


Fig. 4.1 $B \cap C$

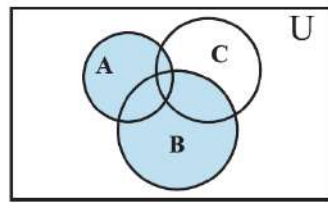


Fig. 4.2 $A \cap B$

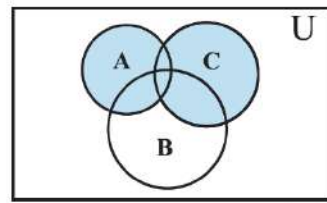


Fig. 4.3 $A \cap C$

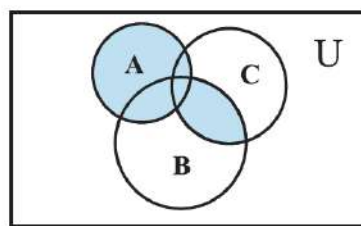


Fig. 4.4 $A \cup (B \cap C)$

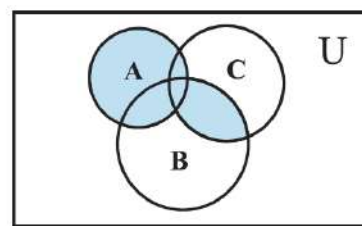


Fig. 4.5 $(A \cap B) \cap (A \cap C)$

3. In Fig. 4.1, coloured/shaded portion represents $B \cap C$, coloured portions in Fig. 4.2 represents $A \cup B$, Fig. 4.3 represents $A \cup C$, Fig. 4.4 represents $A \cup (B \cap C)$ and coloured portion in Fig. 4.5 represents $(A \cup B) \cap (A \cup C)$.

OBSERVATION

1. Coloured portion in Fig. 4.1 represents _____.
2. Coloured portion in Fig. 4.2, represents _____.
3. Coloured portion in Fig. 4.3, represents _____.
4. Coloured portion in Fig. 4.4, represents _____.
5. Coloured portion in Fig. 4.5, represents _____.
6. The common coloured portions in Fig. 4.4 and Fig. 4.5 are _____.
7. $A \cup (B \cap C) =$ _____.

Thus, the distributive law is verified.

APPLICATION

Distributivity property of set operations is used in the simplification of problems involving set operations.

NOTE

In the same way, the other distributive law

$A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$ can also be verified.

ACTIVITY - 3

Topic: Trigonometric functions.

Graphs of trigonometric transformations.

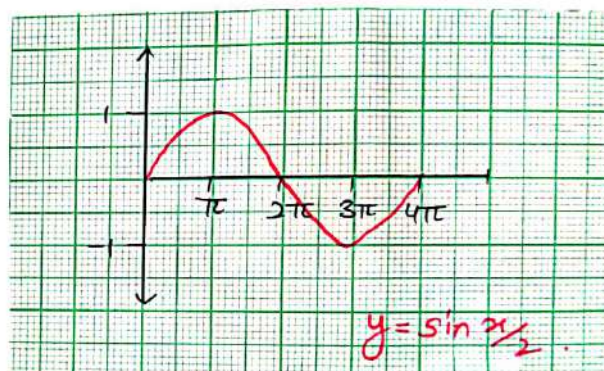
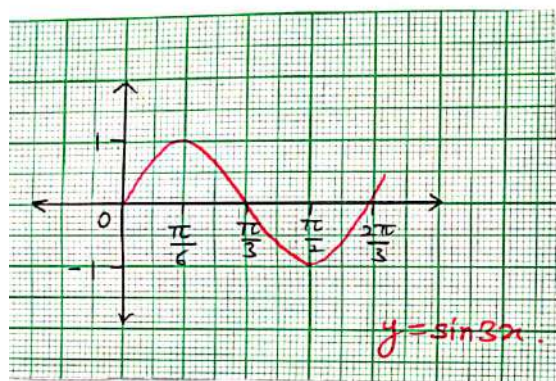
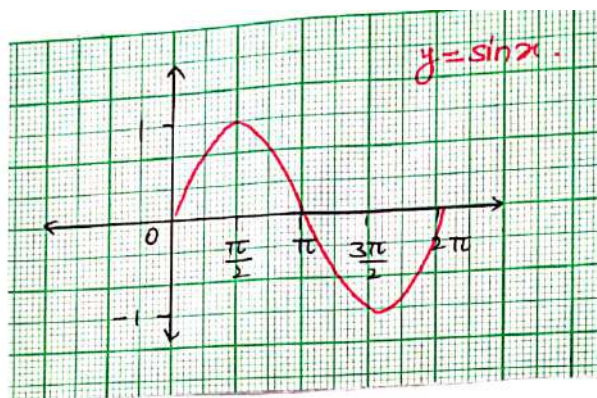
Starting with the graph of $y = \sin x$, state the transformations which can be used to sketch each of the following curves.

(i) $y = \sin 3x$. Period = $2\pi/3$.

(ii) $y = \sin x$ = $\frac{2\pi}{1/2}$ = 4π

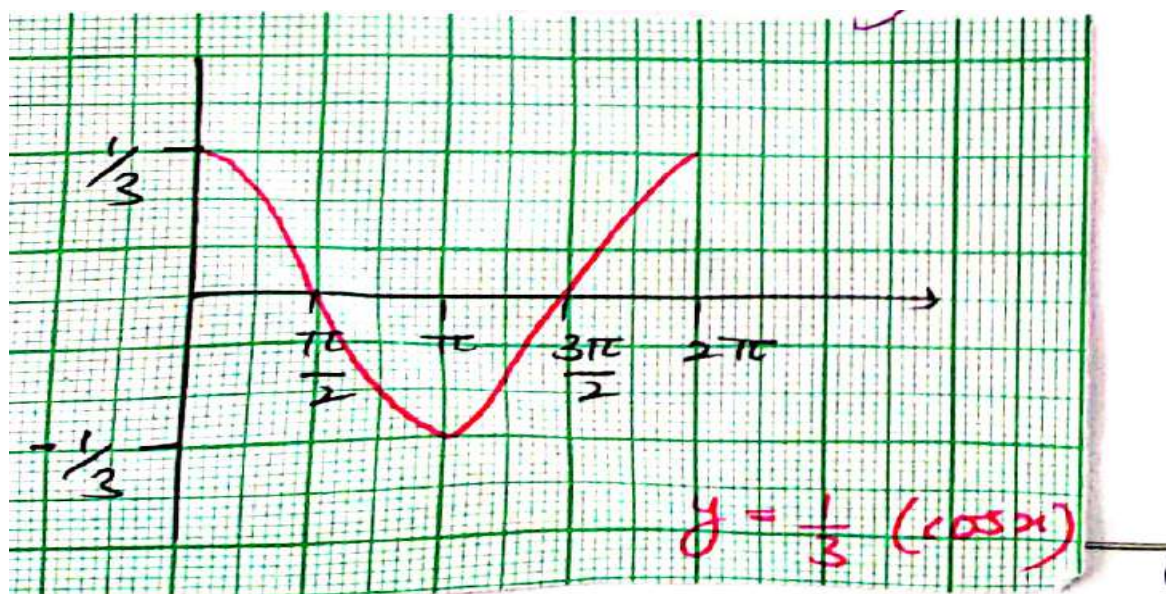
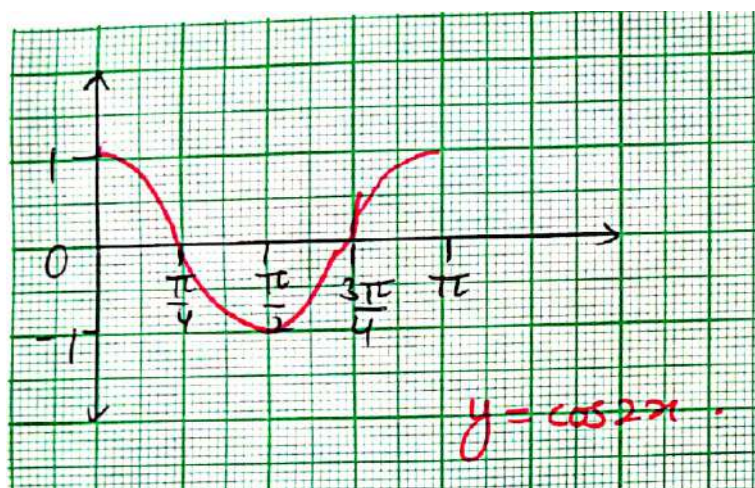
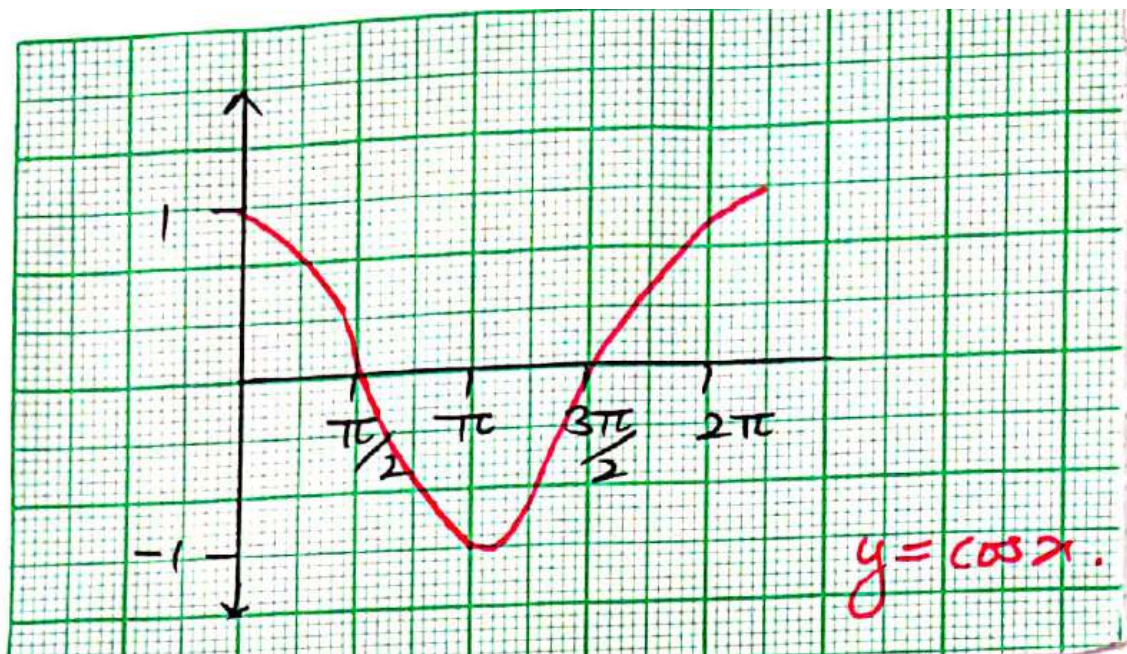


(iii) $y = \frac{1}{2} \sin x$, period = 2π



Starting with the graph of $y = \cos x$, state the transformation which can be used to sketch each of the following curves.

(i) $y = \cos 2x$ (ii) $y = \frac{1}{3} \cos x$



MATHS ASSIGNMENTS

SETS

Question : 1

Write the following sets in the roster form.

- (i) $A = \{x \mid x \text{ is a positive integer less than } 10 \text{ and } 2^x - 1 \text{ is an odd number}\}$
- (ii) $C = \{x : x^2 + 7x - 8 = 0, x \in \mathbb{R}\}$

Question 2

Use the properties of sets to prove that for all the sets A and B

$$A - (A \cap B) = A - B$$

Question 3

For all sets A, B and C Is $(A - B) \cap (C - B) = (A \cap C) - B$? Justify your answer.

Question 4

Let A, B and C be sets. Then show that $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$

Question 5

From 50 students taking examinations in Mathematics, Physics and Chemistry, each of the student has passed in at least one of the subject, 37 passed Mathematics, 24 Physics and 43 Chemistry. At most 19 passed Mathematics and Physics, at most 29 Mathematics and Chemistry and at most 20 Physics and Chemistry. What is the largest possible number that could have passed all three examination?

Question 6

Two finite sets have m and n elements respectively. The total number of subsets of first set is 56 more than the total number of subsets of the second set. The values of m and n respectively are.

- (A) 7, 6 (B) 5, 1 (C) 6, 3 (D) 8, 7

Question 7

The set $(A \cup B \cup C) \cap (A \cap B' \cap C')' \cap C'$ is equal to

- (A) $B \cap C'$ (B) $A \cap C$ (C) $B \cup C'$ (D) $A \cap C'$

Question 8

If A and B are two finite sets, then $n(A) + n(B)$ is equal to _____

QUESTION 9

Let A, B and C be sets. Then show that $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$

QUESTION 10.

Out of 100 students; 15 passed in English, 12 passed in Mathematics, 8 in Science, 6 in English and Mathematics, 7 in Mathematics and Science; 4 in English and Science; 4 in all the three. Find how many passed (i) in English and Mathematics but not in Science (ii) in Mathematics and Science but not in English (iii) in Mathematics only (iv) in more than one subject only

QUESTION 11.

In a class of 60 students, 25 students play cricket and 20 students play tennis, and 10 students play both the games. Find the number of students who play neither?

QUESTION 12.

In a survey of 200 students of a school, it was found that 120 study Mathematics, 90 study Physics and 70 study Chemistry, 40 study Mathematics and Physics, 30 study Physics and Chemistry, 50 study Chemistry and Mathematics and 20 none of these subjects. Find the number of students who study all the three subjects.

QUESTION 13.

In a town of 10,000 families it was found that 40% families buy newspaper A, 20% families buy newspaper B, 10% families buy newspaper C, 5% families buy A and B, 3% buy B and C and 4% buy A and C. If 2% families buy all the three newspapers. Find

- (a) The number of families which buy newspaper A only.
- (b) The number of families which buy none of A, B and C

QUESTION 14.

In a group of 50 students, the number of students studying French, English, Sanskrit were found to be as follows: French = 17, English = 13, Sanskrit = 15 French and English = 09, English and Sanskrit = 4 French and Sanskrit = 5, English, French and Sanskrit = 3. Find the number of students who study

- | | |
|---------------------------|---|
| (i) French only | (v) French and Sanskrit but not English |
| (ii) English only | (vi) French and English but not Sanskrit |
| (iii) Sanskrit only | (vii) at least one of the three languages |
| (iv) English and Sanskrit | (viii) none of the three languages but not French |

QUESTION 15.

Two finite sets have m and n elements. The number of subsets of the first set is 112 more than that of the second set. The values of m and n are, respectively,

- (A) 4, 7 (B) 7, 4 (C) 4, 4 (D) 7, 7.

FILL IN THE BLANKS IN EACH OF THE EXERCISES FROM 16 TO 23 :

16. The set $\{x \in \mathbb{R} : 1 \leq x < 2\}$ can be written as _____.
17. When $A =$ _____, then number of elements in $P(A)$ is _____.
18. If A and B are finite sets such that $A \subset B$, then $n(A \cup B) =$ _____.
19. If A and B are any two sets, then $A - B$ is equal to _____.
20. Power set of the set $A = \{1, 2\}$ is _____.
21. Given the sets $A = \{1, 3, 5\}$, $B = \{2, 4, 6\}$ and $C = \{0, 2, 4, 6, 8\}$. Then the

universal set of all the three sets A, B and C can be _____.

22. If $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$, $A = \{1, 2, 3, 5\}$, $B = \{2, 4, 6, 7\}$ and $C = \{2, 3, 4, 8\}$.
Then (i) $(B \cup C)'$ is _____. (ii) $(C - A)'$ is _____.

23. For all sets A and B, $A - (A \cap B)$ is equal to _____.

STATE TRUE OR FALSE (24 to 27) FOR THE FOLLOWING
STATEMENTS

24. If A is any set, then $A \subset A$

25. Given that $M = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$ and if $B = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$,
then B is not a subset of M

26. The sets $\{1, 2, 3, 4\}$ and $\{3, 4, 5, 6\}$ are equal.

27. Given $A = \{0, 1, 2\}$, $B = \{x \in \mathbb{R} \mid 0 \leq x \leq 2\}$. Then $A = B$.

TRIGONOMETRY

1. A circular wire of radius 3 cm is cut and bent so as to lie along the circumference of a hoop whose radius is 48 cm. Find the angle in degrees which is subtended at the centre of hoop.
2. Find the value of $\tan 9^\circ - \tan 27^\circ - \tan 63^\circ + \tan 81^\circ$
3. If $\cos a + \cos b = 0 = \sin a + \sin b$, then prove that $\cos 2a + \cos 2b = -2 \cos (a + b)$.
4. Solve the equation $\sin x + \sin 3x + \sin 5x = 0$.
5. Show that $2 \sin^2 b + 4 \cos (a + b) \sin a \sin b + \cos 2(a + b) = \cos 2a$
6. If angle THETA is divided into two parts such that the tangent of one part is K times the tangent of other, and A is their difference, then show that
$$\sin \text{THETA} = \frac{K+1}{K-1} \sin A$$
7. The value of $\sin 20^\circ \sin 40^\circ \sin 60^\circ \sin 80^\circ$ is
(A) $-3/16$ (B) $5/16$ (C) $-3/16$ (D) $1/16$
8. If $3 \tan (x - 15^\circ) = \tan (x + 15^\circ)$, $0^\circ < x < 90^\circ$, then $x =$ _____
9. If A lies in first quadrant and $\cos A = 8/17$
then find the value of $\cos (30^\circ + A) + \cos (45^\circ - A) + \cos (120^\circ - A)$.
10. The value of $\tan 75^\circ - \cot 75^\circ$ is equal to _____.
11. The minimum value of $3 \cos x + 4 \sin x + 8$ is _____.
12. If $\sin x + \cos x = 1$, then the value of $\sin 2x$ is equal to (a) 1 (b) $1/2$ (c) 0 (d) -1 .
13. Prove that :-
$$\sin \frac{\pi}{18} \cdot \sin \frac{5\pi}{18} \cdot \sin \frac{7\pi}{18} = 1/8$$
14. $\sin 10^\circ$ is greater than $\cos 10^\circ$. (T/F)



15. If $\tan x + \tan 2x + \sqrt{3} \tan x \tan 2x = \sqrt{3}$ then find the value of x .

ALL THE BEST AND TAKE CARE

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HOLIDAY HOMEWORK

CLASS - 11

SUBJECT - PHYSICAL EDUCATION

- Read the following chapters.
- Write and learn the question answers of these chapters.
- Chapters are as follows :

Unit - 1 Changing trends & Career in Physical Education

Unit - 2 Olympic value Education

Unit - 3 Physical Fitness, Wellness & Lifestyle

BHRIGURAJ SHARMA