ST. MARY'S PUBLIC SCHOOL

NEB SARAI, NEW DELHI

Holiday Homework Class XI

ENGLISH CORE

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
    a. L. 1 The Portrait of a Lady by Khushwant Singh
    b. L.2 We are not afraid to die … If we all are together by Gordon Cook and Alan East
    c. Poem. A Photograph by Shirley Toulson.
5. Snapshot – Read and revise the following chapters
    a. L.1 The Summer of the beautiful White Horse by William Saroyan
    b. L. 2 The Address by Margo Minco
6. Read newspaper daily to aware yourself about the happenings around the world.

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

P.T.O

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 ∪ B.

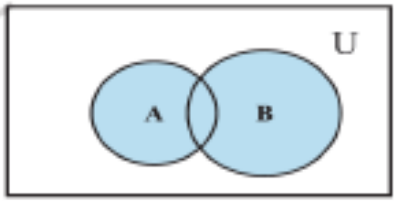


Fig. 3.1

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

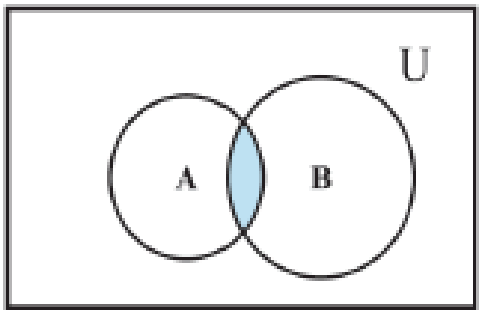


Fig. 3.2

6. Coloured portion in Fig. 3.3 represents A'

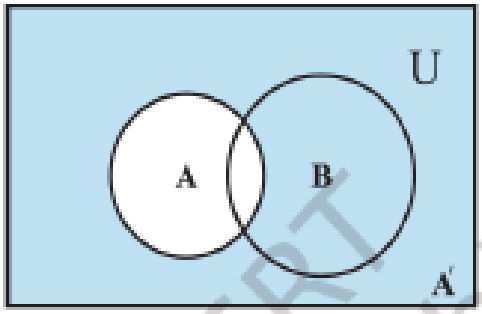


Fig. 3.3

7. Coloured portion in Fig. 3.4 represents B'

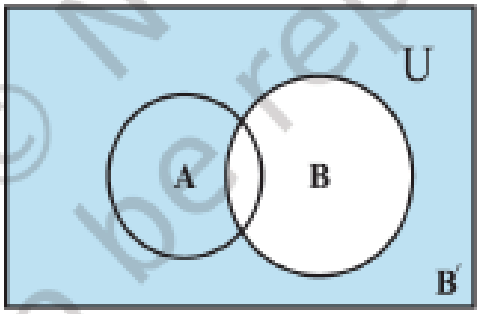


Fig. 3.4

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

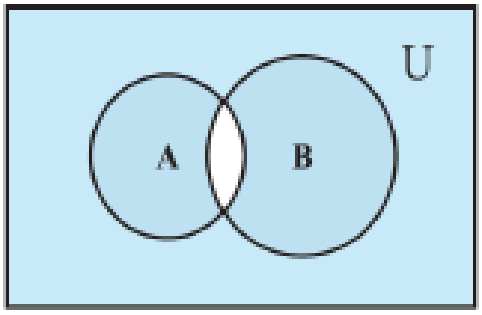


Fig. 3.5

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

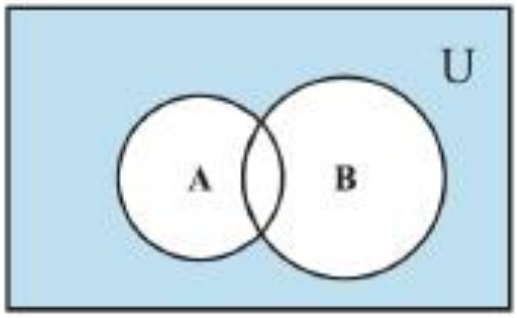


Fig. 3.6

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

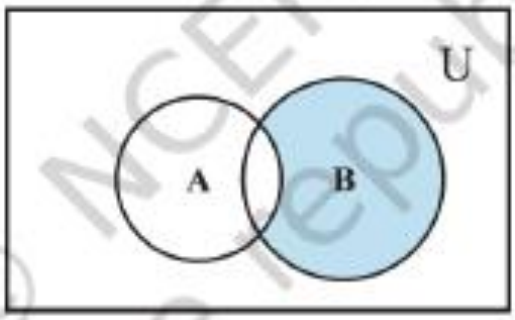


Fig. 3.7

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

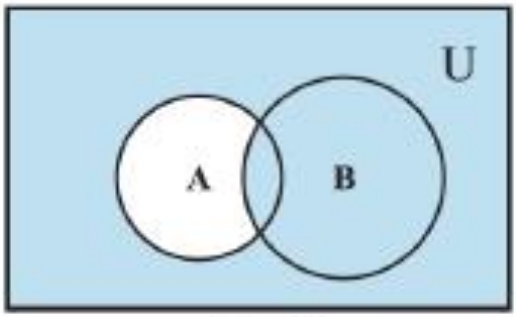


Fig. 3.8

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

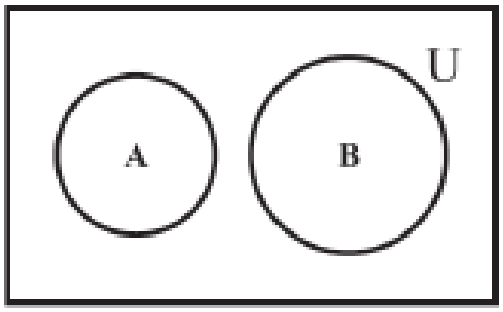


Fig. 3.9

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

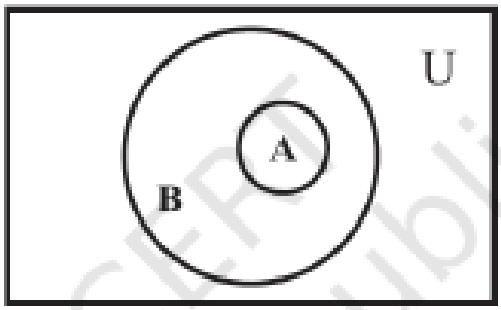


Fig. 3.10

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.

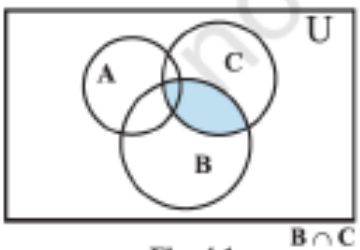


Fig. 4.1

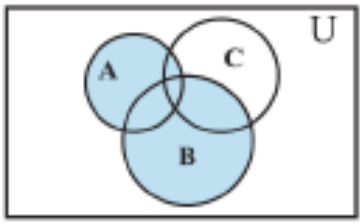


Fig. 4.2

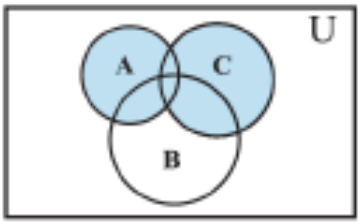


Fig. 4.3

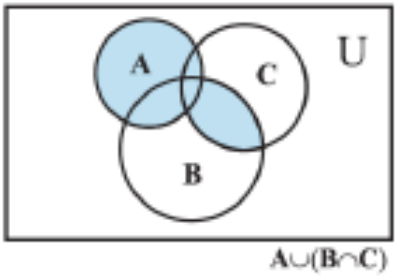


Fig. 4.4

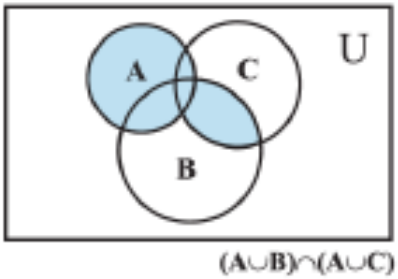


Fig. 4.5

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

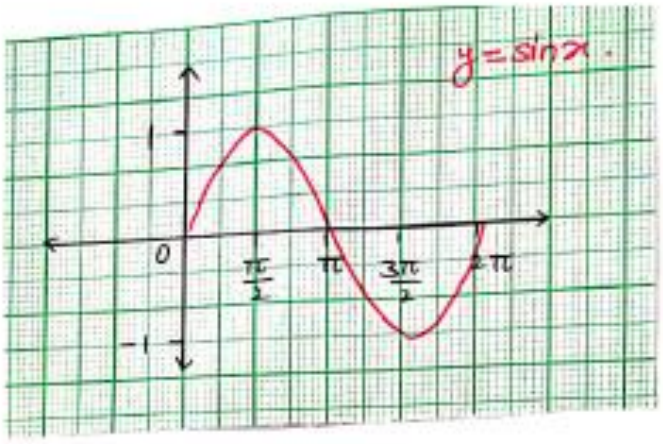
Topic : Trigonometric functions.
Graphs of trigonometric transformations.

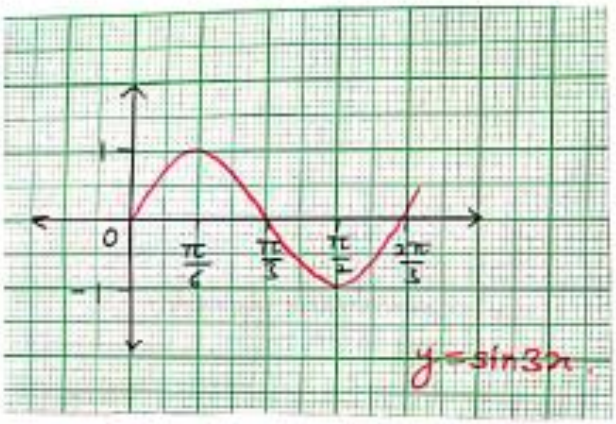
Starting with the graph of $y = \sin x$, state the transformations which can be used to sketch each of the following curves.

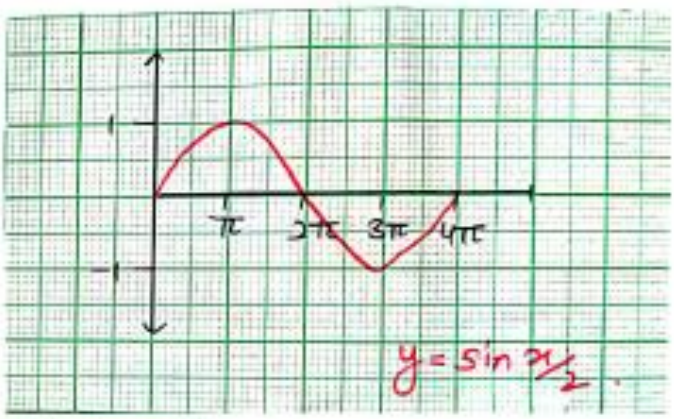
(i) $y = \sin 3x$. Period $= 2\pi/3$.

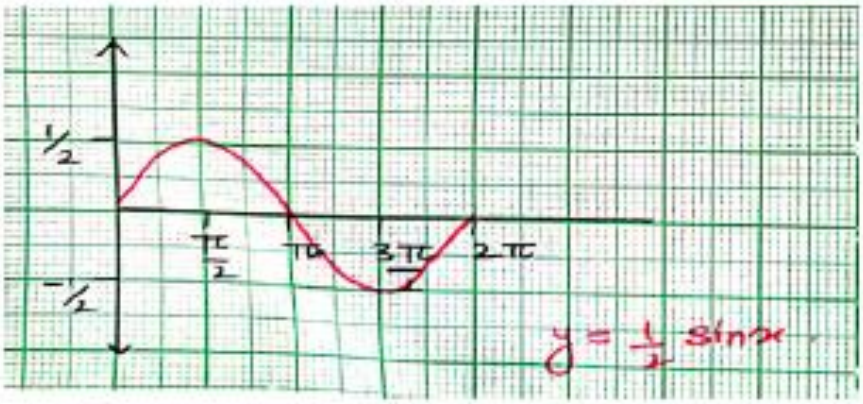
(ii) $y = \sin x$ $= \frac{2\pi}{1/2} = 4\pi$

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



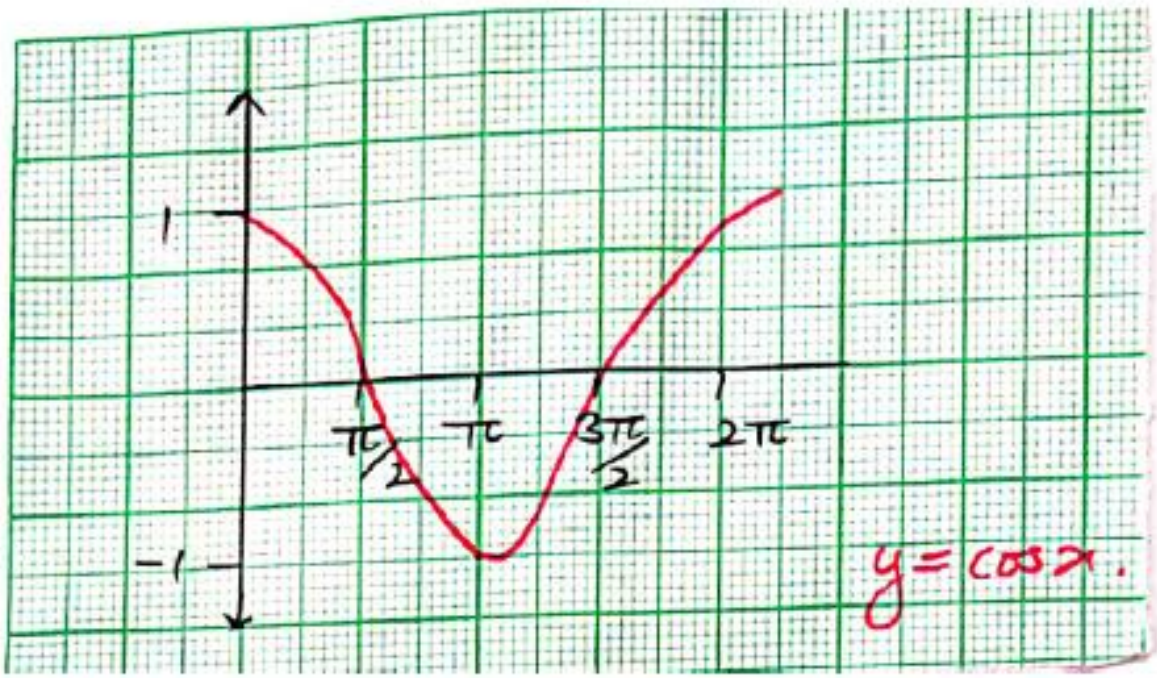


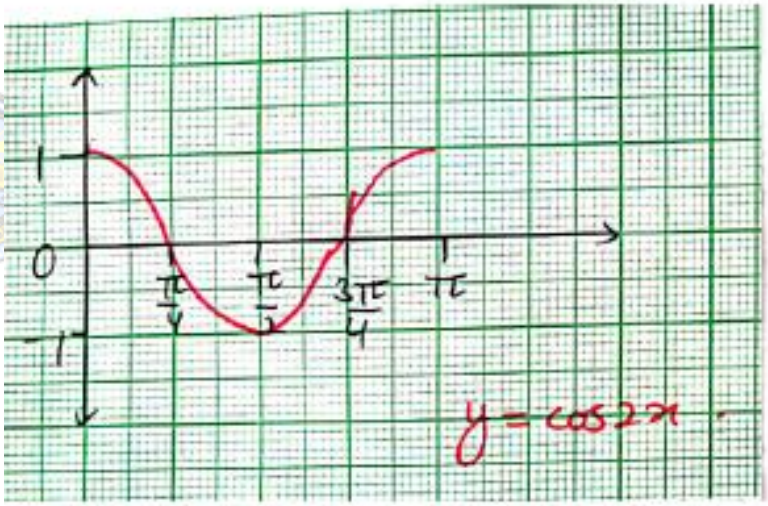




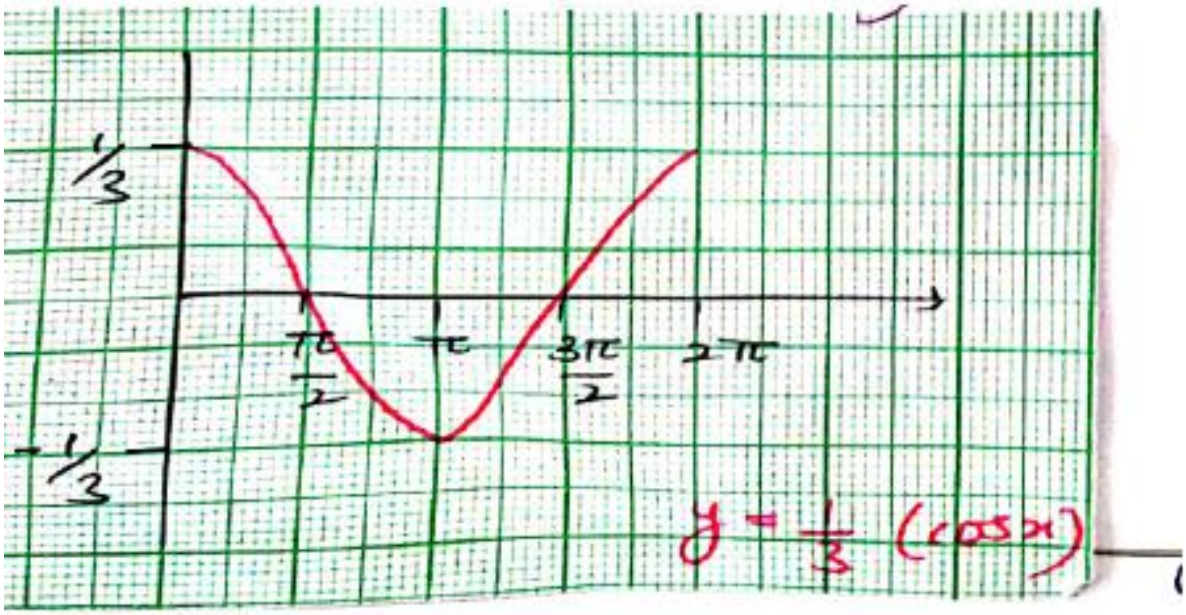
Starting with the graph of $y = \cos x$, state the transformation which can be used to sketch each of the following curves.

(i) $y = \cos 2x$ (ii) $y = 1/3 \cos x$


1
-1
π/2
π
3π/2
2π
y = cos x.


1
0
-1
π/4
π/2
3π/4
π
y = cos 2x.

$y = \cos 2x.$


1/3
-1/3
π/2
π
3π/2
2π
y = 1/3 (cos x)

MATHS ASSIGNMENTS

SETS

Question : 1

Write the following sets in the roaster form.

(i) $A = \{x : x$ is a positive integer less than 10 and $2^x - 1$ is an odd number$\}$

(ii) $C = \{x : x^2 + 7x - 8 = 0, x \varepsilon R\}$

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
(ii) English only
(iii) Sanskrit only
(iv) English and Sanskrit
(v) French and Sanskrit but not English
(vi) French and English but not Sanskrit
(vii) at least one of the three languages
(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 $\{x \in R : 1 \leq x < 2\}$ 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 = $\{x \varepsilon R \mid 0 \leq x \leq 2\}$. 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 $\tan 9° - \tan 27° - \tan 63° + \tan 81°$
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 $\sin 20° \sin 40° \sin 60° \sin 80°$ is
   (A) - 3 / 16 (B) 5 / 16 (C) -3 / 16 (D) 1 / 16

8. If $3 \tan (x - 15°) = \tan (x + 15°)$, $0° < x < 90°$, then x = _____
9. If A lies in first quadrant and $\cos A = 8 / 17$
   then find the value of $\cos (30° + A) + \cos (45° - A) + \cos (120° - A)$.

10. The value of $\tan 75° - \cot 75°$ 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. : -
    $\sin \text{pie}/18 . \sin 5\text{pie}/18 . \sin 7\text{pie}/18 = 1/8$
14. Sin 10° is greater than cos 10°. (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

BY: A.K.Sharma [9818448039]

ACCOUNTANCY

Chapter: Introduction to Accounting

Q1) What is the difference between Double Entry System and Single-Entry System?

Q2) Why is resignation by a Finance Manager not recorded in the books of accounts?

Q3) Explain any one limitation of Accounting with an example.

Q4) What is the main objective of systematically recording the information about financial soundness and profitability.

Q5) Name the financial statements used to summarise the accounting information.

Q6) State the nature of information required by the Investors.

Q7) State the end products of Financial Accounting.

Q8) Which of the following is not a business transaction?

a) Purchase of goods for resale amounting `50,000.
b) Paid salaries & wages amounting`10,000.
c) Paid rent for office premises `5,000.
d) Purchased a LCD for personal use.

Q9) Which of the following transactions will not be recorded in the books of accounts?

a) Paid salaries & wages.
b) Purchased a machinery for the production of pens.
c) Purchased a machinery for resale.

Q10) Differentiate between Book-keeping and Accounting on the basis of knowledge required.

Q11) A company suffered huge losses due to the strike by the employees of the factory. Will this be recorded in the books of accounts? Give reason in support of your answer.

Q12) Which qualitative characteristic of accounting information requires the use of common unit & common format of reporting?

Q 13) State any two users who may be interested in knowing the information about financial soundness and profitability.

Q 14) List any two sub fields of accounting.

Q 15) Differentiate between Accounting and Accountancy.

Chapter: Basic Accounting Terms

Q1) Godrej Ltd. imported from Germany one machinery for sale in India & another machinery for production purpose. Will you treat them as goods or as fixed assets?

Q2) Mr. Rahul dealing in electronic goods sold 20 TV sets costing `30,000 each at `40,000 each. Out of this, `5, 00,000 were received in cash & the balance is not yet received. State the amount of revenue

.

Q3) Giving examples, explain each of the following terms:

a) Capital Expenditure
b) Current Liability
c) Purchases
d) Sales
e) Debtor
f) Creditor
g) Drawings
h) Discount received
i) Stock

Q4) Give any three differences between each of the following:

a) Non-current Liability and current Liability
b) Fixed Asset and Current Asset
c) Revenue and Income
d) Loss and Expense
e) Gain and Profit

Chapter: Theory Base of Accounting, Accounting Standards & IFRS

Q1) Why Closing Stock is valued at cost price or realisable value whichever is lower?

Q2) What is meant by GAAPs?

Q3) "The basic yardstick of measurement in accounting is money." Identify and explain the Accounting Assumption.

Q4) What do you mean by Accounting Standards? Explain its nature.

Q5) "Revenue earned and cost of earning that revenue should be properly identified for a period." Explain this statement.

Q6) Why is it necessary for accountants to assume that a business entity will remain a going concern?

Q7) Which Accounting Principle assumes that 'Capital is a liability for the business'?

Q8) Why do accounting principles emphasize the use of historical cost as a basis for measuring assets?

Q9) Name and explain the principles of Accounting in the following cases:

a) Value of an asset is not charged according to change in its market value.

b) Calibre or quality of management team is not directly disclosed in the Balance Sheet.

Q10) A customer of X Ltd. Has discontinued his business. He used to purchase 30% of the total goods produced by X Ltd. Is it a relevant information in your opinion & should be disclosed by X Ltd.

BUSINESS STUDIES

PROJECT - AUXILLARIES TO TRADE / AIDS TO TRADE

Students you have to choose any one of the following:

1. Transportation and communication
2. Banking
3. Warehousing
4. Insurance
5. Advertising

For example: Insurance and gathering information on following aspects:

1. History of insurance Lloyd's contribution.
2. Development of regulatory mechanism.
3. Insurance companies of India.
4. Principles of insurance.
5. Types of insurance. Importance of insurance to the businessmen.
6. Benefits of crop, orchards, animal, and poultry insurance to the farmers.
7. Terminologies used (premium, face value, market value, surrender value) and their meanings.
8. Anecdotes and interesting cases of insurance. Reference of films depicting people committing fraudulent acts with insurance companies.
9. Careers in insurance.

Presentation and submission of project report:

Following essentials are required to be fulfilled for its preparation and submission.

1. The total project will be in a file format, consisting of the recordings of the value of shares and the graphs.
2. The project will be handwritten.
3. The project will be presented in a neat folder.
4. The project report will be developed in the following Sequence:
    (a) Cover page should project the title, student information, school and year.
    (b) List of contents.
    (c) Acknowledgements and preface (acknowledging the institution, the newspapers read, T.V. channels viewed, places visited and persons who have helped.)
    (d) Introduction.
    (e) Topic with suitable heading.
    (f) Planning and activities done during the project, if any.
    (g) Observation and findings while conducting the project.
    (h) Conclusion (summarized suggestions or findings, future scope of study).

ECONOMICS

1. Make the project on any topic from Micro Economics or statistics for economics consisting 25 to 30 pages (no designer sheets)
2. Learn chapter 1 from Micro Economics & chapters 1 & 2 from statistics for Economics.
   Prepare MCQs, fill ups, true false, reasoning from all 3 chapters of both the books. For the selection of topic you can contact me. Thanks.

Poonam Sharma

PHYSICAL EDUCATION

1. Read the following chapters.
2. 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

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.**