ARMY PUBLIC SCHOOL, BATHINDA MIL STN.
CLASS – XI (SUMMER VACATION HOMEWORK 2024-25)

1) ENGLISH

1) **Revise all the topics covered till date, including the given Question Bank and complete the notebooks (Literature and Writing Skills).**
   a. **Book - Hornbill Ch-1 & Poem -1**
   b. **Book - Snapshots Ch- 1, 2 & 3**
2) **Write an Article for School Magazine. Make sure it is not copied from any source.**
   Solve the given PDF of 5 Unseen Comprehension Passages in the Writing Skills Notebook.

UNSEEN COMPREHENSION PASSAGES

Read the following passages carefully and answer the question that follow :
Passage: 1

I N D I A N C L A S S I C A L DA N C E S

What is a classical dance? A dance which is created or choreographed and performed according to the tenets of the Natya Shastra is called a classical dance.

The two broad aspects of classical dancing are the tandava and the lasya. Power and force are typical of the tandava; grace and delicacy, of the lasya. Tandava is associated with Shiva, and lasya with Parvati. Dance which is pure movement is called nritta, and dance which is interpretative in nature is called nritya.

A dancer in the classical tradition has to have years of training before he or she can begin to perform on the stage.

What are the main schools of classical dancing?

The four main schools of classical dancing in India are: Bharata Natyam, Kathakali, Manipuri, Kathak

Bharata Natyam is the oldest and most popular dance-form of India. Earlier, it was known by various names. Some called it Bharatam, some Natyam, some Desi Attam and some Sadir. The districts of Tanjore and Kanchipuram of Tamil Nadu were the focal points in the development of Bharata Natyam. It was danced as a solo performance by devadasis (temple dancers) on all auspicious occasions. Later, kings and rich people lent their patronage to it and it started shedding its purely sacred character.

The dancer is directed by the natuvanar, who is a musician and, invariably, a teacher. Another musician plays the cymbals. The music for Bharata Natyam is the Carnatic School of music. The mridangam (a drum), played on both sides with the hands, provides the rhythm. The home of Kathakali is Kerala. Kathakali literally means 'story-play'. It combines music, dance, poetry, drama and mime. Its present form has evolved out of older forms such as Ramanattam and Krishnanattam.

Kathakali dance-dramas last from dusk to dawn. The artistes use elaborate costumes; masklike make-up and towering head-dresses. The dancers are all males - female roles are usually played by boys. There is no stage - a few mats are spread on the ground for the audience to sit on. The only 'stage-lighting' is a brass lamp fed with coconut oil. .

Two singers provide the vocal music. The chenda, a large drum, which is beaten on one side with two slender curved sticks, is an integral part of the Kathakali performance. A metal gong, a pair of cymbals and another drum complete the orchestra. Besides providing the beat, they are also the means by which all the sound-effects are created.

Manipur, in the north-east is the home of Manipuri. It has evolved out of the folk dances of the land, which are religious in nature. Lai Haroba is the oldest dance-drama of Manipur and is based on folk-lore and mythology. But Ras Leela is the most popular one. It tells of the legendary love of Radha and Krishna. In the Manipuri style of dancing, the accent is on grace and softness. The women's costumes are extremely picturesque.

Besides the singers, the khol, the manjira and the flute also accompany the dancers. Kathak has its home in north India. 'Kathak' means 'story-teller'. In ancient times, the storyteller used gestures and movements

while narrating the great epics. In course of time it became an elaborate art, rich in beautiful movements and facial expressions.

Later, under Persian influence, the original dance form underwent many changes, gradually losing its religious and moral character. It became a court dance. Both men and women danced. With the passing of years, the Kathak performance was reduced to being an evening's entertainment, and the girls, who danced, were no more than pretty entertainers. Kathak, however, was revived under the patronage of the rulers of Lucknow and Jaipur, and this gave rise to two styles known as the Lucknow gharana and the Jaipur gharana. Gharana means 'house' or 'school'.

In Kathak, the accent is on footwork. A dancer wears anklets with several rows of bells and skillfully regulates their sound, sometimes sounding just one bell out of the many on his feet. The singer who accompanies the Kathak dancer not only sings, but reproduces the drum syllables also. The sarangi, a string instrument, provides the music at a Kathak performance. Swarn Khandpur.

Q.1. What is the Natya Shastra?

Q.2. Choose the appropriate meaning of the underlined word. The four main schools of classical dancing in India?

Q.3. When did Bharata Naatyam start shedding its purely sacred character?

Q.4. In which drama form the dances are all males?

a) Bharat Natyam b. Manipuri
b) Kathak
c) Kathakali

Q.5. Which dance form has a origin in folk dance?

a) Ras Leela
b) Lai Haroba
c) Manipuri
d) Kathak

Q.6. In Kathak, the accent is ----------

a) On the basis of dancer‟s anklets
b) On sound created by bells
c) On the regulation of sound
d) On footwork

Passage 2:

Too many parents these days can‟t say no. As a result, they find themselves raising „children‟ who respond greedily to the advertisements aimed right at them. Even getting what they want doesn‟t satisfy some kids; they only want more. Now, a growing number of psychologists, educators and parents think it‟s time to stop the madness and start teaching kids about what‟s really important : values like hard work, contentment, honesty and compassion. The struggle to set limits has never been tougher—and the stakes have never been higher. One recent study of adults who were overindulged as children, paints a discouraging picture of their future : when given too much too soon, they grow up to be adults who have difficulty coping with life‟s disappointments. They also have a distorted sense of entitlement that gets in the way of success in the workplace and in relationships.

Psychologists say that parents who overindulge their kids, set them up to be more vulnerable to future anxiety and depression. Today‟s parents themselves, raised on values of thrift and self sacrifice, grew up in a culture where „no‟ was a household word. Today‟s kids want much more, partly because there is so much more to want. The oldest members of this generation were born in the late 1980s, just as PCs and video games were making their assault‟ on the family room. They think of MP3 players and flat screen TV as essential utilities, and they have developed strategies to get them. One survey of teenagers found that when they crave for something new, most expect to ask nine times before their parents give in. By

every measure, parents are shelling out record amounts. In the heat of this buying blitz, even parents who desperately need to say no find themselves reaching for their credit cards.

Today‟s parents aren‟t equipped to deal with the problem. Many of them, raised in the 1960s and 70s, swore they‟d act differently from their parents and have closer relationships with their own children. Many even wear the same designer clothes as their kids and listen to the same music. And they work more hours; at the end of a long week, it‟s tempting to buy peace with „yes‟ and not mar precious family time with conflict. Anxiety about the future is another factor. How do well intentioned parents say no to all the sports gear and arts and language lessons they believe will help their kids thrive in an increasingly competitive world? Experts agree: too much love won‟t spoil a child. Too few limits will.

What parents need to find is a balance between the advantages of an affluent society and the critical life lessons that come from waiting, saving and working hard to achieve goals. That search for balance has to start early. Children need limits on their behaviour because they feel better and more secure when they live within a secured structure.

Older children learn self-control by watching how others, especially parents act. Learning how to overcome challenges is essential to becoming a successful adult. Few parents ask kids to do chores. They think their kids are already overburdened by social and academic pressures. Every individual can be of service to others, and life has meaning beyond one‟s own immediate happiness. That means parents eager to teach values have to take a long, hard look at their own

Questions:

A. Choose the most appropriate option:

a) What do the psychologists, educators and parents want to teach the children?

1. To teach them about treachery.
2. To teach them about indiscipline.
3. To teach them about the values of life like hard work, contentment, honesty and compassion.
4. None of these

b) What is essential to become a successful adult?

1. Learn not to overcome challenges
2. Learn how to overcome challenges
3. Nothing is essential.
4. None of these

c) Why do children need limits on their behaviour when they live within a secured structure?

1. They feel more secure and better.
2. They feel insecure.
3. They feel bored.
4. None of these.

d) What is the drawback of giving children too much too soon?

1. They fail to cope with life‟s disappointments when they grow up.
2. They do not study seriously.
3. They become quarrelsome when they grow up.
4. None of these.

B. Answer the following questions briefly:

1. What values do parents and teachers want children to learn?
2. What are the results of giving the children too much too soon?
3. Why do today‟s children want more?
4. What is the balance which the parents need to have in today’s world?
5. What is the necessity to set limits for children?

6. How do older children learn self-control?

C. Find words in the passage similar in meaning as:

(a) a feeling of satisfaction (para 1)

(b) valuable (para 3)

Passage 3:

MAGIC MACHINE

Mohammed Jamshed Khan replaced the ATM card in his wallet and counted the crisp new notes he‟d just withdrawn from the machine. ₹ 6000? "This can‟t be right!" thought the young Mumbai civil contractor. He counted again. It was indeed ₹ 6000. "All I‟d asked for was ? 1200," Khan told his friend Faisal Mukhi who was standing nearby.

"You pressed the wrong buttons, silly," said Mukhi.

"No way!" exclaimed Khan as he pushed his card back in again, keyed in his numeric password and asked for ? 1000. Beep, click…….whirr, beeeep ! Out popped ₹ 5000 and a little transaction slip that read. WITHDRAWAL ₹ 1000.

"Let‟s try again," said Khan. Card, password, 2-0-0-0…….beeeep ! But he got ₹ 10,000. By now it seemed certain that the ATM was giving away 500-rupee notes instead of hundreds. "Maybe something‟s wrong with your card," Mukhi told Khan, "let me try mine." Mukhi‟s balance was low—only ? 1300. He pushed his card in and asked for ? 1000. The machine spat out 5000. "ATMs (short for automated teller machines) are extremely secure and among the hardest of machines. Look up the Encyclopaedia Britannica for "ATMs" and you‟ll find it entered under "Locks"—it‟s virtually impossible to fool an ATM. And the probability of an ATM overpaying is virtually nil. But here they were, two buddies with ? 26000 between them— ₹ 20,800 of it free money.

There were no other customers in sight on that warm July afternoon. And they could have kept on going. Instead, Khan and Mukhi went outside the ATM‟s enclosure and summoned the guard on duty. "The machine‟s all mixed up," they told him. The two men then gave the guard a demo: "Look here," said Khan as he inserted his card one last time and hit the buttons, "I‟m withdrawing ? 500 but here‟s 2500!

"Don‟t let anybody near this place," they told the guard as they hopped into an autorickshaw and sped off with all the money.-

It looked like a daylight robbery—in reverse. For they drove two kilometres, to the nearest branch of the bank that owned the ATM, placed the cash-? 28,500 on the bank manager‟s desk and complained about their faulty machine.

„We could have lost a real lot that day," says the manager. This is the kind of honesty we can only dream about. A human error made while loading cash in the ATM had caused the problem. Although we could have traced the customers, it might have meant a lot of trouble for us, had they kept our money."

But did either Mohammed Khan or Faisal Mukhi ever think of keeping the money during their moment with the magic machine? "Not once," says Khan. Adds Mukhi: "Never."

Questions:

A. Choose the most appropriate option:

(a) The theme of the passage is……..

1. dishonesty
2. loyalty

3. honesty

4. sincerity

(b) The passage proves the machines……..

1. do not make mistakes

2. never make mistakes

3. do make mistakes

4. all of the above

(c) The manager says that "This is the kind of honesty we can only dream about"because……..

1. most of the people are corrupt

2. man is greedy by nature

3. riches attracts people

4. all of the above

(d) Khan and Mukhi went outside the ATM"s enclosure and summoned the guard on duty to inform him about the

1. erratic behaviour of ATM

2. shortage of notes in the ATM machine

3. suspicious man standing outside the ATM enclosure

4. none of these

B. Answer the following questions briefly:

1. Why was Mohammed Jamshed Khan surprised? How did he express it and to whom? What efforts did the two friends make to verify the behaviour of the machine?
2. What do you know about ATM? What was peculiar about this particular ATM?
3. "It looked like a daylight robbery—in reverse." Substantiate this statement.
4. How did the manager react to the disclosure?
5. What did they ask the guard to do?

C. Find words in the passage similar in meaning as:

(a) slightly stiff

(b) almost

Passage: 4

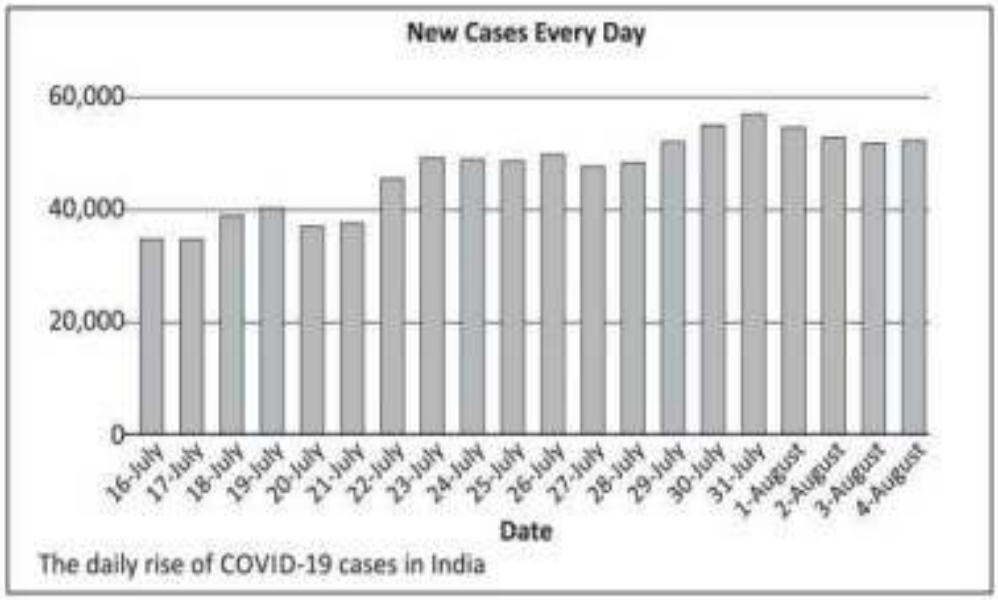
<u>India Covid - 19 Numbers Explained</u>

1) With novel Coronavirus spreading rapidly all over the country, there are only three states right now, Meghalaya, Sikkim and Andaman and Nicobar Islands, that have less than 1,000 people infected with the disease.
2) Lakshadweep, of course, still hasn"t reported even a single case till now, the only region in India entirely free of the epidemic.
3) Otherwise, even the relatively smaller states now have a significantly large spread of the disease. Goa, for example, has seen more than 7,000 of its people infected by the virus till now. Tripura has over 5,500 cases, while Manipur has more than 3,000, and Nagaland a little less than 2,500. Puducherry has more than 4,000 cases, while even Daman and Diu has over 1,300 people infected.

4) And in each of these states, the numbers are rising at a fast pace, at a rate higher than the national level. The infections had initially reached these states in the first and second week of May, when the lockdown was relaxed for the first time to enable people stuck in different parts of the country to return to their native places.

5) After a period of very slow growth, the number of cases have begun to rise rapidly in the last one month. In Goa, for example, the total number of infected people has nearly doubled in the last 15 days. Same has happened in Puducherry, as well.

6) Tuesday was one of those rare occasions when the number of active cases in the country, those who are yet to recover from the disease, went down compared to the previous day. That is because the number of recoveries, combined with the number of deaths, exceeded the new cases that were detected on Tuesday.



The daily rise of COVID-19 cases in India

7) With over 52,500 new cases detected in the country, the total number of infections crossed 19 lakh, out of which 12.82 lakh people have recovered from the disease. The number of dead is now close to 40,000.

8) The number of recoveries on Tuesday was the highest-ever for a single day. More than 51,700 people were declared to have been recovered. Three days earlier, the number of recoveries had crossed 50,000 for the first time, but in the next two days the number had fallen to much lower levels.

Choose the correct option to answer the questions based on the above passage and graphics.

a) How are these three states – Meghalaya, Sikkim and Andaman and Nicobar Islands – different from the rest of India?

i.) They are the only states to have less than 1,000 people infected with novel coronavirus
ii.) They are three of the five states to have less than 1,000 people infected with novel coronavirus
iii.) They are the only states to have less than 2,000 people infected with novel coronavirus
iv.) None of these

(b) ……. the only region in India which is entirely free of the epidemic.
(i)Andaman and Nicobar Islands

(ii) Maharashtra
(iii) Lakshadweep
(iv) Tripura

(c) What is common among Goa, Tripura, Manipur, Nagaland, Puducherry and Daman and Diu?
(i) The numbers are rising at a fast pace at rates lower than the national level
(ii) The numbers are falling at a fast pace at rates equal than the national level
(iii) The numbers are rising at a fast pace at rates higher than the national level
(iv) None of these

(d) Based on your understanding of the passage, choose the option that lists the inherent qualities of climate in the present times.
(i) 1 and 4
(ii) 2 and 6
(iii) 1 and 3
(iv) 3 and 5

(e) Which date in the graph shows the highest jump of detected cases in a day?
(i) July 30
(ii) July 31
(iii) August 1
(iv) August 2

(f) Of the 19 lakh infected cases, how many have recovered?
(i) 11.82 lakh
(ii) 13.82 lakh
(iii) 12.81 lakh
(iv) 12.82 lakh

(g) More than 51,700 people were declared to have been recovered on .
(i) Wednesday
(ii) Sunday
(iii) Tuesday
(iv) Monday

(h) When did the number of recoveries cross 50,000 for the first time?
(i) two days earlier
(ii) Tuesday
(iii) three days earlier than Tuesday
(iv) none of these

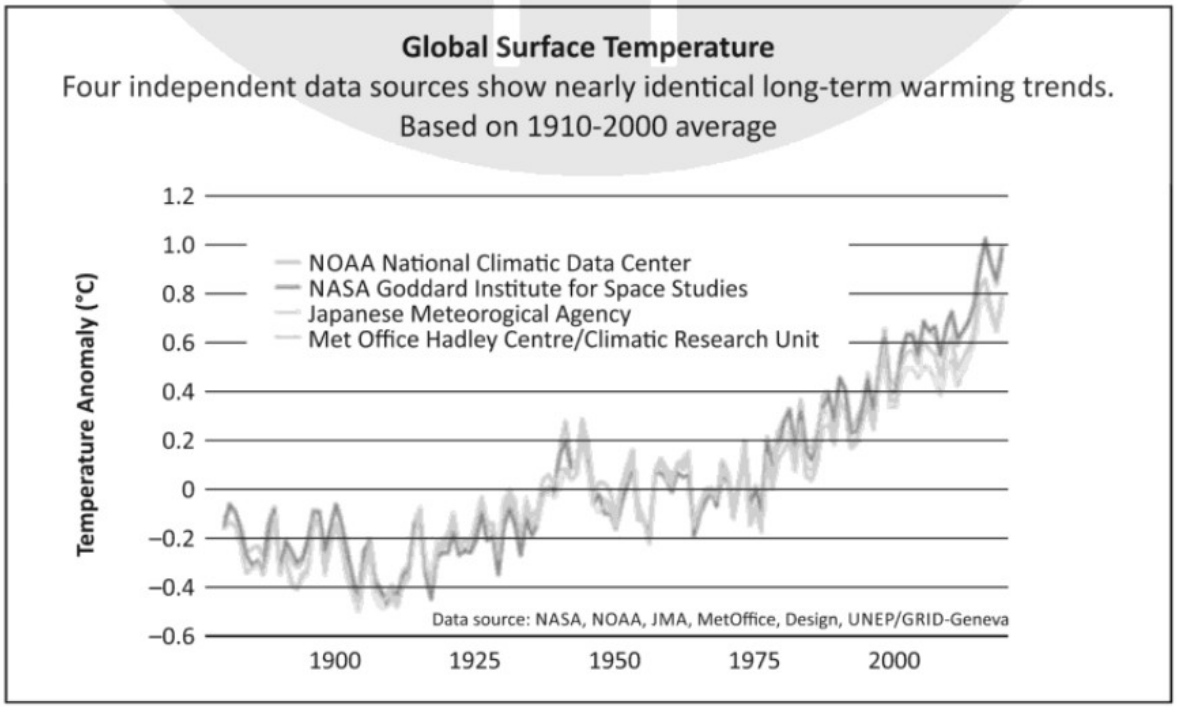
(i) Which word in the passage means the same as “quickly”?
(i) rapidly
(ii) significantly
(iii) native
(iv) rare

(j) Which word in the passage is opposite in meaning to “indigenous”?
(i) rapidly
(ii) significantly
(iii) native
(iv) rare

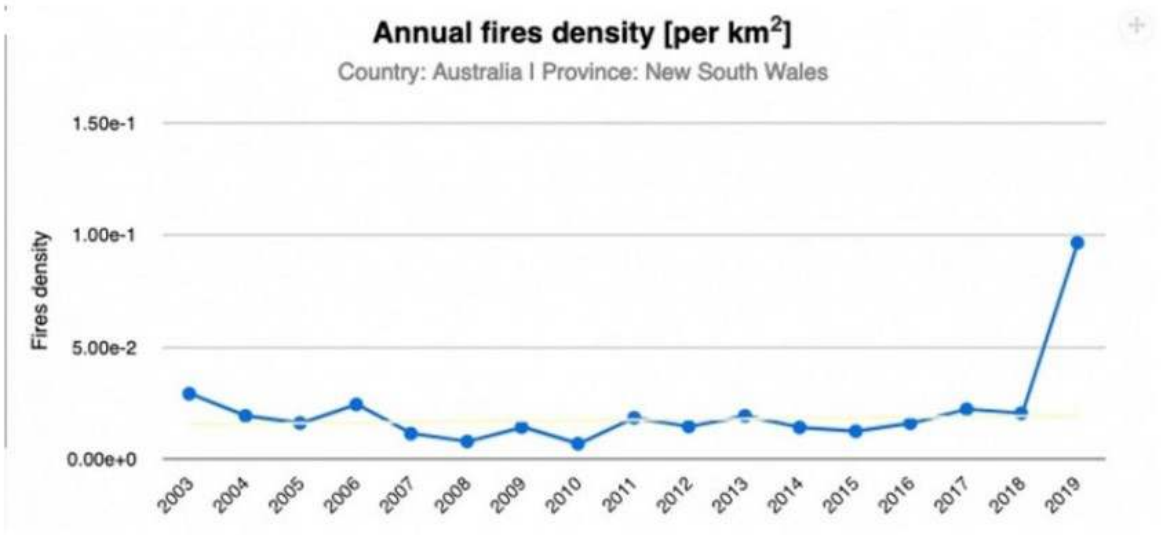
Passage: 5

Australia's 2019-2020 Bushfire Season was not Normal

1) Data from satellite sources assembled by the United Nations Environment Programme"s (UNEP) World Environment Situation Room confirms that the wildfires in Australia in the last two months of 2019 and the first six weeks of 2020 were far from normal. 2019 was the second hottest year on record since 1880, and Australia recorded its warmest temperatures ever in December 2019.
2) "Rising temperatures continue to melt records. The past decade was the hottest on record. Scientists tell us that ocean temperatures are now rising at the equivalent of five Hiroshima bombs a second. One million species are in near-term danger of extinction. Our planet is burning," says United Nations Secretary- General António Guterres.



3) "The trend is very clear: 37 of the last 40 years were the warmest recorded since 1880, and the six warmest years recorded were the last six years," says Pascal Peduzzi, Director of UNEP"s Global Resource Information Database in Geneva. "For those who think Australia is always burning, graphs clearly show that these fires were exceptional."



The number of fires in New South Wales remained fairly constant from 2003 to 2018, but more than trebled in 2019 (Fires recorded by MODIS (NASA), trend analysis, UNEP/GRID-Geneva).

4) "This service, accessible via the UNEP‟s World Environment Situation Room, is provided for all countries at national and provincial levels. It identifies trends in wildfire activity since 2003, when the data first became available and monitoring began. We have sliced and diced the satellite-based data on wildfires worldwide from 2009 to the present day. We analyse the wildfires‟ data by month, type of land cover, protected area, province and nation to produce information products," Peduzzi adds. (Source: UN Environment)

Choose the correct option to answer the questions based on the above passage and graphics.

(a) What do the reports confirm about the 2019-20 Australian fires?
- (i) The fires were not normal
- (ii) The fires were normal
- (iii) The fires were natural
- (iv) Data inconclusive

(b) What was the difference in the recorded temperatures in 2019 from the 1880s?
- (i) 2019 recorded the wettest temperatures since 1880s
- (ii) 2019 recorded the hottest temperatures ever
- (iii) 2019 recorded the cooler temperatures than 1880s
- (iv) 2019 recorded the warmest temperatures since 1880s

(c) What comparison has been made between the rising sea temperatures and Hiroshima?
- (i) Ocean temperatures are rising at the equivalent of three Hiroshima bombs a second
- (ii) Ocean temperatures are rising at the equivalent of five Hiroshima bombs a second
- (iii) Ocean temperatures are rising at the equivalent of five Hiroshima bombs an hour
- (iv) None of these

(d) Choose the option that lists the CORRECT answers for the following:

"Rising temperatures continue to melt records. The past decade was the hottest on record. Scientists tell us that ocean temperatures are now rising at the equivalent of five Hiroshima bombs a second". Whose statement is this?

"The trend is very clear: 37 of the last 40 years were the warmest recorded since 1880, and the six warmest years recorded were the last six years." Whose statement is this?

- (i) (1) is from United Nations Secretary and (2) is from the UN President
- (ii) (1) is from the UN President and (2) is from the UN General Secretary
- (iii) (1) is from United Nations Secretary and (2) is from the Director ofUNEP
- (iv) (1) is from the UN General Secretary and (2) is from the UN President

(e) Based on your understanding of the passage, choose the option that lists the inherent qualities of climate in the present times.
- (i) 1 and 3
- (ii) 2 and 6
- (iii) 3 and 4
- (iv) 5 and 6

(f) Which of the following independent data source is NOT PRESENT in the given graph?

(i) NASA

(ii) NOAA

(iii) ISRO

(iv) JMA

(g) Choose the option that lists the CORRECT statement.

(i) Pascal Peduzzi is the Director of UNEP‟s Global Renaissance Information Database

(ii) Pascal Peduzzi is the Director of UNO‟s Global Resource Information Database

(iii) Pascal Peduzzi is the Manager of UNEP‟s Global Resource InformationDatabase

(iv) Pascal Peduzzi is the Director of UNEP‟s Global Resource Information Database

(h) How can you say that the UN is concerned about the rising numbers of coal plants?

(i) UNDP Secretary General António Guterres is calling for curbs on new plants

(ii) UN Secretary General António Guterres is calling for curbs on new plants

(iii) UN Executive Secretary António Guterres is calling for curbs on new plants

(iv) UN Secretary General Antony Guterres is calling for curbs on new plants

(i) UNEP‟s World Environment Situation Room has been tracking world temperatures since.

(i) 2003

(ii) 2013

(iii) 2000

(iv) 2001

(j) The graph compiled with data from four different sources shows that the global surface temperatures have been _.

(i) steady

(ii) falling

(iii) on the rise

(iv) none of these

(k) Which word in the passage means the same as “collect”?

(i) assembled

(ii) extinction

(iii) exceptional

(iv) provincial

(l) Which word in the passage is opposite to the meaning of “vague/murky”?

(i) assembled

(ii) clear

(iii) extinction

(iv) provincial

2) PHYSICS

1. Revise the chapters done in class
2. Do two Assignments
3. Complete practical files
4. Investigatory project(Idea) for Physics Practicals

Assignment 1

Units and Measurements

1. (a) What is coherent system of units?

   (b) What do you understand by principle of homogeneity of dimensions?

2. Wave length of a wave associated with moving particle depends upon mass of the particle (m), velocity of particle (v) and Planck's constant (h). Derive a relation for wavelength.

3. Check the dimensional accuracy of the following equations:

   (a) $s = ut + \frac{1}{2} at^2$

   (b) $s_{nth} = u + \frac{1}{2} (2n-1$, where s_{nth} is the distance travelled in the nth second of the motion

4. Define metre and kilogram as per SI system of units.

5. Add 6.75×10^3 to 4.52×10^2 with due regard to significant figures.

6. Calculate the dimensions of universal gravitational constant. If its value in SI units is 6.67×10^{-11}, what will be its value in CGS system?

7. Which is the world's most accurate clock? What is its accuracy?

8. The mean length of an object is 5cm. Which of the following measurements is more accurate:

   (a) 4.9 cm (b) 4.805cm (c) 5.25cm (d) 5.4cm

9. Plane angle and solid angles have:

   (a) Units but no dimensions

   (b) Dimensions but no units

   (c) No units and dimensions

   (d) Both units and dimensions

10. The prefix femto stands for:

    (a) 10^{15} (b) 10^{-15} (c) 10^5 (d) 10^{-5}

Assignment 2

Motion in a straight line

1. A boy walks to his school at a distance of 6km with constant speed of 2.5km h-1 and walks back with a constant speed of 4km h-1. What is the average speed for the round trip in km/h?

2. (a) A ball is thrown vertically upwards. Draw its velocity- time graph.

(b) What is the nature of displacement-time graph of a body moving with constant acceleration?

3. Derive the following equations of motion by calculus method:

   (a) $v = u + at$

   (b) $s=ut+ ½ at^2$

4. Position of particle is given by $x (m) =4t^2-2t+5$ (t in seconds). Find acceleration and velocity at t=2s.

5. Draw velocity-time graph of a uniform motion of an object along a straight line. What do you conclude from the graph?

6. In case of motion, displacement is directly proportional to the time elapsed. Is acceleration constant or variable? Explain.

7. Explain that a body can have zero average velocity but not zero average speed.

8. What is the value of acceleration due to gravity at the highest point if a body is projected vertically upward:

   (a) $9.81m/s^2$ (b) $9.81m/s$

   (c) $0< a< 9.81m/s^2$ (d) $a > 9.81m/s^2$

3) CHEMISTRY

1) Complete notes and back exercise of Chapter 1,2 and 3.
2) Complete practical files.
3) Make concept map of Chapter 3

4) BIOLOGY

Learn chapter 1 & 2

Prepare a write-up (200 words) on phylogenetic relationship between various kingdoms/ taxon of living world.

5) PHYSICAL EDUCATION

Revise chapter 1 and complete the notes of chapter 1

6) HINDI

1) विद्यालय पत्रिका हेतु कोई लेख, कविता, कहानी,अथवा संस्मरण। (आपकी □ौलिक रचना होनी चाहिए।
2) परियोजना कार्य : (सभी छात्र कक्षा □ें दिए गए निर्देशानुसार अपना-अपना परियोजना कार्य करेंगे।)
3) कार्य पत्रिका □ें दिए गए प्रश्नों के उत्तर अपनी नोटबुक □ें लिखेंगे।
   कक्षा □ें कराए गए पाठ्यक्र□ का दोहराव करेंगे।

7) PSYCHOLOGY

Revise UT-1 Syllabus

Complete the assignment in psychology notebook

Q1. Psychology is derived from two Greek words _____ & _____.

Q2. First laboratory was set up by _____&_____.

Q3. What is organisational psychology?

Q4. Define the introspective method.

Q5. What do you mean by cognitive perspective?

Q6. How did modern psychology begin?

Q7. Vrisha studies in senior secondary and wants to be a journalist. How the knowledge of psychology would help her to become a professional journalist?

Q8. Read the case and answer the questions that follow:

Arun is a student of psychology who is doing research work on human behaviour. He finds out that man's belief and understanding of human behaviour are not true. He also concludes that scientific knowledge generated by psychology often runs against common sense. To make it clearer he conducts a study on some children. He was concerned with children who gave up too easily when faced with a difficult problem.

In general way our common sense tells us to give them easy problems in order to increase their success rate so that their confidence goes up. only latter should we give them difficult problems which they will be able to solve. whereas the second group had a mix of easy and difficult problems. When children faced difficult problems, they failed. Whenever this happened Arun told them that their failure was because they had not tried hard enough and persuaded them not to give up and keep trying. After the study was over, a new set of math problem were given to the groups. What Arun found goes against common belief. Those who had always succeeded because they were given easy problems, gave up much faster then they faced failure then those who had experience of both success and failure and were taught to attributes failure to their lack of efforts.

i.) Which of the following best describes children's hardiness in the study conducted by Arun?

a) Commitment, control, challenge
b) challenge, control, calmness
c) commitment, confidence, control
d) control, commitment, conviction

ii) Which of the following is associated with the study conducted by Arun?

a) past experience
b) common sense
c) future perspectives
d) None of the above

iii) After conducting the study Arun found out which of the following points?

a) The scientific knowledge generated by psychology often runs against common sense.
b) common sense is always true.
c) Psychology and common sense have same notion.
d) All of the above

iv) Which of the following is true about the study conducted by Arun?

a) Arun took three groups of children for study.

b) All the groups were equal in intelligence.

c) The first group was much smarter that the rest.

d) The first group was given easy problems which they were always able to solve.

Q9. Praveen is a student of class 11 and he thinks that he is weak in studies as compared to others. He cannot perform good in any field. How can psychologist help Praveen in solving this problem?

Q10. Varuna thinks that there are many beliefs and understanding of human behaviour which are not true. Give an example which justifies this statement.

8) COMPUTER SCIENCE

Complete assignment 1 and 2 And revise chap-1 and 2

Assignment -1

Chapter-1

1. How does the computer understand a program written in high level language?
2. Why is the execution time of the machine code less than that of source code?
3. What is the need of RAM? How does it differ from ROM?
4. What is the need for secondary memory?
5. How do different components of the computer communicate with each other?
6. Draw the block diagram of a computer system. Briefly write about the functionality of each component.
7. What is the primary role of system bus? Why is data bus is bidirectional while address bus is unidirectional?
8. Differentiate between proprietary software and freeware software. Name two software for each type.
9. Write the main difference between microcontroller Notes and microprocessor. Why do smart home appliances have a microcontroller instead of microprocessor embedded in them?

Assignment -2

Chapter-2

10. Write base values of binary, octal and hexadecimal number system.
11. Differentiate between ASCII and ISCII.
12. Try the following :
    (701)8 → ( )10
    (170)8 → ( )2
    (25A)16 → ( )10
    (5D2)16→ ( )10
    (11001010)2→( )10
    (1010111)2 → ( )10
13. Convert the following binary numbers into Octal and Hexadecimal numbers:
    (1110001000)2
    (110110101)2
    (1010100)
    (1010.1001)
14. What is the advantages of preparing a digital content in Indian language by using UNICODE font?

15. Encode the word COMPUTER using ASCII and convert the encode value into binary value.
16. Convert fraction Binary Number into Octal and Hexadecimal Number: (10101100.01011)2
17. What is UNICODE?

9) ACCOUNTS

Revise following chapters and solve practical problems in notebook.

Chapter- Accounting equation (Practical's 6-12 and 21-25)

Chapter – Rule of debit and credit (Practical's 1-5)

Chapter – Journal (Practical 1-20 and missing figures)

10) BUSINESS STUDIES

Revise following chapters and complete notes (concept maps and key lines)

Chapter- Evolution and Fundamentals of Business

Chapter – Forms of Business organizations

Project : visit a bank to open a account or kind of services provided by the bank (under parents guidance)

11) ECONOMICS

Revise following chapters and solve numericals in notebook.

Chapter- Measures of Central Tendency- Mean (10 numericals)

Chapter – Measures of Central Tendency-Median and Mode (12 numericals)

Chapter – Significance of Statistics in Economics

Chapter- Collection of data

12) GEOGRAPHY

Revise complete Syllabus

Complete Geography Practical File

Revise the map work from part 2

13) POLITICAL SCIENCE

Revise UT1 Syllabus

Complete Project Work file

14) HISTORY

1) Complete notes of Chapter 1- Important Terms to be Remember, Question Answer of Chapter 2 and 3.
2) Complete Map Files and Project Files
3) Write down 10 Mcq questions
4) 5 – 3- Marks questions and 3 – 8- Marks questions in your copies

Revise syllabus for UT- I

15) MATHS

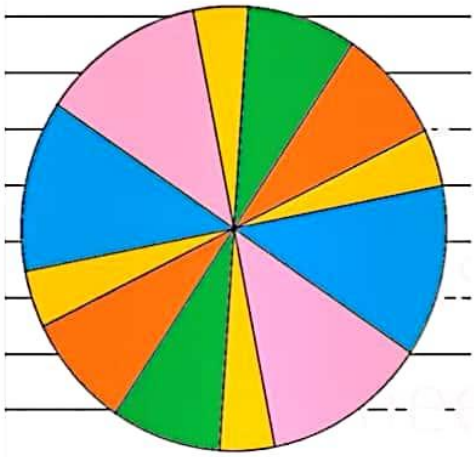
Revise Ch 1, 2, 3

Do assignment in Maths copy

Do lab manual activities on assignment sheets

10	**Assertion (A)** :The value of $\sin(-690^0)\cos(-300^0)+\cos(-750^0)\sin(-240^0)=1$ **Reason(R)**: The values of sinx and cosx is negative in third and fourth quadrant respectively.	1
	SECTION-B	
11	If set A={1,3,5} write the subsets of set A. Also write the number of elements in P[P(A)]. OR If A={x: x=n^2,n = 1,2,3} ,then write the proper subsets of set A.	2
12	Let A={x : x^2-5x+6=0} ,B={2,4} ,C={4,5} Find $A \times (B \cap C)$	2
13	If $\tan\theta = \frac{1}{2}$ *and* $\tan\varphi = \frac{1}{3}$ *then find the value of* $\theta + \varphi$	2
	SECTION-C	
14	If $U = \{1,2,3,5,7,9,11,13,15,17\} A = \{3,5,7,9,11\}$ *and* $B = \{7,9,11,13\}, C = \{11,13,15\}$ *and* $D = \{15,17\}$ *then find* $(i)(A \cap B) \cup (C \cap D)$ $(ii) A \cup B \cup C$ $(iii)(A \cap B)'$	3
15	Find the value of $\frac{1-tan^2 15^0}{1+tan^2 15^0}$ OR If tan(A-B) =1 , $\sec(A+B) = \frac{2}{\sqrt{3}}$,find the smallest positive value of B.	3 3
	SECTION-D	
16	(a) A relation R is defined in the set Z of integers as follows: $(x, y) \in R$ *iff* $x^2 + y^2 = 9$ (i) Write roster form of R (ii) Write domain of R (iii) Write range of R (b) Find the range of the function , $f(x) = \frac{x^2-x+1}{x^2+x+1}$	5
17	(a) If $\sin\theta = \sin 15^0 + \sin 45^0$ *find* θ (b) Evaluate : $3(sinx - cosx)^4 + 6(sinx + cosx)^2 + 4(sin^6 x + cos^6 x)$ (c) Simplify : $4sinAcos^3 A - 4cosAsin^3 A$	5
	SECTION- E **(This section comprises of 2 case-study/passage-based questions of 4 marks each with sub parts. First case study question has two sub-parts of 2 marks each . The second case study question has three sub parts of 1,1 and 2 marks each.)**	
18	**Case-Study 1:** Read the following passage and answer the questions given below. A class has 175 students. The following data shows the number of students opting one or more subjects.Maths-100,Physics-70,Chemistry-40,Maths and Physics-30,Maths and Chemistry-28,Physics and Chemistry-23,Maths,Physics and Chemistry-18.	
	(i) How many students have opted for anyone of the subjects?	2
	(ii) How many students have opted for exactly two of the subjects?	2
19	Case –study 2: Shabnam is preparing a geometrical design using circles and line segments, the design shown here is such that whole circle is divided into parts of five colours. If area of each sector is given as in the table.	

colour	Pink	Blue	Orange	Green	Yellow
Part of the area of the circle	1/8	1/8	1/12	1/12	1/24



Based on the given information answer the questions given below.

	(i)	What will be the angle subtended (in radians) by pink shaded sectors at the centre?	1
	(ii)	What will be the angle subtended (in degrees) by each yellow shaded sectors at the centre?	1
	(iii)	If radius of the circle is 10cm,what will be the total length of black boundry around blue shaded sectors?	2

TOPIC SETS AND SUBSETS

Objective

To verify distributive law for three given non-empty sets A, B and C that is

(*i*) $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$

(*ii*) $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$

MATERIAL REQUIRED

1. Hardboard
2. White thick sheets of paper
3. Colour pencils
4. A pair of scissors
5. Fevicol
6. Geometry box

Pre-activity Knowledge

1. Venn diagrams
2. Concept of sets and operations on sets
3. Laws of Algebra of sets

Procedure

1. Cut 5 rectangular strips of suitable size from a sheet of paper and paste them on the hardboard in such a wa that three of the rectangles are placed in a horizontal line and remaining two rectangles are placed in a line ju below the above three rectangles.
2. Draw three circles and mark them as A, B and C in each of the five rectangles as shown in the figure.
3. Colour/shade the portions as shown in the figures.
4. Here U denotes the universal set represented by the rectangle in each figure and circle A, B and C represe the subsets of the universal set U.
5.

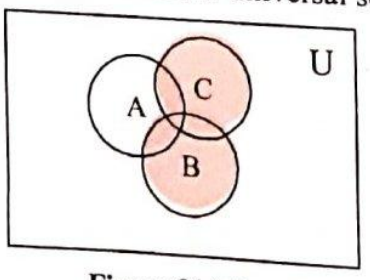


Figure 3(*a*) $B \cup C$

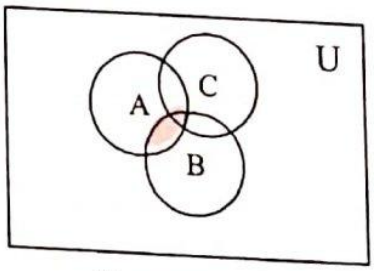


Figure 3(*b*) $A \cap B$

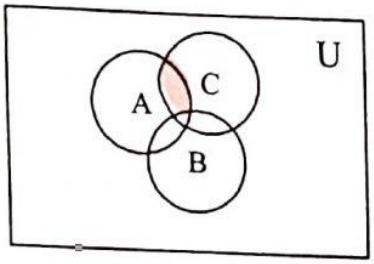


Figure 3(*c*) $A \cap C$

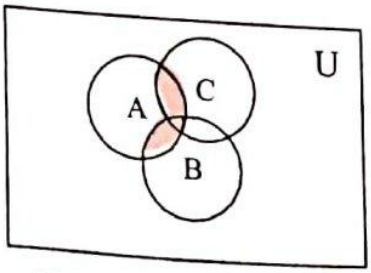


Figure 3(*d*) $A \cap (B \cup C)$

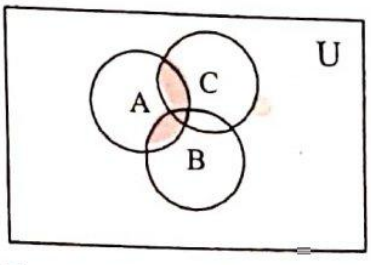


Figure 3(*e*) $(A \cap B) \cup (A \cap C)$

Observation

1. Coloured portion in figure 3(*a*) represents ..... .
2. Coloured portion in figure 3(*b*) represents ..... .
3. Coloured portion in figure 3(*c*) represents ..... .
4. Coloured portion in figure 3(*d*) represents ..... .
5. Coloured portion in figure 3(*e*) represents ..... .
6. $A \cap (B \cup C) =$ ..... ?

Result

Thus, the distributive law is verified.

(*i*) $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$

Note : Similarly (*ii*), can be verify. $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$

VIVA-VOCE

Q.1. What do you mean by intersection of two sets ?

Ans. The intersection of two sets A and B is set of all those elements which are in A as well as in B.
$A \cap B = \{x : x \in A \text{ and } x \in B\}$

Q.2. What are the distributive laws of algebra of sets ?

Ans. (*i*) $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$
(*ii*) $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$

Q.3. What is the complement of a universal set ?

Ans. Null set or ϕ.

Q.4. What is the complement of $(A \cup A')$?

Ans. ϕ.

Q.5. If $A = \{1, 2, 3, 4\}$; $B = \{2, 4, 6, 8\}$; $C = \{3, 4, 5, 6\}$ then what is the value of $(A \cap B) \cap C$?

Ans. $(A \cap B) \cap C = \{4\}$.

TOPIC RELATIONS AND FUNCTIONS

Objective

To identify a relation and a function.

Pre-activity Knowledge

1. Concept of ordered pairs
2. Cartesian product of sets
3. Concept of relation and function

MATERIAL REQUIRED

1. Hardboard
2. Battery
3. Electric bulbs of two different colours
4. Testing screws
5. Tester
6. Electrical wires and switches
7. Fevicol
8. White chart paper
9. Geometry box
10. Drill machine

Procedure

1. Take a piece of hardboard of convenient size and paste a white chart paper on it.
2. Drill eight holes on the left side of board in a column and mark them as $A_1, A_2, A_3, A_4, A_5, A_6, A_7$ and A_8 as shown in the figure 5.
3. Drill seven holes on the right side of the board in a column and mark them as T, U,V, W, X, Y and Z as shown in the figure 5.
4. Fix bulbs of same colour in the holes $A_1, A_2, A_3, A_4, A_5, A_6, A_7$ and A_8.
5. Fix bulbs of the other colour in the holes T, U, V, W, X, Y and Z.
6. Fix testing screws at the bottom of the board marked as 1, 2, 3,..., 8.
7. Complete the electrical circuits in such a manner that a pair of corresponding bulbs, one from each column glow simultaneously.
8. These ordered pairs of bulbs will give ordered pairs, which will constitute a relation which in turn may/ may not be a function [see Figure 5].

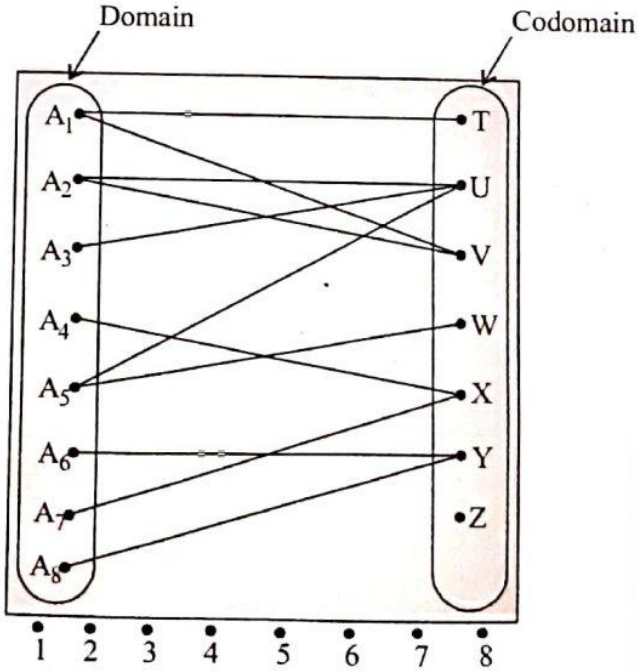


Figure 5

Demonstration

1. Bulbs at $A_1, A_2, A_3, A_4, A_5, A_6, A_7$ and A_8 along the left column represent domain and bulbs along the right column at T, U, V,..., Z represent co-domain.
2. Using two or more testing screws out of given eight screws, obtain different order pairs. In Fig. 5, all the eight screws have been used to give different ordered pairs such as $(A_1, T), (A_2, V), (A_3, U), (A_4, X), (A_5, U), (A_5, W)$...etc.z
3. By choosing different ordered pairs one can make different sets of ordered pairs.

Observation

1. In figure 5, ordered pairs are ---------- .
2. These ordered pairs constitute a ---------- .
3. The ordered pairs $(A_1, T), (A_2, V), (A_3, U), (A_5, U), (A_4, X), (A_6, Y), (A_7, X), (A_8, Y)$ constitute a relation which is also a ---------- .
4. The ordered pairs $(A_2, V), (A_3, U), (A_4, X), (A_5, W), (A_5, U)$ constitute a ---------- which is not a ---------- .

VIVA-VOCE

Q. 1. If $A = \{1, 2, 3\}$, $B = \{4, 5, 6\}$. Is the following constitute a relation R from A to B ?
$R = \{(1, 4), (4, 2), (2, 4), (3, 6), (1, 5)\}$

Ans. No.

Q. 2. Is this statement "Every function is a relation but not conversely" true ?

Ans. Yes.

Q. 3. When a relation become a function ?

Ans. A relation f from set A to set B become a function if every element of set A has one and only one image in set B.

Q. 4. Define domain and co-domain.

Ans. In the function $f: X \to Y \Rightarrow X$ is a function from X to Y. X is called the domain of f and Y is called co-domain of f.

Q. 5. Give the formula for total number of functions f : A to B.

Ans. Total number of functions from A to B = $(n(B))^{n(A)}$

TOPIC TRIGONOMETRIC FUNCTIONS

Objective

To find the values of sine and cosine functions in second, third and fourth quadrants using given values in first quadrant.

MATERIAL REQUIRED

1. Cardboard
2. White chart paper
3. Geometry Box
4. Fevicol
5. Steel wires
6. Needle

Pre-activity Knowledge

1. Concepts of coordinate system and quadrants
2. Mirror images w.r.t. x-axis y-axis and origin
3. Values $\sin\frac{\pi}{6}, \cos\frac{\pi}{6}, \sin\frac{\pi}{4}, \cos\frac{\pi}{4}, \sin\frac{\pi}{3}, \cos\frac{\pi}{3}$ of 1st quadrant

Procedure

1. Take a cardboard of suitable size and paste a white chart paper with fevicol.
2. Draw a unit circle with centre O on chart paper.
3. Using the centre of circle, draw two perpendicular lines X′OX and YOY′ representing x-axis and y-axis respectively as shown in figure 8 (a).

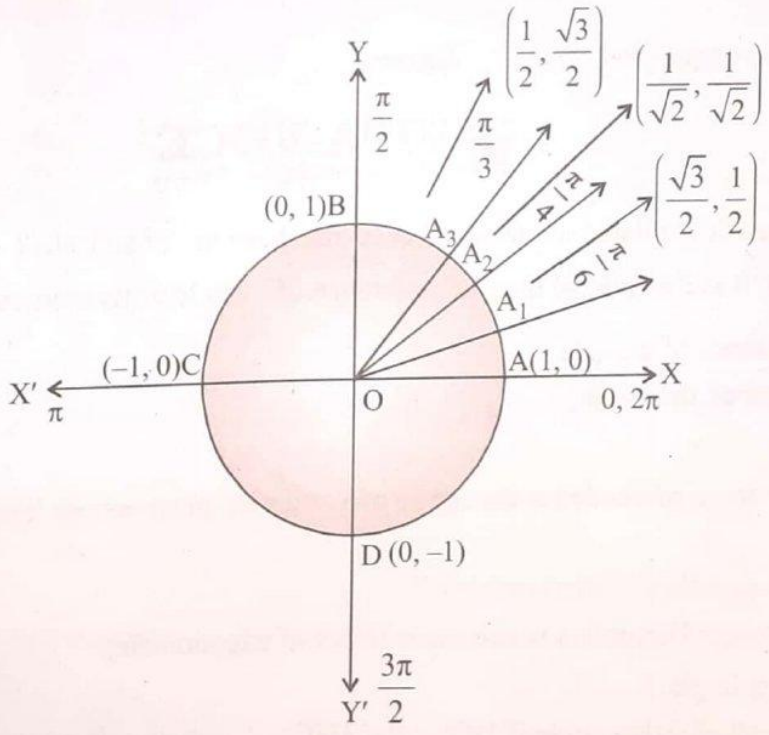


Figure 8(a)

4. Mark the points as A, C where the circle cuts the x-axis and B,D, where the circle cuts the y-axis, as shown in figure 8 (a).

5. Using O, draw angles A_1OX, A_2OX and A_3OX of measures $\frac{\pi}{6}, \frac{\pi}{4}$ and $\frac{\pi}{3}$, respectively.

6. Now, take a needle of unit length. Fix one end of it at the centre of the circle and the other end to move freely along the circle.

❑ Demonstration

1. The coordinates of the point A_1 are $\left(\sqrt{\frac{3}{2}}, \frac{1}{2}\right)$ because it x-coordinate is $\cos\frac{\pi}{6}$ and y-coordinate is $\sin\frac{\pi}{6}$.

   Similarly, the coordinates of the point A_2 and A_3 are $\left(\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}\right)$ and $\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$, respectively.

2. To find the value of sine or cosine of some angle in the second quadrant (say) $\frac{3\pi}{4}$, rotate the needle in anti clockwise direction making an angle B_1OX of measures $\frac{3\pi}{4} = 135°$ with the positive direction of x-axis.

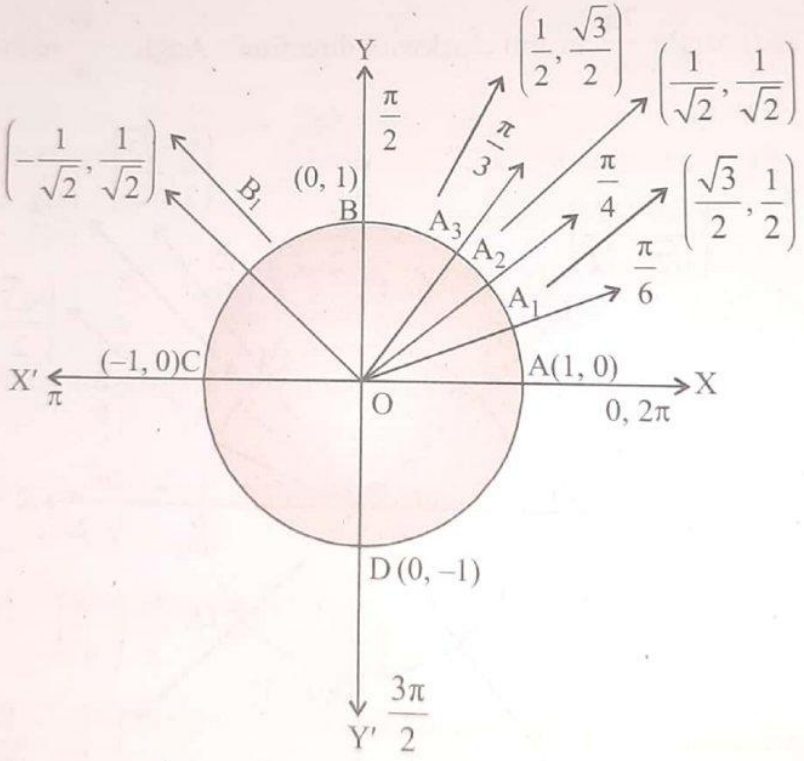


Figure 8(*b*)

3. Look at the position OB_1 of the needle in Figure 8(*b*). Since $\frac{3\pi}{4} = \pi - \frac{\pi}{4}$, OB_1 is the mirror image of A_2 with respect to y-axis. Therefore, the coordinates of B_1 are $\left(-\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}\right)$. Thus, we have $\sin\frac{3\pi}{4} = \frac{1}{\sqrt{2}}$ and $\cos\frac{3\pi}{4} = -\frac{1}{\sqrt{2}}$.

4. To find the value of sine or cosine of some angle say, $\pi + \frac{\pi}{3} = \frac{4\pi}{3}$, in the third quadrant, rotate the needle in anti clockwise direction making an angle of $\frac{4\pi}{3}$ with the positive direction of x-axis.

5. Look at the position OC_1 of the needle, which is shown in figure 8(c). Point C_1 is the mirror image of the point A_3 (since $\angle C_1OA_3 = 180°$) with respect to origin. Therefore, co-ordinates of C_1 are $\left(-\frac{1}{2}, \frac{-\sqrt{3}}{2}\right)$ and hence

$$\sin\left(\frac{4\pi}{3}\right) = \frac{-\sqrt{3}}{2}, \cos\left(\frac{4\pi}{3}\right) = -\frac{1}{2}.$$

6. To find the value of sine or cosine of some angle in the fourth quadrant, say $\frac{7\pi}{4}$, rotate the needle in anti clockwise direction making an angle of $\frac{7\pi}{4}$ with the positive direction of x-axis represented by OD_1 as shown in figure 8(d) Angle $\frac{7\pi}{4}$ in anti clockwise direction = Angle $-\frac{\pi}{4}$ in the clockwise direction.

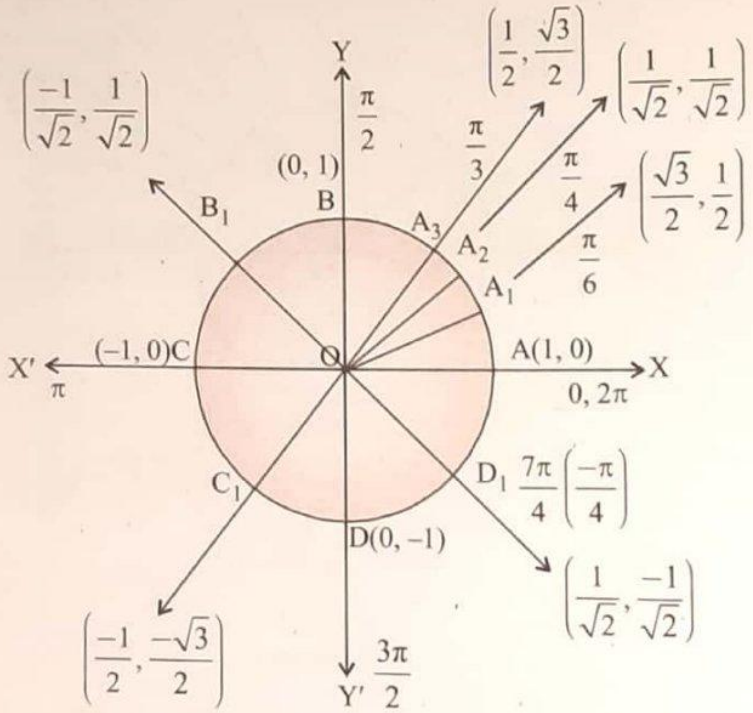


Figure 8(c)

7. From figure 8(c). D_1 is the mirror image of A_2 with respect to x-axis.

Therefore, coordinates of D_1 are $\left(\frac{1}{\sqrt{2}}, -\frac{1}{\sqrt{2}}\right)$.

Thus $\sin\left(\frac{7\pi}{4}\right) = \sin\left(-\frac{\pi}{4}\right) = -\frac{1}{\sqrt{2}}$

and $\cos\left(\frac{7\pi}{4}\right) = \cos\left(-\frac{\pi}{4}\right) = \frac{1}{\sqrt{2}}$

8. Now, to find the value of sine or cosine of some angle, which is greater than one revolution, say $\frac{13\pi}{6}$, rotate the needle in anti clockwise direction since $\frac{13\pi}{6} = 2\pi + \frac{\pi}{6}$, the needle will reach at the position OA_1. Therefore,

$\sin\left(\frac{13\pi}{6}\right) = \sin\left(\frac{\pi}{6}\right) = \frac{1}{2}$ and $\cos\left(\frac{13\pi}{6}\right) = \cos\left(\frac{\pi}{6}\right) = \frac{\sqrt{3}}{2}$.

❑ Observations

1. Angle made by the needle in one complete revolution is ..... .
2. $\sin\frac{\pi}{3} =$ ..... $= \sin 2\pi +$ ..... .

   $\cos\frac{\pi}{6} =$ ..... $= \cos\left(-\frac{\pi}{6}\right)$ ..... .
3. Sine function is non-negative in ..... and ..... quadrants.
4. Cosine function is non-negative in ..... and ..... quadrants.

✔ VIVA-VOCE

Q.1. Name the *t*-ratios which are positive in second quadrant.

Ans. sine and cosecant

Q.2. Name the *t*-ratios which are negative in third quadrant.

Ans. (*i*) sine, cosine, cosecant and secant.

Q.3. Name the quadrant in which all *t*-ratios are positive.

Ans. First quadrant

Q.4. Name the trigonometric functions (*t*-ratios) which are periodic having period π.

Ans. tan θ and cotangent θ.

Q.5. What is the value of $\sin(-\theta)$?

Ans. $-\sin\theta$

Q.6. What is the value of $\cos(-\theta)$?

Ans. $\cos\theta$