# SCHOOL, THRISSUR 

CLASS VII

## QUESTION BANK

## PART II

2023-24

## English

I. Read through the following sentences, locate the errors and correct them so as to have the verb agree with the subject.

1. Music soothe me.
2. Billy bake brownies every Halloween.
3. Peggy and Grace is arguing again.
4. Elsie never takes the bus to work.
5. The people who own that house has no insurance.
6. One of these mechanics have a set of jumper cables.
7. Felix and his brother is mending the wings of butterflies.
8. Both of my essays is brilliant.
9. The pulses emitted by a neutron star recurs at precise intervals.
10. One of my uncles dances at the Rainbow Cafe.
11. Phil and Jeremy has gone to the concert.
12. Both of my daughters are professional dancers.
13. Every one of the workers receive the same benefits.
14. There is two gerbils in my bathroom.
15. This box of toys belong in the attic.
II. Fill in the blanks with suitable verb Forms given in the brackets.
16. I $\qquad$ (do) my homework. I am free now.
17. Nick $\qquad$ (begin) travelling the world in 2008.
18. When I $\qquad$ (go) to the railway station, the train (leave) already the station.
19. Nick wanted to $\qquad$ (kill) himself.
20. Bethany was $\qquad$ (bite) by a shark.
21. Once when I $\qquad$ (be) in a car at traffic lights, a girl (look) at me interestingly.
22. I $\qquad$ (buy) a scooter next week.
23. There $\qquad$ (be) a great value in disaster.
24. Before he $\qquad$ (become) the president of the United States, Lincoln $\qquad$ (fail) many times.
25. I $\qquad$ (be) busy when you came there.
III. For each of the following sentences, place the adverbs given in in their most usual positions in the sentence.
26. We pick the flowers. (carefully, usually)
27. She answers. (correctly, rarely)
28. He is wrong. (however, seldom)
29. We will attend the concert. (therefore, tonight)
30. We found the hotel. (easily, nevertheless)
31. They left. (quietly, this morning)
32. She wins first prize. (always, furthermore)
33. He finished. (late, often)
34. We reached the station. (quickly, consequently)
35. You speak. (loudly, never)
36. We would have gone to the beach. (otherwise, yesterday)
37. They worked. (quickly, today)
38. I want to analyze the book. (carefully, sometime)
39. We arrive. (early, sometimes)

## IV. Please fill in the blanks with the appropriate prepositions;

1. He lives $\qquad$ Ahmedabad.
2. They prefer to stay $\qquad$ a farmhouse.
3. The rat ran $\qquad$ the hole.
4. They go to university $\qquad$ walk.
5. It is advisable to stay inside $\qquad$ the hurricanes.
6. The kids fought $\qquad$ themselves
7. Everyone cheered $\qquad$ Reema $\qquad$ her success.
8. The instructor insisted $\qquad$ completing the drawing before leaving the class.
9. They are not familiar $\qquad$ this subject.
10. He is very angry $\qquad$ us.
11. Who was he talking $\qquad$ ?
12. Eskimo reside $\qquad$ the igloo.
13. I purchased this cycle $\qquad$ two thousand rupees.
14. The supervisor is dissatisfied $\qquad$ his performance.
15. You have to walk $\qquad$ the door to exit this hall.

## ANSWER KEY

## I.

1. Music soothes me.
2. Billy bakes brownies every Halloween.
3. Peggy and Grace are arguing again.
4. Correct
5. The people who own that house have no insurance.
6. One of these mechanics has a set of jumper cables.
7. Felix and his brother are mending the wings of butterflies.
8. Both of my essays are brilliant.
9. The pulses emitted by a neutron star recur at precise intervals.
10. Correct
11. Phil and Jeremy have gone to the concert.
12. Correct
13. Every one of the workers receives the same benefits.
14. There are two gerbils in my bathroom.
15. This box of toys belongs in the attic.

## II.

1. am doing
2. began
3. went, had left
4. kill
5. bitten
6. was, was looking
7. will buy
8. was
9. became, had failed
10. was

## III.

1. We usually pick the flowers carefully.
2. She rarely answers correctly.
3. However, he is seldom wrong.
4. Therefore, we will attend the concert tonight.
5. Nevertheless, we found the hotel easily.
6. They left quietly this morning.
7. Furthermore, she always wins first prize.
8. He often finished late.
9. Consequently, we reached the station quickly.
10. You never speak loudly.
11. Otherwise, we would have gone to the beach yesterday.
12. They worked quickly today.
13. I want to analyze the book carefully sometime.
14. We sometimes arrive early.

## IV.

1. In
2. On
3. To
4. By
5. During
6. Among
7. For/on
8. On
9. With
10. With
11. To
12. In
13. For
14. With
15. Towards

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## HINDI

## पाठ - 6 <br> शाम एक किसान

1. शाम की तुलना किससे की गई है?
2. कवि का नाम क्या है?
3. किसने साफा बाँधा है?
4. किस वृक्ष के फूल आग की भाँति दहक रहे थे?
5. पूर्व में अंधेरा कैसा बैठा हुआ था?
6. किसान क्या उलट देता है?
7. सुनसान जंगल में कवि को किसकी आवाज़ सुनाई पढ़ी?
8. पहाड किसे चिलम की तरह पी रहा है?
9. पलाश के जंगल में किस रंग के फूल खिले थे?
10. पूर्व दिशा में कौन बैठा था?

$$
\begin{gathered}
\text { पाठ - } 7 \\
\text { अपूर्व अनुभव }
\end{gathered}
$$

1. लेखक का नाम लिखो।
2. यासुकी चान को अपने पेड़ पर चढ़ने का न्योता किसने दिया?
3. तोमोए क्या है?
4. किसे पोलियों हुआ था?
5. रॉकी कौन है?
6. बच्चे अपने पेड़ को क्या मानते थे?
7. यासुकी चान का घर कहाँ था?
8. किसके हाथ पैर कमज़ोर थे?
9. दूसरे बार तोता चान कैसी सीढ़ी लाई?
10. पेड़ पर चढ़कर यासुकी चान ने क्या देखा?

पाठ - 8

## रहीम के दोहे

I. एक वाक्य में उत्तर लिखो।

1. सच्चे मित्र कैसे होते है?
2. मछली को किससे मोह है?
3. कौन अपना फल नहीं खाता?
4. कौन अपना पानी नहीं पीता?
5. धनी पुरुष जब निर्धन बन जाते है तो वे क्या करते है?
6. रहीम के अनुसार हमारे देह को कैसा होना चाहिए?
7. सज्जन अपनी संपति किस कार्य के लिए उपयोग करते है?
8. जल किसको छोड़कर चला जाता है?
9. रहीम का पूरा नाम क्या है?
10. रहीम कैसे कवि थे?

## पाठ - 11

## नीलकंठ

1. लेखिका ने बड़े मिया से क्या पूछा?
2. मोर के बच्चे किसके समान थे?
3. पक्षी शावक जाली के गोल फ्रेम में कैसे लग रहे थे?
4. मोर के जोडे के कितने रुपये लिए?
5. बिल्ली का नाम क्या था?
6. कबूतर का नाम क्या था?
7. मोर का नाम नीलकंठ क्यों रखा गया?
8. कौन सभी जीव जंतुओं का सेनापति और संरक्षक बन गया।
9. जाली के अंदर किसने खरगोश पर आक्रमण किया?
10. नीलकंठ क्या खरगोश को बचा पाया?

## Science

## Lesson- 7

## Transportation in Plants and Animals

1. Which vessel carries oxygen rich blood?
2. What is pulse rate?
3. Which system removes waste from the body?
4. What is the fluid part of blood called?
5. What does human sweat contain?
6. Which veins carry oxygen rich blood?
7. What makes the blood look red?
8. What is normal resting pulse rate of human body?
9. What is the function of valves in veins?
10. What is function of xylem?
11. Why is heart known as the pumping organ of the human body?
12. What are the three main types of blood vessels?
13. State one function of the following:
a) Arteries
b) Veins
c) Capillaries
14. What are stomata? Give two functions of stomata.
15. Differentiate between arteries and veins.
16. Red blood cells, also called RBCs, have iron pigments known as
$\qquad$ .
17. White blood cells, or WBCs, defend the body against $\qquad$
18. Name the waste products formed in body.
19. What is osmoregulation?
20. Name the instrument used to measure blood pressure.

## Lesson-8

## Reproduction in Plants

1. Name the process by which parents produce the new individuals.
2. What are the vegetative parts of the plants?
3. Name the reproductive parts of the plant.
4. Name two types of flowers.
5. What is pollination?
6. Define fertilization.
7. What is an embryo?
8. Define fruit.
9. What is vegetative propagation?
10. What are the three parts of pistil?
11. Write some advantages of vegetative propagation.
12. How do fungi and fern plant reproduce to give rise a new plants?
13. What are benefits of seed dispersal and how the seeds are dispersed?
14. Differentiate between self pollination and cross pollination.
15. Draw a diagram to show a) self pollination b) cross pollination

## Lesson 11

## Light

## I. Name the following:-

1. The mirrors used as side mirrors in scooters?
2. The phenomenon that is involved in the formation of image of an object by a concave mirror.
3. Two type of lenses.
4. Image of the sun on a paper with the help of a concave mirror burn the paper

## II. Give Reasons

5. Concave mirror is known as a converging mirror.
6. We need a shiny surface for reflection
7. In ambulance words are written laterally inverted
8. Concave and convex mirrors called spherical mirrors
9. Convex mirror is used as a side mirror in a scooter
III. Fill in the blanks
10. $\qquad$ is used as the rear view mirror of vehicles.
11. The mirror which can form both real and virtual images in a $\qquad$
12. The image formed by a plane mirror is $\qquad$
13. An image formed by a device is erect, magnified and on the same side of the device with respect to the object. The device will have a $\qquad$
14. The device used for making peepholes in the doors of houses is a
IV. Match the following.
15. White light composed Translucent
16. Wax paper

Real image
17. Convex mirror

Thinner in the middle
18. Concave lens

Seven colours
19. Image obtained on screen

Reflecting surface is bulged out
V. Choose the correct answer.
20. A magnifying glass is a
(a) concave mirror
(b) convex mirror
(c) concave lens
(d) convex lens
21. Newton's disc appears white when it is
(a) kept in the dark
(b) seen in sunlight
(c) rotated
(d) shaken very fast
22. The path of the light is
(a) always a straight line
(b) a curved line
(c) a zig-zag line
(d) depends on the medium
23. Image formed by a plane mirror is
(a) virtual and erect
(b) real and erect
(c) virtual and inverted
(d) real and inverted

## VI. Draw and Label.

24. Draw a neat labelled diagram of a convex and concave mirror
25. Draw a neat labelled diagram of concave and convex lens

## VII. Short Answer.

26. Briefly state the characteristics of image formed by a plane mirror.
27. Mention any two letters of English alphabet whose image formed in a plane mirror appears exactly similar to the letters.
28. Write the uses of convex mirror.

## VIII. Long Answer

29. Write the uses of concave mirror.
30. State the differences between a convex and a concave lens.

## CIVICS

## Chapter 6

## Advertising

Glossary

1. Logo $=$ symbol used by a company or organisation as its special sign
2. $\quad$ Muscot $=$ animal or toy that represents an organisation
3. $\quad$ Brand = type of product made by a particular company
4. Multimedia $=u s i n g$ sound, pictures and film in addition to text
5. $\quad$ Bandwagon $=$ joining others in doing something that is becoming fashionable
II. Answer the following
6. What is advertising? What does it seeks to convey?
7. What are the stages involved in guerrilla promotions?
8. Political advertising?
9. Why should there be regulation on advertising?
10. What is commercial advertising? Write the media through which it is done.
11. What is social advertising? What kind of messages does it advertise?
12. What are the objectives of advertising?
13. What are the seven techniques used by advertisers to attract customers?
14. The Right to Information act 2005 has made it mandatory for all packaged commodities to mention the following (1) Date of manufacture (2) Date of expiry. How do you think it will help the customers?

## HISTORY

## Chapter 3

## The Sultanate Period

1. The name of the period from 1206 to 1526 [ 320 years] in the history of India.
2. The capital of the Sultan [a ruler in a muslim country].
3. Two names of Slave dynasty.
4. The arabic word 'mamluk' means
5. The first ruler of the Slave [Ilbari Tusks] dynasty.
6. The general who were given charge of India when Muhammad Ghori left India.
7. One word for 'series of rulers belongking to the same family.'
8. One word for 'person who is legally owned by and forced to work for another.'
9. Native (of the place of sby's birth) country of Slave, Khalji, Tughluq, and Sayyid dynasty Sultans.
10. Which Sultan is known 'Lakh Baksh' or 'giver of lakhs'
11. The real founder of the Delhi Sultanate.
12. The woman who sat on the throne of Delhi Sultanate in the thriteenth century.
13. The slave sultan who was a puppet in the hands of powerful nobles.
14. The most powerful ruler of the Slave (Ilbari Turks) dynasty.
15. The two persian customes introduced by Balban.
16. The first ruler of the Khalji dynasty.
17. The real name of Alauddin Khalji.
18. The most powerful ruler of the Khalji dyansty.
19. The trusted general of Alauddin Khalji who was sent to conquer south Indian kingdoms.
20. The most important source of revenue to Alauddin.
21. The fertle land between two rivers.
22. The last Khalji Sultan.
23. The first ruler of Tugluq dyansty.
24. The real name of Muhammad bin Tughluq.
25. The traveller who wrote about Muhammad bin Tughluq.
26. Where did Muhammad bin Tugluq shifted his capital from Delhi?
27. Scholars of Islamic learning.
28. The powerful regional kingdoms arose after Muhammad bin Tughluq's reign.
29. The land given to officers of the kingdom.
30. The central asian who conquered India after Firoz Tughluq.
31. Who was the deputy of Timur in India?
32. Who founded Firozabad?
33. The Supreme authority of muslims.
34. Two persian customs to acknowledge the supremacy of the Sultan.
35. The finance department of the Delhi Sultanate.
36. The Prime Minister of Delhi Sultanate.
37. The Chief Judge of the Delhi Sultanate.
38. The first ruler of the Sayyid dynasty.
39. The native country (of the place of somebody's birth) of the Sultans of Lodi dynasty.
40. The first Lodi ruler.
41. The most powerful Lodi ruler.
42. Who founded the city of Agra.
43. Who defeated Ibrahim Lodi in the first battle of Panipat in 1526.
44. Who was Raziya Sultan? Why did the nobles oppose Raziya?
45. Name the two Persian customs introduced by Balban. Why were people against these customs?
46. What were "dagh" and "chehra"? Who introduced them?
47. Write two reasons that prompted Muhammad bin Tughluq to shift the capital Daulatabad?
48. Give two reasons to show that the court of the Delhi Sultan was a "ceremonial" court.
49. Explain the importance of literary sources for the Sultanate Period. Which other sources tell us about this period?
50. Who succeeded Qutbuddin Aibak? Why is that person called the real founder of the Sultanate?
51. Why did Alauddin Khalji introduce the market control policy? How did he enforce it?
52. "Muhammad bin Tugluq's schemes were well conceived but poorly executed." Discuss this statement with reference to his token currency statement.
53. According to Ziauddin Barani, "none of the officers could take bribes, and had been reduced to such a position by hardships, imprisonment for long periods or torture for small outstanding dues that people considered these posts to be worse than fever...."
a) What ruler of the Sulanate Period is being referred to in the above paragraph?
b) Why did this ruler introduce such measures?
c) Write the observation made by Barani in your own words.
54. How did issuing coins in the name of the Caliph help Muhammad bin Tughluq to rule?
55. Accounts of travellers and court chroniclers have been used to reconstruct the history of this period. Which of the two do you think would give a more accurate presentation and why?
56. Which are the market control policies of Alauddin Khalji?
57. Which are the reforms of Firoz Shah Tughluq?

## Chapter 5

Great Mughals

## GLOSSARY

1. Cavalry $=$ soldiers who fight on horseback
2. $\quad$ Regent $=$ person who rules on behalf of the king
3. Pilgrim tax $=$ Tax paid for taking bath at holy places, such as Banaras( Varanasi)
4. $\quad$ Jaziya $=$ Tax paid by the non- Muslims
5. Kurnish $=$ custom of placing the right hand upon the forehead and bending the head downwards.
6. Taslim = to place the back of the right hand on the floor and then raise it gently till the person stands erect.
7. Indigo $=$ Deep blue dye
8. Saltpetre= white powder normally used to preserve food or to make matchsticks
9. Jagir $=$ land given to the officers of the kingdom ( Iqta) Answer the following.
10. What has Babur described in Baburnama [Tuzuki baburi], the autobiography of Babur?
11. Write the three problems that Emperor Humayun faced when he ascended the throne?
12. How did Sher Shah encourage trade ?
13. Write the three steps taken by Akbar the Great to gain the loyalty (quality of being faithful to somebody) of Rajputs?
14. Emperor Jahangir continued with Emperor Akbar's policy of tolerance (allow sby to do sth that you disagree or dislike) - justify the statement.
15. How did Babur secure his position in India?
16. Write the military campaigns (series for military operations in a war) of Shah Jahan.
17. Write about the Central and Provincial administration of Mughals.
18. Why did Raja Todarmal introduce a new measuring device for land measurement? What was that measuring device?
19. Write a short note on Din-i-Ilahi [Divine Monotheism] [Religion of One God]
20. Write a short note on Zat \& Sawar
21. When Humayun died 1556, Akbar was in Punjab. Humayun's death was kept secret for 17 days, until Akbar could reach Delhi. During this time a courtier, dressed in a royal robe appeared at the window to show himself to the people. Why was it important to keep the news of Humayun's death a secret till Akbar could reach Delhi?
22. "My father was always associated with the learned of of every creed and religion especially with the Pandits and the learned of India, and although he was illiterate( unable to read and write)... from his conversations (talk involving a small group of people) with the learned and the wise, no one could take him to be illiterate."
i) Which Mughal Emperor is being referred to in the above paragraph?
ii) What did this Mughal emperor did to further his interest in learning about different religions?
iii) What was the religious path suggested by this Mughal emperor?

## Geography

## Lesson 4

## Major Landforms

## I. Fill ups.

1. Removal of rocks from one place to another is $\qquad$
2. Place where the river originates is called $\qquad$
3. The area drained by river and its tributaries is $\qquad$
4. Highest waterfalls in India is $\qquad$
5. Steep sloping segment of the swift flowing river is called $\qquad$
6. Largest delta in the world is $\qquad$
7. Pillars of rock left standing in the open water $\qquad$
8. Valley formed by glacier is $\qquad$
9. $\qquad$ and $\qquad$ are features of wind deposition.
10. $\qquad$ are formed due to wind erosion.

## II. Name the agents

1. Moraine
2. Sea Cave
3. Delta
4. U shaped valley
5. Flood plain
6. Loexs
7. Stack
8. Beach
III. Write one word for:-
9. Breaking down of rocks -
10. Valley formed by river -
11. Bends and looped made by river -
12. Fertile plain made by river
13. Triangular shaped land formed by river -
14. Partially enclosed lake -
15. Lake made by glacier -
16. An armchair depression mae by glacier -
17. Fine dust particles deposited by wind -
18. Hills of sand -

## IV. Answer the following:-

1. What are erosional landforms made by sea waves?
2. What are the works of a river?
3. Explain the erosional work of glacier.

## Mathematics

## Lesson - 4

## Simple Equations

I. Write the equation for the following statements.

1. 7 added to thrice a number is 22 .
2. 5 times a number subtracted from 8 is -17 .
3. Anju's mother's age is 10 years more than 3 times her age. Mother is 37 years old now.
4. Two-fifth of a number is 4 less than 10 .
5. Twice the number added to 3 and the sum is divided by 3 gives 7 .
II. Solve the following equations.
1) $\mathrm{x}+7=-2$
2) $11-y=-8$
3) $3 x=-18$
4) $\frac{y}{2}=4$
5) $\frac{-a}{3}=-8$
6) $\frac{x+2}{3}=4$
7) $3 x-5=0$
8) $6 x-3=9$
9) $3 x-\frac{1}{3}=\frac{1}{5}$
10) $2(y+5)=-10$
11) $-3(5+\mathrm{x})=9$
12) $-4(3-x)=-8$
13. $7(5-x)=21$
14. $-5(-x-2)=-20$
III. Solve
1) $4 x+7=-21$
2) $3+(x-5)=10$
3) $5-(y+2)=13$
4) $2-3(x-7)=20$
5) $7+(5-y)=-12$
6) $3+4(2-y)=20$
7) $4+(2-x)=8$
8) $5-\frac{2 b}{3}=3$
9) $-13=5+3(\mathrm{~m}-2)$
10) $7=-5-4(3-a)$

## IV. Form the equation and solve it.

1. 7 added to thrice the number is 28 . Find the number.
2. A number subtracted from 13 is 29 . Find the number.
3. 6 taken away from double of a number is 32 . Find the number.
4. The number of notebooks is 5 more than 3 times the textbooks. If there are 23 notebooks, how many text books are there?
5. Anila's father is 7 years less than 5 times of her age. If father's age is 38, find Anila's age.

## Lesson-6

## Triangle and its Porperties

1. A triangle has ........ medians.
2. A triangle whose no two sides are equal is known as ..........
3. A triangle whose one angle is more than $90^{\circ}$ is known as
4. The base and altitude of a right angled triangle are 8 cm and 15 cm , then hypotenuse is $\qquad$
5. The mesure of greatest angle of a right angled triangle is $\qquad$
6. Two angles of a triangle are of measures $75^{\circ}$ and $35^{\circ}$ find the measure of third angle.
7. One angle of a triangle is $80^{\circ}$, other two angles are equal. Find the measure of equal angles.
8. One of the acute angles of a right triangle is $58^{\circ}$ find other acute angle.
9. Two acute angles of a right triangle are equal. Find their measure.
10. The 3 angles of a triangle are $(x-40)^{\circ}(x-20)^{\circ}$ and $\left(\frac{x}{2}-10\right)^{\circ}$, find the measure of x and measure of each angle.
11. Check whether the following measure of angles can be the angles of a triangle or not, justify your answer.
a) $63^{\circ}, 37^{\circ}, 80^{\circ}$
a) $30^{\circ}, 20^{\circ}, 130^{\circ}$
b) $59^{\circ}, 75^{\circ}, 60^{\circ}$
c) $40^{\circ}, 62^{\circ}, 70^{\circ}$
12. The angles of a triangle are in the ratio $3: 4: 5$, find the smallest angle.
13. If 3 angles of a triangle are in the ratio $2: 3: 4$, find the measure of each angle.
14. The angles of a triangle are in the ratio $4: 5: 6$, find the measure of greatest angle.
15. Check whether the following lengths can be the lengths of the sides of a triangle.
a) $7 \mathrm{~cm}, 3 \mathrm{~cm}, 4 \mathrm{~cm}$
b) $8 \mathrm{~cm}, 4 \mathrm{~cm}, 10 \mathrm{~cm}$
c) $5 \mathrm{~cm}, 3 \mathrm{~cm}, 9 \mathrm{~cm}$
16. Check whether the following are the sides of a right angles triangle or not.
a) $10 \mathrm{~cm}, 24 \mathrm{~cm}, 26 \mathrm{~cm}$
b) $\quad 6 \mathrm{~cm}, 8 \mathrm{~cm}, 12 \mathrm{~cm}$
c) $8 \mathrm{~cm}, 15 \mathrm{~cm}, 17 \mathrm{~cm}$
d) $9 \mathrm{~cm}, 16 \mathrm{~cm}, 18 \mathrm{~cm}$
e) $7 \mathrm{~cm}, 24 \mathrm{~cm}, 25 \mathrm{~cm}$
17. $\triangle \mathrm{ABC}$ right angles at $\mathrm{C} . \mathrm{AB}=26 \mathrm{~cm}, \mathrm{BC}=10 \mathrm{~cm}$, find AC .
18. $\triangle \mathrm{PQR}$ is right angles at $\mathrm{P} . \mathrm{PQ}=12 \mathrm{~cm}$ and $\mathrm{PR}=5 \mathrm{~cm}$ find QR .
19. The length of 2 sides of a triangle are 9 cm and 14 cm . Between which measures the length of third side will fall?
20. The length of a rectangle is 20 cm and its diagonal is 25 cm . Find breadth and area of rectangle.
21. The diagonal of a rectangle is 37 cm breadth is 12 cm . Find perimeter of rectangle.
22. The diagonals of a rhombus are 24 cm and 10 cm . Find perimeter of rhombus.
23. The diagonals of a rhombus are 30 cm and 16 cm . Find the measure of length of each side of the rhombus and its perimeter.
24. Find $\mathrm{x}, \mathrm{y}, \mathrm{z}$ in the following.

b)

c)

d)


f)



i)

j)
XY || BC
k)

1) 


m)

n)

o)

25. Find the unknown length of sides of the following triangles.
a)

b)

x
c)

15
d)

15
e)

26. Find unknown angles in the following.
a)

b)


## Lesson - 8

Rational Numbers

1. ......... is the multiplicative identity for rational numbers.
2. The numbers $\qquad$ and $\qquad$ have their own reciprocals.
3. The reciprocal of -5 is $\qquad$
4. The additive inverse of $\frac{7}{5}$ is $\qquad$
5. What should be added to $\frac{7}{12}$ to get $\frac{4}{15}$ ?
6. What should be subtracted from $\left(\frac{-3}{5}\right)$ to get ( -2 ).
7. Which of the rational numbers $\frac{-11}{28}, \frac{-5}{7}, \frac{9}{-14}, \frac{29}{-42}$ is the greatest?
8. Which is the rational number lies between $\frac{3}{5}$ and $\frac{4}{5}$

$$
\left(\frac{7}{5}, \frac{7}{10}, \frac{3}{10}, \frac{4}{10}\right)
$$

9. Find x in the following
a) $\frac{-1}{5}=\frac{8}{x}$
b) $\frac{7}{-3}=\frac{x}{6}$
c) $\frac{13}{6}=\frac{-65}{x}$
d) $\frac{16}{x}=4$
e) $\frac{-48}{x}=2$
10. The product of a rational number and its multiplication inverse is
11. The equivalent rational number of $\frac{-6}{5}$ is
$\left(\frac{-3}{5}, \frac{12}{10}, \frac{-12}{10}\right.$, none of these $)$
12. Write the simplest form of
a) $\frac{-18}{48}$
b) $\frac{24}{-72}$
c) $\frac{44}{-72}$
d) $\frac{39}{-91}$
e) $\frac{-42}{56}$
13. Fill in the blanks.
a) $\frac{5}{4}=\frac{\ldots \ldots}{-16}=\frac{25}{\ldots . .}=\frac{-15}{\ldots . .}$
b) $\frac{-3}{7}=\frac{\ldots . .}{14}=\frac{9}{\ldots . . .}=\frac{-6}{\ldots . .}$
c) $\frac{9}{-94}=\frac{\ldots \ldots . .}{16}=\frac{-15}{\ldots . .}=\frac{\ldots . .}{-32}$
14. Write the additive inverse of
a) $\frac{-3}{9}$
b) $\frac{-9}{11}$
c) $\frac{5}{7}$
d) $\frac{2}{3}+\left(\frac{-4}{9}\right)$
15. Write the reciprocal of
a) $\frac{-6}{11}$
b) $\frac{8}{-5}$
c) $\frac{4}{9} \times \frac{-18}{25}$
d) $\frac{-3}{8}+\frac{7}{10}$
16. Find the following.
a) $\frac{5}{4}+\frac{-11}{7}$
b) $\frac{-8}{19}+\frac{-2}{57}$
c) $-2 \frac{1}{3}+4 \frac{3}{5}$
d) $\frac{-9}{10}+\frac{22}{15}$
e) $\frac{7}{24}-\frac{17}{36}$
f) $\frac{5}{63}-\left(\frac{-6}{21}\right)$
g) $\frac{-6}{13}-\left(\frac{-7}{39}\right)$
h) $\frac{16}{28} \times \frac{-7}{4}$
i) $\frac{-66}{45}+\frac{9}{11}$
j) $\frac{3}{7} \times \frac{-2}{5}$
k) $\frac{-3}{5} \div 2$
1) $\left(\frac{-4}{5}\right) \div(-3)$
m) $\frac{-1}{8} \div \frac{3}{4}$
n) $\frac{-2}{13} \div \frac{-1}{26}$
o) $\frac{-7}{12} \div \frac{14}{-24}$
17. Multiply $\frac{6}{13}$ by the reciprocal of $\frac{-7}{16}$
18. What number should be added to $\frac{7}{12}$ to get $\frac{-4}{15}$
19. What number should be subtracted from $\frac{-3}{5}$ to get $\frac{4}{10}$ ?
20. Represent the following on the number line.
a) $\frac{-3}{4}, \frac{-1}{4}, \frac{2}{4}, \frac{5}{4}$
b) $\frac{-6}{7}, \frac{-3}{7}, \frac{0}{7}, \frac{1}{7}, \frac{4}{7}$
21. A rational number $\frac{6}{7}$ is subtracted from $\frac{13}{21}$. Then the result added to additive inverse of $\frac{-11}{14}$, what is the reciprocal of the final sum?
22. The product of two rational numers is $\frac{-4}{5}$. If one of them is $\frac{8}{35}$, find the other.
23. Find additive inverse and reciprocal of $\left[\frac{-7}{26}+\frac{-11}{39}\right]$
24. Which is greater $-3 \frac{2}{7}$ or $-3 \frac{4}{5}$
25. Arrange $\frac{-7}{8}, \frac{-5}{6}, \frac{-3}{4}$ in descending order.
26. If $\frac{x}{2}+\frac{1}{3}=1$, find $x$.
27. Divide the sum of $\frac{-13}{5}$ and $\frac{12}{7}$ by the product of $\frac{-31}{7}$ and $\frac{-1}{2}$
28. Divide the sum of $\frac{65}{12}$ and $\frac{8}{3}$ by their difference.
29. By what number should we multiply $\frac{-1}{6}$. So that the product may be $\frac{-23}{9}$.
30. By what number should $\frac{-33}{16}$ be divided to get $\frac{-11}{4}$

## Lesson - 11

## Exponents and Powers

1. The value of $3^{0}$ is $\qquad$
2. $\mathrm{a}^{\mathrm{m}} \div \mathrm{a}^{\mathrm{n}}=\mathrm{a}^{-}$
3. $\left(3^{0}+4^{0}+5^{0}\right)^{0}=$ $\qquad$
4. $\left(7^{0}+2^{0}\right) \times 3^{0}=$ $\qquad$
5. $(-3)^{4} \times(-3)^{3}=$ $\qquad$
6. The standard form of 2156000 is $\qquad$
7. The value of $(-1)^{19}$ is $\qquad$
8. $(-1)^{25} \times(-1)^{12}=$ $\qquad$
9. $(-1)^{37}+(-1)^{26}=$ $\qquad$
10. The exponential form of 64 with base 2 is $\qquad$
11. What power of 2 is 128 ?
12. Express 729 as a power of 3 .
13. Express as the product of powers of prime factors
a) 12800
b) 432
c) 648
d) 540
14. The standard form of 14500000 is $\qquad$
15. Write the standard numeral for
a) $3 \times 10^{7}+9 \times 10^{4}+7 \times 10^{3}+4 \times 10^{2}+9 \times 10^{1}+6 \times 10^{0}$
b) $8 \times 10^{5}+2 \times 10^{2}+5 \times 10^{1}$
c) $8 \times 10^{6}+3 \times 10^{5}+7 \times 10^{2}+4 \times 10^{1}$
16. Write the expanded form of
a) 89205
b) 3400853
c) 150094780
17. Express the following in exponential form.
a) 432
b) 10125
c) 2401
d) 10584
e) 1600
f) 2916
g) 36504
h) 30375
18. Simplify and express in exponential form.
a) $\left(3^{4} \times 3^{2}\right) \div 3^{3}$
b) $\left(4^{2} \times 2^{3}\right) \div 2^{4}$
c) $\left(5^{8} \times 5^{4}\right) \div\left(5^{5} \times 5^{7}\right)$
d) $\left(10^{3} \times 4^{4}\right) \div\left(2^{3} \times 5^{2}\right)$
e) $\frac{36 \times 4^{2} \times 5^{3}}{216 \times 25 \times 8}$
f) $\frac{10^{2} \times 625 \times 3^{3}}{6^{2} \times 3125}$
g) $\frac{4^{3} \times 343 \times 18^{2}}{(28)^{2} \times(36)^{2}}$
h) $\frac{(49)^{2} \times 5^{3} \times 18}{(10)^{3} \times 343 \times 3^{2}}$
i) $\frac{3^{2} \times 7^{8} \times 13^{6}}{21^{2} \times 91^{3}}$
j) $\frac{144 \times 5^{2} \times 10^{2}}{256 \times 125}$
k) $\frac{16^{7} \times 25^{5} \times 81^{3}}{15^{7} \times 24^{5} \times 80^{3}}$
1) $\frac{25^{2} \times x^{10} y^{5}}{5^{4} \times x^{7} y^{4}}$
m) $\frac{9^{8}\left(x^{2}\right)^{5} y^{3}}{27^{3}\left(x^{3}\right)^{2} y^{2}}$
n) $\frac{4^{6} \times\left(a^{8}\right)^{2} \times\left(b^{3}\right)^{3}}{2^{10} \times\left(a^{6}\right)^{2}\left(b^{4}\right)^{2}}$
o) $\frac{(3 a)^{5} \times(4 b)^{3}}{81 a^{4} \times 32 b^{2}}$
p) $\frac{3^{5} \times 10^{5} \times 25}{5^{7} \times 6^{5}}$
19. Using exponents, simplify and write the answer in exponential form:
a) $\left(2^{5} \times 2^{3}\right) \times 4^{2}$
b) $16 \times 4^{3} \times 2^{2}$
c) $\left(2^{20} \div 2^{15}\right) \times 2^{3}$
d) $\left.\left[\left(7^{2}\right)^{3} \div 7^{3}\right)\right] \times 7^{2}$
e) $\left[\left(5^{2}\right)^{3} \times 5^{4}\right] \div 5^{7}$
f) $\left(\frac{3^{7}}{3^{8}}\right) \times\left[3^{5} \times\left(3^{2}\right)^{2}\right]$
g) $\left(8^{2}\right)^{3} \div\left(2^{3}\right)^{4}$
h) $\left(2^{55} \times 2^{60}\right)-\left(2^{97} \times 2^{18}\right)$
i) $\left[\left(2^{3}\right)^{4} \times 2^{8}\right] \div 2^{12}$
j) $\left[\left(3^{17}\right)^{3} \times\left(3^{3}\right)^{3}\right]-\left[\left(3^{3}\right)^{5} \times\left(3^{15}\right)^{3}\right]$
20. Write the following in standard form.
a) 270659
b) 427500000
c) 6830000000
21. Write the following in usual form.
a) $6.28 \times 10^{6}$
b) $8.235 \times 10^{11}$
c) $9.2 \times 10^{8}$
d) $7.023 \times 10^{9}$

## Lesson-12

## Algebraic Expressions

1. Identify the monomials, binomials, trinomials from the following.
a) $x^{2}-1$
b) $4 x^{2}$
c) $x^{2}-y^{2}$
d) $3 x^{2}+4 y^{2}-5 z$
e) $a x^{2}+b x+c$
f) $a^{2}+b^{2}-c^{2}$
g) $3 a b^{2}$
h) $-x+2 y$
i) $3 a^{2} b c$
j) $4 x-3 x$
k) $3 x-2$
1) $-x y z$
2. Write all the terms and numerical coefficient of each term of the following.
a) $3 x^{5}+5 y^{4}-7 x^{2} y+7$
b) $9 y^{3}-2 x^{3}+7 x^{2} y z-3 x y z$
c) $a^{5}-3 a b-b^{2}+6$
d) $x^{2}-x+1$
e) $x^{2}-7 x^{2} y+5 x y^{2}-2$
3. Identify like terms in the following
a) $\mathrm{x}^{2}, \mathrm{y}^{2} \mathrm{x}^{2},-3 \mathrm{x}^{2}, \mathrm{z}^{2} \mathrm{x}$
b) $2 \mathrm{xy}, \mathrm{yz}, 3 \mathrm{x}, \frac{\mathrm{yz}}{2}$
c) $-2 x^{2} y, x^{2} z,-y x^{2}, x^{2} y^{2}$
d) $4 x y,-5 x^{2} y,-3 y x, 2 x y^{2}$
e) $7 \mathrm{a}^{2} \mathrm{bc},-3 \mathrm{ca}^{2} \mathrm{~b},-\frac{5}{2} \mathrm{abc}^{2}, \frac{3}{2} \mathrm{c}^{2} \mathrm{ab},-\frac{4}{3} \mathrm{cba}^{2}$
4. Add the following.
a) $4 x y, 12 x y, 3 x y$
b) $3 a^{2} b, 2 a^{2} b, 13 a^{2} b, a^{2} b$
c) $-7 x y,-3 x y,-9 x y$,
d) $4 x^{2} y, 8 x^{2} y,-2 x^{2} y$
e) $4 a b,-7 a b,-10 a b, 3 a b$
f) $3 x+2 y, x+y, x+y+3,3 x+2 y+5$
g) $2 \mathrm{x}+3 \mathrm{y}-\mathrm{z}, 2 \mathrm{x}-\mathrm{y}-\mathrm{z}, 2 \mathrm{y}-3 \mathrm{z}, 4 \mathrm{x}-3 \mathrm{y}$
h) $5 x^{2}+7 y-6 z^{2}, 4 y+3 x^{2}, 9 x^{2}+2 z^{2}-9 y, 2 y-2 x^{2}$
i) $5 x^{3}+7+6 x-5 x^{2}, 2 x^{2}-8-9 x, 4 x-2 x^{2}+3 x^{3}, 3 x^{3}-9 x-x^{2}$ and $x-x^{2}-x^{3}-4$
j) $a^{3}+b^{3}-3,2 a^{3}-3 b^{3}-3 a b+7,-a^{3}+b^{3}+3 a b-9$
5. Subtract
a) $5 x$ from $9 x$
b) $-7 x$ from $6 x$
c) -8 a from -3 a
d) $a^{2}-3 a b$ from $2 a^{2}-7 a b$
e) $-2 x$ from $-5 y$
f) $7 a^{2} b$ from $3 a^{2} b$
g) $x^{2}-3 x y+7 y^{2}-2$ from $6 x y-4 x^{2}-y^{2}+5$
h) $6 x^{3}-7 x^{2}+5 x-3$ from $4-5 x+6 x^{2}+8 x^{3}$
i) $x^{3}+2 x^{2} y+6 x y^{2}-y^{3}$ from $y^{3}-3 x y^{2}-4 x^{2} y$
j) $x^{2}-2 x y+3 y^{2}$ from $2 x^{2}-3 y^{2}+x y$
6. Add $x^{2}+2 x y+y^{2}$ to the sum of $x^{2}-3 y^{2}$ and $2 x^{2}-y^{2}+9$.
7. Add $a^{3}+b^{3}-3$ to the sum of $2 a^{3}-3 b^{3}-3 a b+7$ and $-a^{3}+b^{3}+3 a b-9$.
8. From the sum of $-3 x^{3}+6 x^{2}, 4 x^{3}+4 x-3$ and $-5 x^{2}+2 x$ subtract $-7 x^{3}-3 x+4$
9. From the sum of $3 x^{2}-5 x+2$ and $-5 x^{2}-8 x+9$ subtract $4 x^{2}-7 x+9$.
10. Subtract the sum of $13 x-4 y+7 z$ and $-6 z+6 x+3 y$ from the sum of $6 x-4 y-4 z$ and $2 x+4 y-7$
11. From the sum of $x^{2}+3 y^{2}-6 x y, 2 x^{2}-y^{2}+8 x y$ and $y^{2}+8$ subtract the sum of $3 x y-x^{2}$ and $-3 x^{2}+4 y^{2}-x y+x-y+3$
12. What should be added to $a^{2}+2 a b+b^{2}$ to obtain $4 a b+b^{2}$.
13. How much is $x^{3}-2 x^{2}+x+4$ greater than $2 x^{3}+7 x^{2}-5 x+6$ ?
14. How much is $2 a^{2}-7 a+5$ less than $-3 a^{2}+2 a-3$ ?
15. What should be subtracted from $a^{3}-4 a^{2}+5 a-6$ to obtain $a^{2}-2 a+1$ ?
16. How much does $2 a 2-5 a+4$ exceed $3 a^{3}-5 a^{2}+7 a-9$ ?
17. Find the value of the following expressions when $x=1, y=-2$
a) $2 x+3$
b) $3 x-5 y$
c) $-y^{2}+3-x$
d) $3 x+2 y-7$
e) $4 x^{3}+2 y^{3}-9$
18. Simplify and then find the value.
a) $-6 \mathrm{a}^{2} \mathrm{~b}+7 \mathrm{ab}-3 \mathrm{a}+3 \mathrm{ab}+5 \mathrm{ba}^{2}-4 \mathrm{ab}$ when $\mathrm{a}=-1, \mathrm{~b}=2$
b) $x^{2} y-4 x+3 y-8 x-4 y+2 y^{2}-8 y$ when $x=1, y=-2$

## Lesson-5

## Lines and Angles

1. Find the complement of each of the following
a) $60^{\circ}$
b) $72^{\circ}$
c) $25^{\circ}$
d) $45^{\circ}$
2. Find the supplement of each of the following.
a) $38^{\circ}$
b) $127^{\circ}$
c) $64^{\circ}$
d) $90^{\circ}$
3. Find the angle which is double of its supplement.
4. Find the angle which is half of its complement.
5. Answer the following from the adjoining figure.
a) a pair of vertically opposite angle.
b) a pair of adjacent angles.
c) adjacent obtuse angle of $\angle \mathrm{AOE}$.
d) a pair of adjacent supplementary angle.

6. Find $x, y$ in the following.
a)

b)

c)

d)

7. In the following figures $l \| \mathrm{m}$ and t be a transversal. Find the value of x , y and $z$.

ii) Find $x, y, z$ and $a, b, c$ if $t$ and $s$ are transversal.

8. In the following figure line $l$ through the vertex A of $\triangle \mathrm{ABC}$ is parallel to side BC , if $\angle \mathrm{ABC}=65^{\circ}$ and $\angle \mathrm{ACB}=45^{\circ}$ find x and y .

9. In the following figure $\mathrm{AO} \| \mathrm{CD}$ and $\mathrm{OB} \| \mathrm{CE}$ and $\angle \mathrm{AOB}=50^{\circ}$ find $\angle \mathrm{BDC}$ and $\angle \mathrm{DCE}=?$
10. In the given figure $\mathrm{AB} \| \mathrm{CD}$ and $\angle \mathrm{ABE}=120^{\circ}$,
 $\angle \mathrm{ECD}=100^{\circ}$ find $\angle \mathrm{BEC}$ ?
[Hint: Draw FG
parallel to AB and CD ]
11. In the following figure $A B \| C D$.

$\angle \mathrm{BAE}=125^{\circ}$ and $\angle \mathrm{BAC}=\angle \mathrm{ABD}=\mathrm{x}^{\circ}$. Find $\mathrm{x}, \mathrm{y}, \mathrm{z}$.

12. In each of the following figures, two lines $l$ and $m$ are cut by a traversal t . Find whether $l \| \mathrm{m}$.
a)

b)

c)

d)

