PRAYAG PUBLIC SCHOOL
SUMMER VACATION HOLIDAY (2025-26)
Class -12 (PCB+PCM)
Chemistry – Practice Sheet

Chapter 10: Haloalkanes and Haloarenes

(CBSE Board Exam-Based + PYQs + Reasoning Questions)
Section A: Objective / Very Short Answer Questions (1 mark each)
1. Write the IUPAC name of $CH_3CH(Cl)CH_3$. (PYQ)
2. Name the product formed when methyl bromide reacts with alcoholic KOH.
3. Write the formula of a compound used in refrigeration (freon).
4. What is the hybridisation of carbon in the C–Cl bond of chlorobenzene?
5. Write one use of DDT.
6. Identify A in the reaction: $C_2H_5OH + SOCl_2 \rightarrow A + SO_2 + HCl$
7. Arrange the following in increasing order of reactivity towards SN2: CH_3Cl, CH_3CH_2Cl, $(CH_3)_3CCl$
8. Write a chemical test to distinguish between chlorobenzene and benzyl chloride. (PYQ)
9. Name the reaction: $C_6H_5Br + 2Na + C_6H_5Br \rightarrow C_6H_5–C_6H_5 + 2NaBr$
10. Which is more reactive towards nucleophilic substitution: CH_3Cl or C_6H_5Cl? Give reason.

Section B: Short Answer Questions – I (2 marks each)
1. What happens when chloroethane is treated with aqueous KOH? Give the equation.
2. Write the structure and IUPAC name of the major product formed when 2-bromopentane reacts with alcoholic KOH. (PYQ)
3. Why is the C–Cl bond in chlorobenzene shorter than that in alkyl chlorides? (Reasoning)
4. How can you convert: (a) Aniline to iodobenzene (b) Ethanol to bromoethane
5. Explain why hydrolysis of tertiary alkyl halides occurs faster than that of primary alkyl halides. (PYQ, Reasoning)

Section C: Short Answer Questions – II (3 marks each)
1. Give reasons: (a) Vinyl chloride is unreactive towards nucleophilic substitution. (b) Chlorobenzene is less reactive than benzyl chloride. (c) Tertiary halides prefer SN1 mechanism. (Reasoning)
2. What happens when: (a) Chlorobenzene is treated with NaOH at 623K and 300 atm. (b) Ethyl chloride is treated with $AgNO_2$. (c) Bromomethane is treated with KCN.
3. Write the mechanism of the SN1 reaction: $(CH_3)_3CBr + OH^- \rightarrow (CH_3)_3COH + Br^-$
4. Write the equations for the preparation of: (a) Chlorobenzene from benzene (b) Iodoform from ethanol (c) Benzyl alcohol from benzyl chloride
5. Explain the following named reactions: (a) Wurtz reaction (b) Finkelstein reaction (Reasoning: Why in acetone?) (c) Sandmeyer reaction

Section D: Long Answer Questions (5 marks each)
1. (a) What are ambident nucleophiles? Explain with examples. (b) Explain how alkyl halides are converted into alkanes, alkenes, and alcohols. (PYQ)
2. (a) Write equations to convert: (i) Bromoethane to ethyl isocyanide (ii) Benzene to chlorobenzene (iii) Ethanol to iodoethane (b) Why do aryl halides not undergo SN1 or SN2 reactions? (Reasoning)
3. Give a comparison of SN1 and SN2 reactions based on: (a) Substrate (b) Nucleophile (c) Solvent (d) Stereochemistry (e) Rate-determining step (PYQ)
4. Explain the following reactions with mechanisms: (a) Reaction of methyl bromide with aqueous KOH (b) Reaction of bromoethane with KCN (c) Reaction of iodobenzene with copper powder
5. (a) Explain the nature of C–X bond in haloalkanes and haloarenes. (Reasoning) (b) Explain why aryl halides are less reactive towards nucleophilic substitution. (c) How is DDT prepared?

Section E: Mixed Conceptual & Application-Based Questions (2–3 marks each)
1. Describe a method to prepare chlorobenzene in the laboratory.
2. What happens when chlorobenzene is treated with methyl chloride and anhydrous $AlCl_3$? Name the reaction. (PYQ)
3. How will you distinguish between ethyl bromide and vinyl bromide chemically? (Reasoning)
4. Explain the nature and effect of the –I and +M effects in haloarenes. (Reasoning)
5. How can you prepare the following: (a) p-Dichlorobenzene from aniline (b) 2-Bromopropane from propanol (c) Nitrobenzene from chlorobenzene

Physical Education

Q-1. Sakshi is a very intelligent girl. She always got 1st position in her class. But at the same time, she has the tendency to disrupt people around her. She often argues with her parents and struggles to control her anger. She also faces difficulty in making friends.

Based on the above case, answer the following questions.

1). From which disorder Sakshi is suffering?

A) OCD B) ODD C) ASD. D) SPD

2). What is the full form of ODD?

A) Oppositional Defiant Disorder. B) Obsessive Defiant Disorder

C) Opposition Defiant Disability. D) Offensive Defiant Disorder

3). Which of the following can be the cause of ODD?

A) Genetic factors. B) Social factors. C) Psychological factors. D) All of these

Q-2. ABC International School is going to organize Annual Sports Day. Mr. Rohit Kumar Yadav, the sports teacher, has taken the responsibility to organize a sports event so that he has to form all committees who work Pre, During and Post competition. Based on this case answer the following questions:

1) Which one of the following committee works Pre-competition:-

A) Award committee. B) Registration committee

C) First Aid committee D) Officials committee

2). Which one of the following committee works Post-competition:-

A) Award committee. B) Officials committee

C) Registration committee. D) First Aid committee

3).Which one of the following committee works During-competition:-

A) Award committee. B) Officials committee

C) Registration committee. D) Welcome and decoration committee

Q-3 Jatin is a weightlifter in the 96 kg category. He has to participate in a weightlifting competition next week so he takes care of his health a lot. For this, he includes all the essential nutrients in his diet. Based on this case, answer the following questions.

1) What do you think would be the most important component of Jatin's diet?

A) Proteins. B) Carbohydrates. C) Vitamins. D) Minerals

2) What do you think Jatin requires the most?

A) Flexibility B) Strength. C) Speed D) Endurance

3). Which of these is known as body-building food?

A) Calcium. B) Proteins. C) Minerals. 4)Vitamins

Q-4 Name the type of tournament in which the defeated team gets eliminated and does not have another chance to play.

A) Bye. B) League. C) Fixture. D) Knockout

Q-5 To calculate Total No. of matches in a single league tournament

A) (N - 1)2. B) (N2 - 1). C) (n2-1/2) D) N(N-1)/2

Q-6 Which food item has carbohydrates and fats

A) Tomato and Almond. B) Bread and butter. C) Rice and Pules. D) Potato and Tomato

Q-7 Blood pressure is the force of blood in the arteries. When this pressure becomes abnormally high then it is called _____.

A) Heart Attack. B) Blood sugar. C) Hypertension. D) Cardiac arrest

Q-8.According to Asthanagyog Asana lies in what place -

A) Second. B) Third. C) First. D) Fifth

Q-9.SPD's expended form is

A) Sensory Processing Disorder. B) Sensory processing department

C) Special police department. D) Special processing Disorder

Q-10Which development is motor development

A) Sense Organs. B) Postural deformity. C) Disorder development. D) Bones & muscles

Q-11. Identify the below-given Asanas and write their names.

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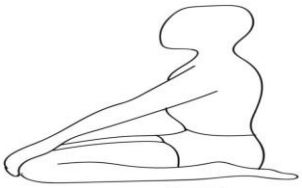

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Q-12. What is Kinesiology?

Q-13. Your grandmother is an active lady. She says she has much better fitness as compared with you because she takes a balanced diet, does regular exercise and often sits in the sunshine.

Based on this case, answer the following questions.

1). What is included in a balanced diet?

A) Carbohydrates. B) Vitamins. C) Proteins. D) All of these

2). Which is not a direct benefit of a balanced diet?

A) Makes us energetic. B) Proper functioning of organs.

C) Increases age. D) Improves metabolism

3). Which vitamin do we get from sunshine?

A) Vitamin A. B) Vitamin B. C) Vitamin C. D) Vitamin D

Q-14 .Roshni, a girl of 14, faces difficulty in breathing. She usually gets a cough at night and sometimes early in the morning. She gets tired soon and also feels pain in her hands, feet, and shoulders. So, she takes an appointment with a doctor who finds out the disease at an early stage.

Based on the above case, answer the following questions.

1-What do you think about which disease Roshni is suffering from?

A) Diabetes. B) Hypertension. C) Asthma. D) Obesity

2- What could be the reason behind the disease?

A) Pollution. B) Respiratory Disorder. C) Genetic Factor. D) All of these

3) Which asana would be effective to cure the disease which Roshni had?

A) Tadasana. B). Parvatasana. C) Vajrasana. D) Savasana

Q-15.Explain the procedures of Paschimottasana?

Q-16. What do you mean by diabetes? Discuss the procedure, benefits and contraindications of Bhujangasana?

Q-17.What is hypertension? Discuss the benefits and contraindications of Ardha Chakrasana and Vajrasana?

Q-18. What do you mean by healthy weight?

Q-19.Define food supplements?

Q-20.Enlist the forms of Vitamin B and explain any one in brief?

Q-21. In sports such as Boxing & Wrestling, the players tend to lose weight sharply. Explain pitfall of dieting?

Q-22. Write a short note on balance diet ?

Q-23. Draw a fixture of 11 Football teams participating in a tournament on the basis of knock-out?

Q-24.What are specific sports programmes? Explain any three?

Q-25.What is league tournament? Draw a fixture of 21 teams participating in league tournament League tournament?

Q-26. Draw a fixture of 9 kho-kho teams on the basis of Tabular method.

Q-27. Write the short note of Pre , During and Post responsibility.

Q-28. Write the short note of Projectile.

Q-29. Write the scientific name of all vitamin.

Q-30. Every one prepare your practical file on the basis of your syllabus.

Practice Questions

1. What is the difference between a Super Key and a Candidate Key?
2. Write a SQL command to create a table "Employee" with columns "Emp_ID" (primary key), "Name", and "Salary".
3. How do you ensure data consistency across related tables in RDBMS?
4. What is the purpose of Foreign Key in RDBMS?
5. Write a SQL query to retrieve employee names with salaries greater than 50000.
6. What is the purpose of `ON DELETE CASCADE` in DBMS?
7. How does `ON UPDATE CASCADE` maintain data consistency?
8. Can you provide an example of using `CASCADE` in a real-world scenario?
9. What is the purpose of the `GROUP BY` clause in SQL?
10. How does `GROUP BY` differ from `ORDER BY`?
11. Can you use multiple columns in a `GROUP BY` clause?
12. What is the purpose of the `ORDER BY` clause in SQL?
13. How do you sort data in ascending order using `ORDER BY`?
14. Can you use multiple columns in an `ORDER BY` clause?
15. What is the purpose of the `UPDATE` statement in SQL?
16. How do you update multiple columns in a single `UPDATE` statement?
17. What is the importance of the `WHERE` clause in an `UPDATE` statement?
18. What is the difference between DDL and DML?
19. Which DDL command is used to create a new table?
20. Which DML command is used to delete rows from a table?

(Biology)

MOLECULAR BASIS OF INHERITANCE

LONG ANSWER TYPE QUESTIONS (5 MARKS)

1. What are the salient features of the Double helix structure of the DNA proposed by Watson and Cricks?
2. Answer the following question regarding Griffith experiment
   (a) Name the bacteria with which the experiment has done.
   (b) What do you mean by the R-Strain and S-Strain?
   (c) Did the mice developed the disease when he injected the heat killed S- Strain to the mice?
   (d) Among the two strains which one is Virulent??
   (e) What was the finding of his experiment?
3. Explain briefly the Hershey and Chase experiment? What was the finding of their experiment?
4. What do you mean by semiconservative type of DNA replication? Who proved it experimentally? Explain the experiment briefly.
5. When did replication takes place in eukaryotic cell? Describe briefly the mechanism of DNA replication.
6. What constitute a transcription unit in a DNA? Write the exact location and function of each component.
7. Define transcription? Describe the mechanism of transcription process in the prokaryotes.
8. Define genetic code. Write the salient features of the genetic code.
9. Describe the process of the translation. Where does it take place exactly?
10. What are different component of the *lac* operon? Describe the mechanism of
11. regulation of the *lac* operon.
12. Answer the following questions in relation to the *lac* operon.
    (a) Why the regulator gene is known as the *i*-gene?
    (b) What is known as the inducer?
    (c) What are the enzymes synthesized by the structural gene?
    (d) Where the active repressor does binds to the operon to stop the transcription?
    (e) Name the scientists who proposed the operon concept.
13. What are the Salient features of the Human Genome project?

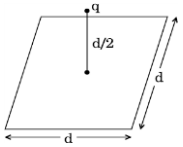
1. State the theorem which relates the enclosed charge, inside a closed surface, with the electric flux through it. Use this theorem to obtain the electric field due to a uniformly charged thin spherical shell at an (i) outside point (ii) inside point.

   An electric charge of 8.85 x 10^{-13} C is placed at the centre of a sphere of radius 1m. What is the total electric flux linked with the sphere? How will the electric flux change if another equal and dissimilar charge is introduced at a distance of (i) 0.5m from the centre, (ii) 1.5m from the centre?

2. State Gauss's theorem in electrostatics. Using this theorem, derive an expression for the electric field intensity due to a charged metallic spherical shell. Write the special cases. Draw the graph showing the variation of the field with distance from the centre of the conductor.
3. Derive expressions for electric field due to an electric dipole at a point (1) on the axial line (2) on the equatorial line. Deduce the expressions for electric field for a short dipole. Prove that the electric field at appoint on the axial line is equal to the double the electric field at appoint on the equatorial line at the same distance for a short dipole.
4. Define electric flux. Is it a scalar or a vector quantity?

A point charge q is at a distance of d/2 directly above the centre of a square of side d, as shown in the figure. Use Gauss' law to obtain the expression for the electric flux through the square.

If the point charge is now moved to a distance'd' from the centre of the square and the side of the square is doubled, explain how the electric flux will be affected.



5. A charge is distributed uniformly over a ring of radius 'a'. Obtain an expression for the electric intensity E at a point on the axis of the ring. Hence show that for points at large distances from the ring, it behaves like a point charge.
6. (a) Derive an expression for the electric field E due to a dipole of length '2a' at a point distant r from the centre of the dipole on the axial line.

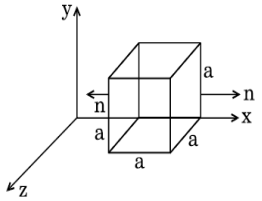
   (b) Draw a graph to show the variation of E with perpendicular distance r from the line of charge.

   (c) If this dipole were kept in a uniform external electric field E, diagrammatically represent the position of the dipole in stable and unstable equilibrium and write the expressions for the torque acting on the dipole in both the cases.
7. Use Gauss' law to derive the expression for the electric field (E) due to a straight uniformly charged infinite line of charge density λ C/m. Draw a graph to show the variation of E with perpendicular distance r from the line of charge.
8. State the theorem which relates the enclosed charge, inside a closed surface, with the electric flux through it. Use this theorem to obtain the electric field due to a uniformly charged thin spherical shell at an (i) outside point (ii) inside point.
9. An electric charge of 8.85 x 10^{-13} C is placed at the centre of a sphere of radius 1m. What is the total electric flux linked with the sphere? How will the electric flux change if another equal and dissimilar charge is introduced at a distance of

   (i) 0.5m from the centre, (ii) 1.5m from the centre?
10. Show, using Gauss's law, that for a parallel plate capacitor consisting of two large plane parallel conductors having surface charge densities + σ and − σ , separated by a small distance in vacuum, the electric field

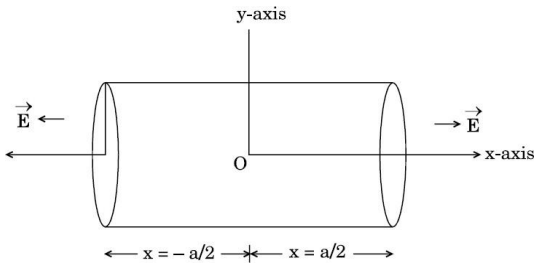
    (i) in the outer regions of both the plates is zero,

    (ii) is σ/ϵ_0 in the inner region between the charged plates.
11. Given the components of an electric field as Ex = αx, Ey = 0 and Ez = 0, where α is a dimensional constant. Calculate the flux through each face of the cube of side 'a', as shown in the figure, and the effective charge inside the cube.



12. A right circular cylinder of length 'a' and radius 'r' has its centre at the origin and its axis along the x-axis so that one face is at x = + a/2 and the other at x = − a/2, as shown in the figure. A uniform electric field is acting parallel to the x-axis such that E = E0 i for x > 0 and E = − E0 i for x < 0. Calculate the flux through the cylinder', as shown in the figure, and the effective charge inside the cylinder.

13.



14. A Dipole is made up of two charges + q and − q separated by a distance 2a. Derive an expression for the electric field due to this dipole at a point distant r from the centre of the dipole on the equatorial plane. Draw the shape of the graph, between $|Ee|$ and r when r>>a

If this dipole were to be put in a uniform external electric field, obtain an expression for the torque acting on the dipole.

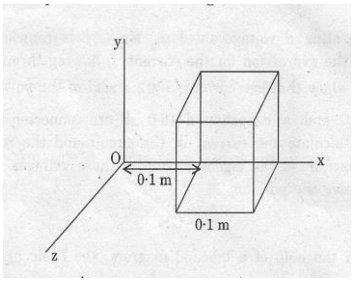
15. (a) Define electric flux. Write its S.I. unit.

(b) Using Gauss's law, obtain the electric flux due to a point charge 'q' enclosed in a cube of side 'a'.

(c) Show that the electric field due to a uniformly charged infinite plane sheet at any point distant x from it, is independent of x.

16. Use Gauss's law to obtain an expression for the electric field due to an infinitely long straight uniformly charged wire.

Electric field in the given figure is directed along + X direction and given by Ex = 5Ax + 2B, where E is in NC^{-1} and x is in metre, A and B are constants with dimensions. Taking A = $10NC^{-1}m^{-1}$ and B = $5NC^{-1}$ calculate. (i) the electric flux through the cube. (ii) net charge enclosed within the cube.



Derive the expression for the potential difference between two points due to appoint charge. Hence find the potential at appoint due to a point charge.

1. Derive the expression for the capacitance of a parallel plate capacitor. Derive the expression for the energy stored in a capacitor.
2. What is a dielectric? Define dielectric constant. Derive the expression for the capacitance of a parallel plate capacitor when a dielectric slab of thickness less than the separation between the plates is introduced inn it. Hence deduce the expression for its capacitance if the region between the plates is fully filled with dielectric.
3. Define the potential energy of a system of charges and derive the expression for the potential energy of a system of three charges. Extend this expression for system of n charges.
4. Derive the expression or the potential at a point due to an electric dipole. What is the expression for the potential at point on its (a) axial line and (b) equatorial line?
5. Derive the expression for the potential energy required to rotate a dipole in a uniform electric field from a position θ1 to θ2 with direction of the applied electric field. Hence deduce the expression for its potential energy in an external field. Find its maximum value and minimum value
6. Derive the expression for the effective capacitance of three capacitors when they are connected in series and in parallel.

हिंदी

1'आत्मपरिचय कविता का भावार्थ लिखिए और याद कीजिए। '

कविता 'आत्मपरिचय' 2से संबंधित सभी प्रश्नों को याद कीजिए और लिखिए।

3. 'पतंग 'कविता का भावार्थ लिखिए और याद कीजिए।

4. 'पतंग 'कविता से संबंधित सभी प्रश्नों को याद कीजिए और लिखिए।

5.पाठ का सारांश लिखिए। 'भक्तिन'

6. पाठ से संबंधित सभी प्रश्नों को याद कीजिए और लिखिए। 'भक्तिन'

7. डायरी क्या हैडायरी लेखन की कला को स्पष्ट कीजिए ?।

8. ग्लोबल वार्मिंग' - मनुष्य के लिए खतरा' शीर्षक पर लगभग शब्दों एक 150 अनुच्छेद लिखिए।

9. एक लघु कथा लिखिए जिसमें 'बुद्धि सबसे बड़ा धन है' की शिक्षा मिलती हो।

10.महाकुंभ' -2025' का वर्णन लगभग शब्दों में लिखिए। 400

11. अपने गांव के शिक्षा से वंचित बच्चों को शिक्षित करने के लिए आप क्या कर सकते हैं अपने विचारों को लगभग ? शब्द 150ोंं में लिखिए।

12. अपने विद्यालय के वार्षिकोत्सव पर एक रिपोर्ट तैयार कीजिए।

13. जनसंचार और मध्यम विषय पर एक प्रोजेक्ट फाइल तैयार कीजिए।

CLASS 12 - ENGLISH CORE

	Section A
1	Kamala Das was a a) Keralite b) Punjabi c) Bengali d) Gujarati
2	Which poetic device is used in **Trees sprinting** ? **(My Mother at Sixty - Six)** a) Simile b) Alliteration c) Personification d) Metaphor
3	What is her work known for? **(My Mother at Sixty - Six)** a) For the expressions used b) For its popularity c) For its originality, versatility and flavour of the soil d) For its style
4	What was the absolute fallout of the poet Kamala Das for her dying mother? a) She kept mum b) She laughed at her c) She wept bitterly d) She smiled at her
5	Why wasthe poet continuously smiling? **(My Mother at Sixty - Six)** a) Her mother had cracked a joke b) To hide her emotions c) She was happy to depart her mother d) She was excited to reach her destination
6	The picture of the poet Kamala Das mother's corpse - like figure retrieved: a) Old happy memories b) An image of positivity c) Certainty of long life d) Old childhood fear
7	Why did Kamala das compare her mother with a late winter's moon? a) Her face was wrinkled like the patches of the moon b) Her face was bright like a moon c) She had a round face d) She was pale and dull
8	What is the moral of the poetry **my mother at sixty - six** ? a) The human becomes vulnerable with the passage of time b) Time and aging spares none c) No one can escape from the childhood fear d) Life is short and skeptical
9	What is the kind of pain and ache that the poet feels? a) Headache b) Heart attack c) Children screaming at her d) Losing her mother
10	What did the parting words of the poet Kamala Das suggest? a) She would come back very soon b) She was taking it lightly c) She was unaware of the truth d) She knew that she was helpless
11	It was really an overwhelming fact for the poet Kamala Das that she would: a) Loseall her savings soon b) Lose her enthusiasm in life

	c) Lose her job and status d) Lose her ailing mother
12	Why did the poet Kamala Das call the trees as sprinting? a) They seemed to be running b) The trees were huge and old c) These were young trees d) They appeared weak and bend
13	Why was the realization painful (my mother at sixty - six)? a) She realized that her mother was growing old and nearing death b) Because the poet was driving to Cochin airport from her parents home c) She noticed that her mother was sleeping with her mouth open d) She thought that her mother was no longer beautiful
14	What was the poet's childhood fear about old age in the poem My Mother at Sixty - Six? a) She was not able to accept the fact that her mother was growing old b) That she would lose her beauty c) That she would have a painful and miserable old age d) She feared that her mother would leave her
15	How did the poet Kamala Das hide her emotions from her mother? a) By giving a short cry b) By traversing the security check without getting notice c) By smiling d) By flapping her mother goodbye
16	The poet Kamala Das has described her mother's face **ashen** to display: a) her pale face and grey coloured skin b) her inner beauty and charm c) a cloud of dust on her face d) her customary hard work
17	Identify the poetic device used in **as a late winter's moon** ? **(My Mother at Sixty - Six)** a) Metaphor b) Alliteration c) Pun d) Simile
18	Where was the poet Kamala Das steered? a) To the Cochin airport b) Towards the Mumbai airport c) Towards the Kerala airport d) To the bazaar
19	The poet Kamala Das has correlated her mother with: a) a vigorous child b) the sprinting trees c) many children d) a dead body
20	What was the supreme promise made by the poet Kamala Das to her mother? a) That she would make an illustration of her b) That she would miss her a lot c) That she would appear back d) That she would memorize her in dreams
21	The poet has compared her mother to a corpse, why?
22	How was the poet's mother affected by her daughter's departure? Answer in reference to the poem **My Mother at Sixty - Six** .
23	What do the parting words of Kamala Das and her smile signify?
24	What did Kamala Das see when she looked back at her mother after the security check at the airport?
25	Why did the poet say 'children spilling out of their homes'?
26	What is the familiar pain and ache the poet feels in the poem My Mother at Sixty - Six?
27	What do the parting words of the poet, Kamala Das and her smile signify?
28	What was the poet's childhood fear? Why did she compare it with an ache in the poem My Mother at Sixty - Six?
29	Where was the poet (My Mother at Sixty - Six) before leaving for the airport? Where was she going?
30	What is the significance of the prolonged smile of the poet? Answer in reference to the poem **My Mother at Sixty - Six** .
31	Which thought did the poet put away and why? Answer based on the poemMy Mother at Sixty - Six.
32	How did Kamala Das's mother look during the drive to Cochin?
33	The poet talks about pain and ache. Both have the same meaning but why did she bring them at varying stages in the poem?
34	What sort of pain does the poet feel in **My Mother at Sixty - six** ?
35	How was the relationship of the poet with her mother in reference to the poem?
36	What is the significance of the word **but** in 'but all I said was see you soon, Amma? (My Mother at Sixty - Six)

37	Why has the poet's mother been comparedto 'a late winter's moon' in the poem My Mother at Sixty - Six?
38	What were the poet's feelings on her way to the airport? **(My Mother at Sixty - six)**
39	**See you soon Amma.** How are these words contrary to the speaker's emotions? (My Mother at Sixty - six)
40	What was the thought of the poet when she wrote 'young trees sprinting'?
41	**Read the following extract and answer the questions that follow:** I looked again at her, wan, pale as a late winter's moon and felt that old familiar ache, my childhood's fear, but all I said was, see you soon, Amma, all I did was smile and smile and smile ... 1. The poem My Mother at Sixty - Six captures the _____of the narrator. I.happiness II. fear III. dismay IV. anxiety Choose the most appropriate option: a. Only I b. I and IV c. II and IV d. Only III 2. Identify the phrase from the extract that suggests the following: She was overwhelmed with emotion and could not speak much. 3. The word **wan** in the given context most nearly means a. pale b. old c. unwell d. anxious 4. Complete the following analogy correctly. Do not repeat from the example used. Trees sprinting : personification : : _____: simile 5. On the basis of the extract, study the two statements, I and II given below: I. The poet accepts the reality of her mother's declining health and old age. II. She is nostalgic about her childhood days spent with her mother. Choose the most appropriate option: a. I is true, but II is false b. Both I and II are true c. II is the reason for I d. II cannot be inferred from the extract 6. Explain the following statement with reference to the above extract: All I did was smile and smile and smile.
42	**Read the following text carefully and answer the questions that follow:** ...but soon put that thought away, and looked out at Young Trees sprinting, the merry children spilling out of their homes, but after the airport's security check, standing a few yards away, I looked again at her, wan, pale

	as a late winter's moon and felt that old familiar ache, my childhood's fear, (My Mother at Sixty - six) 1. Select the correct option. (1) The impact of **merry children** on poet's mind _____. a. caused anxiety b. created a sense of longing c. brought comfort d. reminded her of her own childhood 2. The tone of the poet expressed in the above lines is(1) a. sadness and helplessness b. excitement and eagerness c. appreciation and gratitude d. anger and anxiety 3. The words **wan, pale** indicate the mother's _____.(1) 4. Complete the following sentence appropriately.(1) The poet looked at her mother again to _____. 5. Explain one inference that can be drawn from the line **felt that old familiar ache** .(1) 6. **put that thought away** . What is the intention of poet that can be inferred from the above line?(1)
43	**Read the following text carefully and answer the questions that follow:** I saw my mother, beside me, doze, open mouthed, her face ashen like that of a corpse and realized with pain that she was as old as she looked but soon put that thought away, and looked out at Young Trees sprinting, the merry children spilling out of their homes. (My Mother at Sixty - six) 1. The phrase **ashen like that of a corpse** gives the impression that the mother is (1) a. frustrated b. depressed c. dead d. weak 2. State whether the following statement is True or False, with reference to the extract. (1) 'The mother was suffering from some fatal disease.' 3. Which of the following themes is best represented in the given extract? (1) a. Life is short and one must enjoy it b. Ageing and Mortality c. Sleeping and Playing d. Art of Parenting 4. Pick the option in which the word 'spilling' is used in the same sense as in the extract. (1) a. Rahul was responsible for spilling the beans by telling everyone the secret. b. He opened the bag, spilling all its contents on the table. c. Try to keep that crowd from spilling onto the main street. d. The cat spilled all the milk. 5. The phrases 'Young Trees sprinting and merry children spilling' represent: (1) a. Youth

b. Old age
c. Disease
d. Travel

6. Complete the sentence appropriately. (1)
'She was as old as she looked.'
The repetition of the word **as** suggests that _____.

44 **Read the following extract and answer the questions that follow:**

Driving from my parent's
home to Cochin last Friday
morning, I saw my mother,
beside me,
doze, open mouthed, her face
ashen like that
of a corpse and realised with
pain
that she was as old as she
looked but soon
put that thought away, and
looked out at Young
Trees sprinting, the merry children spilling
out of their homes.

1. Choose the option that displays the same poetic device as used in the extract.
   a. deafening silence
   b. swaying softly and slowly
   c. pitter - patter rain
   d. as white as snow
2. What does the phrase **realise with pain** indicate?
   a. guilt
   b. anguish
   c. wounded
   d. revelation
3. The poet describes her mother as
   a. old
   b. wise
   c. quick
   d. weak
   e. strong

   Choose the most appropriate option:
   i. I and IV
   ii. II and V
   iii. III and IV
   iv. I and V
4. Answer in one word.
   On seeing her mother dozing, open mouthed, the poet felt _____.
5. The merry children symbolise all of the following except
   a. freedom and energy
   b. playfulness and cheerfulness
   c. vigour and health
   d. maturity and innocence
6. Which of the following is an apt title for the extract?
   a. Spring and Winter
   b. Merry Thoughts

	c. Trip to Cochin d. My Beautiful Mother
45	**Read the following extract and answer the questions that follow:** "But after the airport's security check, standing a few yards away, I looked again at her, wan, pale as a late winter's moon." 1. Why did the poet look her mother again? a. To see if she was sleeping b. To check if she was well c. To bid her good bye d. To say something to her 2. Mother's face has been compared to a. the brightness of the full moon b. paleness of late winter's moon c. cheerfulness of young children d. the lifelessness of a drooping old tree 3. The mother's face was pale because a. Mother's old age b. Mother's depleting energy c. Mother's illness d. Both Mother's old age andMother's depleting energy 4. Identify the figure of speech employed in the last line of the given extract _____. 5. On the basis of the extract, choose the correct option with reference to the two statements given below. (1) Mother's face is highly - spirited. (2) Late winter's moon is dull and lacks luster. a. (1) can be inferred from the extract but (2) cannot. b. (2) can be inferred from the extract but (1) cannot. c. Both (1) and (2) can be inferred from the extract. d. (2) is the reason for (1) and can be inferred from the extract. 6. Choose the word which does not mean 'WAN'. a. Faint b. Colourless c. Anemic d. Supple
46	**Read the following extract and answer the questions that follow:** but after airport's security check, standing a few yards away, I looked again at her, Wan, pale as a late winter's moon and felt that old familiar ache, my childhood's fear but all I said was, see you soon, Amma, All I did was smile and smile and smile - - - - - - 1. Choose the correct option: In the above extract the narrator feels a. satisfied b. fearful c. nostalgic d. regretful

	2. Identify the word in the extract that means **colourless** . 3. Complete the following analogy correctly: She sang like a bird : Simile All I did was smile and smile and smile : _____ 4. Read the following statement and choose the correct option: (1) The poet had gone through the security check. (2) She did not want to look at her mother. a. (1) is true, but (2) is false. b. (1) is false, but (2) is true. c. Both (1) and (2) are true. d. Both (1) and (2) are false. 5. What childhood fear is the poet referring to? 6. Fill the blank with appropriate words with reference to the extract: Pale as a winter's moon suggests _____.
47	**Read the following extract and answer the questions that follow:** .... and felt that old familiar ache, my childhood's fear, but all I said was, see you soon, Amma, all I did was smile and smile and smile ... 1. What did the poet do after the security check? a. The poet stood a few yards away from her mother and looked at her face again b. The poet stood a few yards near her mother and looked at her face again c. The poet stood a few yards away from her mother and thinking about her d. None of these 2. What was the childhood fear that now troubled the poet? a. Fear of losing her mother b. Examination fear c. Fear of undergoing a surgery d. Fear of leaving her home town 3. What do the poet's parting words suggest? a. Optimism b. Reassurance c. Nostalgia d. All of these 4. On the basis of the extract, choose the correct option with reference to the two statements given below. (1) The poet had already experienced such pain. (2) She smiles to conceal her pain. a. (1) can be inferred from the extract but (2) cannot. b. (2) can be inferred from the extract but (1) cannot. c. Both (1) and (2) can be inferred from the extract. d. (2) is the reason for (1) and can be inferred from the extract. 5. Name the poetic device used in the line, **all I did was smile and smile and smile.** a. Simile b. Alliteration c. Metaphor d. Transferred Epithet 6. The poet is gripped by the _____ of the past and _____ of the future without her mother.
48	**Read the following extract and answer the questions that follow:** And looked out at Young Trees sprinting, the merry children spilling out of their homes, but after the airport's security check, standing a few yards

	away, I looked again at her, wan, pale as a late winter's moon and felt that old familiar ache ... 1. What is the most likely reason the poet capitalised **Young Trees** ? a. convey a clearer meaning. b. highlight the adj. - noun combination. c. enhance the contrast. d. draw a connection with the title. 2. On the basis of the extract, choose the correct option with reference to the two statements given below. (1) The poet knows her mother has aged. (2) She is struck with the pain of separation. a. (1) can be inferred from the extract but (2) cannot. b. (2) can be inferred from the extract but (1) cannot. c. Both (1) and (2) can be inferred from the extract. d. (2) is the reason for (1) and can be inferred from the extract. 3. Choose the option that completes the sentence given below. Just as the brightness of the winter's moon is veiled behind the haze and mist, similarly, _____. a. the pain of separation has shaded mother's expression. b. age has fogged mother's youthful appearance. c. growing up has developed a seasoned maturity in the poet. d. memories warm the heart like the pale moon in winter. 4. Choose the correct option out of the ones given below. a. **Simile -** then merry children spilling **Metaphor -** old familiar ache b. **Metaphor -** pale as a late winter's moon **Imagery -** Young Trees sprinting c. **Imagery -** all I did was smile **Personification -** the merry children spilling d. **Personification -** Young Trees sprinting **Simile -** Pale as a late winter's moon a. Option (a) b. Option (b) c. Option (c) d. Option (d) 5. What do young sprinting trees signify? a. Active b. Cheerful c. Bright d. All of these 6. **Familiar ache** refers the poet's _____ fear.
49	Draft a notice in 50 words, urging students of classes IX and XI to be volunteer teachers for a three - week literacy camp to be held in your school for children of the neighbourhood slums as part of the community service internship. Mention the dates, timings and the venue of the camp. You are Rita/Kailash, teacher - in - charge of community service.
50	The Debating Society of your school is organising an inter - school debate. The last date for submitting names for audition is Friday 17^{th} March. There will be on - the - spot trials. Draft a notice in about **50** words informing students about the team selection time, date and venue. You are Sarita/Sarit, President, Debating Society, Flora International School.
51	As student editor, draft a notice in not more than 50 words for your school notice board inviting articles from the students for your school magazine. You are Rohan / Rupini Gupta of Vasant Vihar School, Pune.
52	You are Rani/Raj, Secretary Health Club, National Public School, Ramnagar. You find that after the lunch break the school playground and verandahs are littered with wrappers, paper/polythene bags, etc. Write a notice in about 50 words advising students to refrain from doing so.

53	The Traffic Police of your district has agreed to hold a one - day programme on road safety in your school. Draft a notice in about 50 words to be put up on the school notice - board, informing students of classes 8 - 12 to assemble at the appointed place. You are Shaili/Suneet, Sports Incharge. Mention day, date, time and venue.
54	You are Akhil/Amala, the Secretary of the History Club of Margaret Public School, Utsavnagar. The club has decided to conduct an educational tour to the local historical sites for students of class XI. Draft a notice informing the students of the proposed tour. Invent all necessary details.
55	You are the President, Literary Society of Hans Public School, Railpura. Draft a formal invite to the renowned author Ms. Savita Patil, requesting her to conduct a workshop on Creative Writing in your school. Invent necessary details. You are Anita/Amit.

Mathematics Set- 01

1. If $f(x) = \frac{1}{4x-3}$, then D_f =.

   a. $\left(\frac{3}{4}, \infty\right)$
   b. R
   c. R - $\left\{\frac{3}{4}\right\}$
   d. $\left(-\infty, \frac{3}{4}\right)$

2. A relation R in a set A is called transitive, if

   a. $(a_1, a_2) \in R \Rightarrow (a_2, a_3) \in R \; \forall (a_1, a_2, a_3) \in A$
   b. $(a_1, a_3) \in R, (a_2, a_3) \in R \Rightarrow (a_1, a_2) \in R \; \forall \; a_1, a_2, a_3 \in A$
   c. $(a_1, a_1) \in R, (a_2, a_2) \in R \Rightarrow (a_1, a_2) \in R \; \forall a_1, a_2 \in A$
   d. $(a_1, a_2) \in R, (a_2, a_3) \in R \Rightarrow (a_1, a_3) \in R \forall a_1, a_2, a_3 \in A$

3. If the mappings f: A $\rightarrow$B and g: B $\rightarrow$C are both bijective, then the mapping A$\rightarrow$C is

   a. one – one but not onto
   b. one – one and onto
   c. onto, but not one – one
   d. neither one – one nor onto

4. A function $f : X \rightarrow Y$ is defined to be one – one (or injective), if

   a. the images of distinct elements of X under f are not distinct
   b. the images of distinct elements of X under f are distinct
   c. the images of distinct elements of X under f are identical
   d. the images of distinct elements of X under f are not defined

5. A binary operation * : $R \times R \rightarrow R$ defined by a $*$ b = a + 2b is

   a. Not well defined
   b. Not associative

c. A unary operation
d. Commutative

6. A relation R in a set X is called an _____ relation, if no element of X is related to any element of X.
7. A relation R from a set X to a set Y is defined as a _____ of the cartesian product X $\times$ Y.
8. A relation R in a set X is called _____ relation, if each element of X is related to every element of X.
9. If f: R $\rightarrow$ R be given by f(x) $= \left(3 - x^3\right)^{\frac{1}{3}}$, find fof (x) **(1)**
10. Give examples of two functions f : N $\rightarrow$ N and g : N $\rightarrow$ N such that gof is onto but f is not onto.
11. Let * be a binary operation defined by a * b = 2a + b - 3. find 3 * 4
12. If f : R $\rightarrow$ R is defined by f(x) = x^2 - 3x + 2 write f(f(x))
13. Let f : X $\rightarrow$ Y be an invertible function. Show that f has unique inverse.
14. Check whether the relation R in R defined by R = {(a,b) : a < b^3} is reflexive, symmetric or transitive.
15. Let L be the set of all lines in plane and R be the relation in L define if R = {(l_1, L_2) : L_1 is $\perp$ to L_2}. Show that R is symmetric but neither reflexive nor transitive.
16. Check whether the relation R defined in the set {1, 2, 3, 4, 5, 6} as R = {(a, b): b = a+1} is reflexive, symmetric or transitive.
17. Prove that the relation R in set A = {1, 2, 3, 4, 5} given by R = {(a, b) : Ia - bl is even} is an equivalence relation.
18. Discuss the commutativity and associativity of binary operation '*' defined on A = Q - {1} by the rule a * b = a - b + ab for all a, b $\in$ A Also, find the identity element of * in A and hence find the invertible elements of A.

Set-02

1. If $x + y = \frac{\pi}{4}$ then (1 + tanx)(1 + tany) is equal to

   a. 2
   b. 1
   c. -1
   d. none of these

2. The relation $\operatorname{cosec}^{-1}\left(\frac{x^2+1}{2x}\right) = 2\cot^{-1}x$ is valid for

   a. $x \geqslant 0$
   b. $|x| \geqslant 1$
   c. $x \geqslant 1$
   d. None of these.

3. $\sin\left(\sin^{-1}\frac{1}{2} + \cos^{-1}\frac{1}{2}\right)$ equals

   a. $-\frac{1}{4}$
   b. 0
   c. $\frac{1}{2}$
   d. 1

4. The number of solutions of the equation $\sin^{-1}x - \cos^{-1}x = \sin^{-1}\left(\frac{1}{2}\right)$ is

   a. 2
   b. 1
   c. 3
   d. Infinite.

5. $\sin(\cot^{-1}x)$ is equal to

   a. None of these
   b. $\frac{x}{\sqrt{1+x^2}}$

c. $\frac{1}{\sqrt{1+x^2}}$

d. $\sqrt{1+x^2}$

6. The value of $\sin^{-1}\left(\sin\frac{3\pi}{5}\right)$ is _____.
7. The principle value branch of $\text{cosec}^{-1}x$ is _____.
8. The value of $\sin^{-1}\left(cos\left(\frac{33\pi}{5}\right)\right)$ is _____.
9. Find $\text{cosec}^{-1}(2)$
10. Find the value of $\sin^{-1}\left(\sin\frac{3\pi}{5}\right)$.
11. Find the value of $\cos^{-1}\left(\cos\frac{13\pi}{6}\right)$.
12. Find $\sin(\tan^{-1}x)$ =. **(2)**
13. Find the value of $\tan^{-1}\left(\tan\frac{2\pi}{3}\right)$.
14. $\tan^{-1}\left(\tan\frac{3\pi}{4}\right)=?$
15. Prove that: $\cot^{-1}\left(\frac{\sqrt{1+\sin x}+\sqrt{1-\sin x}}{\sqrt{1+\sin x}-\sqrt{1-\sin x}}\right)=\frac{x}{2}, x\in\left(0,\frac{\pi}{4}\right)$.
16. Prove that $\tan^{-1}\left(\frac{\sqrt{1+x}-\sqrt{1-x}}{\sqrt{1+x}+\sqrt{1-x}}\right)=\frac{\pi}{4}-\frac{1}{2}\cos^{-1}x$.
17. Prove that $\cot^{-1}7+\cot^{-1}8+\cot^{-1}18=\cot^{-1}3$. **(4)**
18. Prove that $\cos^{-1}x=2\sin^{-1}\sqrt{\frac{1-x}{2}}=2\cos^{-1}\sqrt{\frac{1+x}{2}}$.