

Ascent International School, Greater Noida

Holiday Homework

Computer Science

Class-XII-A

- Write the Answer of following question in your CS notebook.
 - What is relation? What is difference between a tuple and an attribute?
 - What are DDL and DML? Mention the two commands for each category.
 - Differentiate between primary key and candidate key in a relation?
 - What do you understand by the terms cardinality and Degree of a relation in relational database.
 - Define the conceptual level of Database implementation/ abstraction?
 - What do you mean by data inconsistency? Explain with the example.
 - What is difference between database and relational database? Explain with help of example.
- Prepare a notes and Power point presentation on the given topic according to following schedule and send to rksirascent@gmail.com :
 - Networking and Its History : Arshpreet Virdi & Bharti Singh
 - Data Communication & Transmission Media : Mayank Srivastava & Mohit Kumar
 - Network Topology and its Types : Saurabh Jindal & Navneet Singh
 - Open Source Terminology : Hari kishan
 - Network Protocols : Sahil Rana
- Write the SQL commands for the following question (a) to (d) and output of (e):

First create database with name AIS and create table with GRADUATE having following attributes:

S_No	S_Name	Stipend	Subject	Average	Division
1	Sahil Rana	400	Physics	68	I
2	Saurabh Jindal	450	CS	68	I
3	Mayank Srivastava	300	Chemistry	62	I
4	Hari Kishan	350	Physics	63	I
5	Namrata	500	Maths	70	I
6	Savita	400	Chemistry	55	II

7	Navneet Singh	250	Physics	64	I
8	Mohit Kumar	450	Maths	68	I
9	Arshpreet Viridi	500	CS	62	I
10	Bharti Singh	400	Maths	57	II

- List the names of those students who have obtained Division I sorted by S_Name.
- Display a report, listing S_Name, Stipend, Subject and amount of stipend received in a year if the Stipend is paid every month.
- To count the number of students who are either Physics or CS graduate.
- To insert a new row in the GRADUATE table: 11, 'Shivani Singh',300,'CS',75,I.
- Give the output of the following SQL commands based on the table GRADUATE.
 - Select MIN(Average) from GRADUATE wherer Subject='Physics'.
 - Select SUM(Stipend) from GRADUATE wherer Division=II.
 - Select AVG(Stipend) from GRADUATE wherer Average>=65.
 - Select COUNT(distinct Subject) from GRADUATE.

4. Consider the following table SENDER and RECIPIENT. Write SQL commands for the statements (i) to (iv) and give the output for the SQL queries (v) to (viii).

SENDER

S_ID	S_Name	S_Address	S_City
AIS101	Sahil Rana	Alpha 1 Gr Noida	Noida
AIS102	Mayank Raj	Beta 2 Gr Noida	Noida
SC105	Suman Singh	27 A Pitampura	Delhi
AU102	Karan Pandey	23 B Park Street	Mumbai

RECIPIENT

R_ID	S_ID	R_Name	R_Address	R_City
K005	AIS101	Rajesh Singh	H 18 Sector 15	Noida
ND06	AIS102	Kamal Singh	A-52 Sector 7	Noida
MU19	SC105	Sidhant Tiwari	S 67 Sarita Vihar	Delhi

MU32	AU102	Swati Singh	115 Anand Vihar	Delhi
ND48	AIS101	Simran Ansari	B5 Andheri East	Mumbai

- (i) To display the names of all Sender from Noida.
- (ii) To display the R_ID, S_Name, S_address, R_Name, R_Address for every recipient.
- (iii) To display recipient detail in ascending order of R_Name.
- (iv) To display number of recipients from each city.
- (v) Select distinct S_city from SENDER.
- (vi) Select A.S_Name, B.R_Name from SENDER A, RECIPIENT B where A.S_ID=B.S_ID AND B.R_City='Mumbai'.
- (vii) SELECT R_Name, R_Address From RECIPIENT Where R_City NOT IN ('Mumbai', 'Noida');
- (viii) SELECT R_ID, R_Name from RECIPIENT Where S_ID='AU102' or S_ID='SC105';

Note: Do the question number 3 and 4 on Computer System and take screen shot of each query then prepare a word document in following manner and send to rksirascent@gmail.com

Command: CREATE

SYNTAX: create table <table name> (<column name> <datatype> (<size>), <column name> <data type> (<size>))

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C:\Program Files (x86)\MySQL\MySQL Server 5.1\bin\mysql.exe
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.1.33-community MySQL Community Server (GPL)

Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

mysql> use ais
Database changed
mysql> create table Student(S_no integer, S_Name varchar(30), class integer, marks integer);
Query OK, 0 rows affected (0.18 sec)

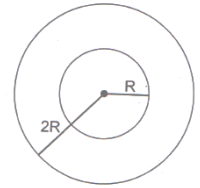
mysql>

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5. Write 5- program for each category:
 - a) Based on looping statement
 - b) Based on branching statement
 - c) Based on Array data structure
 - d) Based on Structure data type.
 - e) Based on pointer

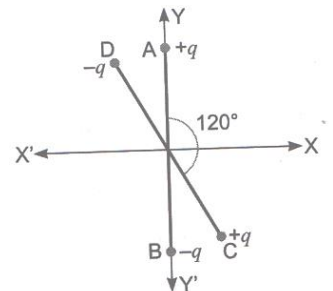
Physics

1. A electric charge of unknown magnitude and sign are placed at some distance d apart the electric field intensity is zero at a point, not between the charges but on the line joining them. Write to essential conditions for this to happen?
2. Two concentric metallic spherical shells of radii R and $2R$ are given charges Q_1 and Q_2 respectively. The surface charge densities on the outer surface of the shells are equal. Determine the ratio $Q_1: Q_2$.
3. (A) An infinitely long positively charged straight wire has a linear charge densities $\lambda \text{ Cm}^{-1}$. An electron is revolving around the wire as it centre with a constant velocity in a circular plane perpendicular to the wire .

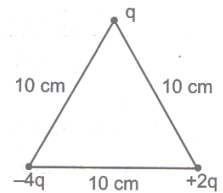


- A) Deduce the expression for its kinetic energy.
- B) Plot a graph of the kinetic energy as a function of charge density λ .

4. Two small identical electrical dipoles AB and CD, each of dipole moment P are kept at an angle of 120° as shown in the figure. What is the resultant dipole moment of this combination? If this system is subject to electric field (E) directed along $+X$ direction , what will be the magnitude and direction of the torque acting on this ? .



5. A cube of side b has a charge q at each of its vertices. Determine the potential and electric field due to this charge - array at the centre of the cube.
6. Calculate the work done to dissociate the system of three charges placed on the vertices of a triangle as shown $q = 1.6 \times 10^{-10} \text{C}$.
7. A parallel plate is charged by a battery, When the battery remains connected, a di-elected slab is inserted in the space between the plates.



Explain what changes if any, occur in the values of

- (I) Potential difference between the plates.
 - (II) Electric field strength between the plates.
 - (III) Capacitance
 - (IV) Charge on the plates
 - (V) Energy stored in the capacitor?
8. A parallel plate capacitor is charged by a battery, which is then disconnected. A dielectric slab is then inserted in the space between the plates. Explain what changes, if any, occur in the values of:
 - (I) Capacitance
 - (II) Potential difference between the plates.
 - (III) Electric field between the plates, and
 - (IV) The energy stored in the capacitor.
 9. A parallel plate capacitor each with plate area A and separation d is charged to a potential difference V . The battery used to charge it is then disconnected. A

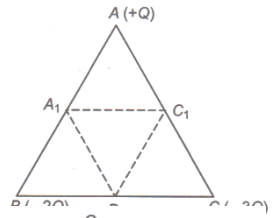
dielectric slab of thickness d and dielectric constant K is now placed between the plates. What change if any, will take place in:

- (I) Charge on the plates
- (II) Electric field intensity between the plates
- (III) Capacitance of the capacitor,

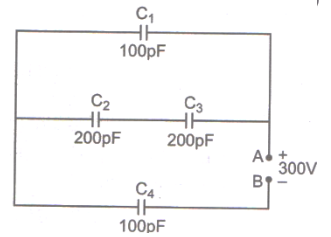
Justify your answer in each case.

10. The two plates of a parallel plate capacitor are 4 mm apart. A slab of dielectric constant 3 and thickness 3 mm is introduced between the plates with its faces parallel to them. The distance between the plates is so adjusted that the capacitance of the capacitor becomes $\frac{2}{3}rd$ of its original value. What is the new distance between the plates?
11. (I) Plot a graph comparing the variation of potential V and electric field E due to a point charge Q as a function of distance R from the point charge.
(II) Find the ratio of potential difference that must be applied across the parallel and the series combination of two identical capacitors so that the energy stored, in the two cases, becomes the same.
12. A parallel plate capacitor of capacitance C is charged to a potential V . It is then connected to another uncharged capacitor having the same capacitance. Find out the ratio of energy stored in the combined system to that stored initially in the single capacitor.
13. Two capacitors of unknown capacitances C_1 and C_2 are connected first in series and then in parallel across a battery of 100V. If the energy stored in the two combinations is 0.045J and 0.25 J respectively, determine the values of C_1 and C_2 . Also calculate the charge on each capacitor in parallel combination.
14. A $4\mu\text{f}$ capacitor is charged by a 200V supply. It is then disconnected from the supply and is connected to another uncharged $2\mu\text{f}$ capacitor. How much electrostatic energy of the first capacitor is lost in the form of heat and electromagnetic radiation?
15. A metallic spherical shell has an inner radius R_1 and outer radius R_2 . A charge Q is placed at the centre of the spherical cavity. What will be surface charge density on (I) the inner surface and (II) the outer surface?
16. Consider two conducting spheres of radii R_1 and R_2 with $R_1 > R_2$. If the two are at the same potential, the larger sphere has more charge than the smaller sphere. State whether the charge density of the smaller sphere is more than that of the larger one.
17. The two graphs drawn below, show the variations of electrostatic potential (V) with $1/r$ (r being the distance of field point from the point charge) for two point charges q_1 and q_2 . (i) What are the signs of the two charges? (ii) Which of the two charges has the larger magnitude and why?

18. Three point charges $+Q$, $2Q$ and $-3Q$ are placed at the vertices of an equilateral triangle ABC of side l . If these charges are distanced to the mid points A_1 , B_1 , and C_1 , respectively, calculate the amount of work done in shifting the charges to the new locations

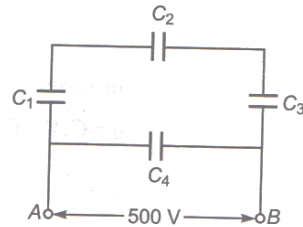


19. Obtain the equivalent capacitance of the network in the figure alongside. for a 300V supply, determine the charge and voltage across each capacitor.

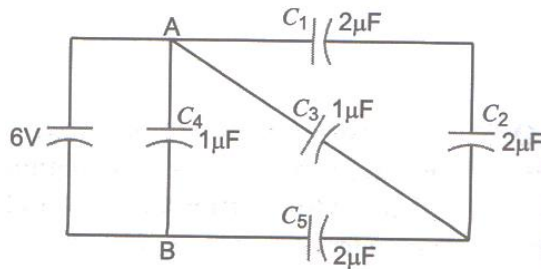


20. A network of four capacitors each of $15\mu\text{f}$ capacitance is connected to a 500V supply as shown in the figure. Determine.

- (I) Equivalent capacitance of the network and
- (II) Charge on each capacitor.



21. Find the total energy stored in the capacitors in the given network.

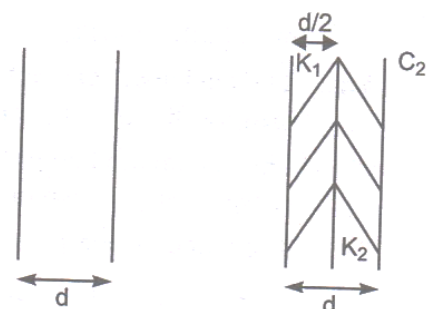


22. In a parallel plate capacitor with air between the plates, each plate has a area of $6 \times 10^{-6} \text{ m}^2$ and the separation between the plates is 3mm. (I) calculate the capacitance of the capacitor. (II) if this capacitor is connected to 100V supply, what would be the charge on each plate? (III) how would charge on the plates be affected, if a 3mm thick mica sheet of $K=6$. is inserted between the plates while the voltage supply remains connected?

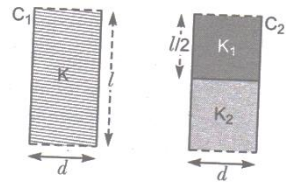
23. A parallel plate capacitor with air between the plates has a capacitance of 8pf. The separation between the plates is now reduced by half and the space between them is filled with a medium of dielectric constant is 5. calculate the value of the capacitance of the capacitor in the second case.

24. Two large, thin metal plates are parallel and close to each other on their inner faces, the plates have surface charge densities of opposite signs and of magnitude $17 \times 10^{-22} \text{ C/m}^2$. what is electric field strength E (I) in the outer region of the first plate (II) in the outer region of the second plate, and (III) between the plates?

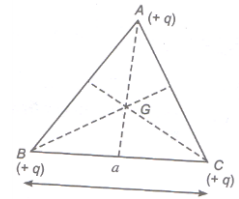
25. You are given an air filled parallel plate capacitor C_1 . the space between its plates is now filled with slabs of dielectric constant K_1 and K_2 as shown in C_2 . Find the capacitance of the capacitor C_2 if area of the plates is A distance between the plates is d .



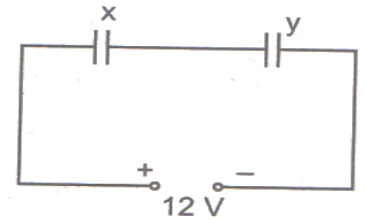
26. Two identical parallel plate (air) capacitors C_1 and C_2 have capacitances C each. The space between their plates is now filled with dielectrics as shown. if two capacitors still have equal capacitance, obtain the relation between dielectric constants K , K_1 , and K_2 .



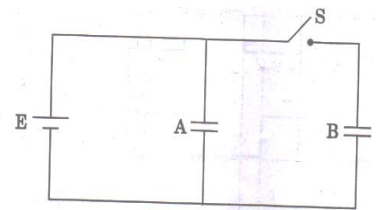
27. Three point electric charges $+q$ each are kept at the vertices of an equilateral triangle of side a . Determine the magnitude and sign of the charge to be kept at the centroid of the triangle so that the charges at the vertices remain in equilibrium.



28. X and Y are two parallel plate capacitors having the same areas of plates and same separation between the plates X has air between the plates and Y contain a dielectric medium $\epsilon_r = 4$. (I) calculate the capacitance of each capacitor if equivalent capacitance of the combination is $4\mu\text{f}$. (II) calculate the potential difference between the plates of X and Y. (III) what is the ratio of electrostatics energy stored in X and Y.



29. Two identical parallel plate capacitors A and B are connected to a battery of V volts with the switch S closed. The switch is now opened and the free space between the plates of the capacitors is filled with a di-electric of di-electric constant K . Find the ratio of the total electrostatic energy stored in both capacitors before and after the introduction of the dielectric.



30. An infinitely large thin plane sheet has a uniform surface charge density $+\sigma$. Obtain the expression for work done in bringing a point charge q from infinity to a point, distant r , in front of the charged plane sheet.
31. Derive an expression for the electric potential at a point due to an electric dipole. Mention the contrasting features of electric potential of a dipole at a point as compared to that due to a single charge.
32. Derive an expression for the capacitance of a parallel plate capacitor when a dielectric slab of dielectric constant K and thickness $t = \frac{d}{2}$ but of some area as that of the plates is inserted between the capacitor plates. (d =separation between the plates).
33. Derive an expression for the energy stored in a parallel plate capacitor C , charged to a potential difference V . hence derive an expression for the energy density of a capacitor.

Mathematics

1. Construct a 3×4 matrix whose elements are (a) $a_{ij} = 2i^3 + \frac{i}{j^2}$ (b) $a_{ij} = \frac{i-j^2}{i+j}$ (iii) $a_{ij} = i$.
2. (a) Find the matrix X such that $2A+B+X=O$, where $A = \begin{bmatrix} -1 & 2 \\ 3 & 4 \end{bmatrix}$ $B = \begin{bmatrix} 3 & -2 \\ 1 & 5 \end{bmatrix}$.
 (b) Solve the matrix equation $\begin{bmatrix} x^2 \\ y^2 \end{bmatrix} - 3 \begin{bmatrix} x \\ 2y \end{bmatrix} = \begin{bmatrix} -2 \\ 9 \end{bmatrix}$
3. If $A = \begin{bmatrix} 0 & 1 \\ -1 & 0 \end{bmatrix}$, find x and y such that $(xI + yA)^2 = A$.
4. Let $A = \begin{bmatrix} 0 & -\tan(\frac{\alpha}{2}) \\ \tan\frac{\alpha}{2} & 0 \end{bmatrix}$ and I be the identity matrix of order 2. Show that $I + A = (I - A) \begin{bmatrix} \cos \alpha & -\sin \alpha \\ \sin \alpha & \cos \alpha \end{bmatrix}$.
5. Find the value of x such that $\begin{bmatrix} 1 & x & 1 \\ 2 & 5 & 1 \\ 15 & 3 & 2 \end{bmatrix} \begin{bmatrix} 1 \\ 2 \\ x \end{bmatrix} = O$.
6. For what values of x and y the following matrices are equal
 a) $A = \begin{bmatrix} 2x+1 & 2y \\ 0 & y^2-5y \end{bmatrix}$ $B = \begin{bmatrix} x+3 & y^2+2 \\ 0 & -6 \end{bmatrix}$.
 b) $A = \begin{bmatrix} x+10 & y^2+2y \\ 0 & -4 \end{bmatrix}$ $B = \begin{bmatrix} 3x+4 & 3 \\ 0 & y^2-5y \end{bmatrix}$.
7. If $A_x = \begin{bmatrix} \cos x & \sin x \\ -\sin x & \cos x \end{bmatrix}$, then prove that (i) $A_x \cdot A_y = A_{x+y}$ (ii) $(A_x)^n = \begin{bmatrix} \cos nx & \sin nx \\ -\sin nx & \cos nx \end{bmatrix}$, for every positive integer n .
8. If a is a non zero real or complex number, use the PMI to prove that If $A = \begin{bmatrix} a & 1 \\ 0 & a \end{bmatrix}$, then $A^n = \begin{bmatrix} a^n & na^{n-1} \\ 0 & a^n \end{bmatrix}$, for every positive integer n .
9. If $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & -2 \\ a & 2 & b \end{bmatrix}$ is a matrix satisfying $AA^T = 9I_3$, then find the values of a and b .
10. Express the matrix $A = \begin{bmatrix} 3 & 2 & 3 \\ 4 & 5 & 3 \\ 2 & 4 & 5 \end{bmatrix}$ as the sum of a symmetric and a skew-symmetric matrix,
11. Find the number of all possible matrices of order 3×4 with each entry 0 or 1
12. Find the inverse of the following matrices using elementary row transformations:
 (i) $\begin{bmatrix} 0 & 1 & 2 \\ 1 & 2 & 3 \\ 3 & 1 & 1 \end{bmatrix}$ (ii) $\begin{bmatrix} 2 & 3 & 1 \\ 2 & 4 & 1 \\ 3 & 7 & 2 \end{bmatrix}$
13. Prove that : $\begin{vmatrix} a & a+b & a+b+c \\ 2a & 3a+2b & 4a+3b+2c \\ 3a & 6a+3b & 10a+6b+3c \end{vmatrix} = a^3$.

14. Using matrices solve the following system of linear equations : $x + y + z = 4$; $2x - y + z = -1$; $2x + y - 3z = -9$.
15. If $A = \begin{bmatrix} 3 & 1 \\ 7 & 5 \end{bmatrix}$, find x and y such that $A^2 + xI = yA$. Hence find A^{-1} .
16. Using properties of determinants, prove that $\begin{vmatrix} b+c & a & b \\ c+a & c & a \\ a+b & b & c \end{vmatrix} = (a+b+c)(a-c)^2$.
17. Using properties of determinants, prove that $\begin{vmatrix} a^2+2a & 2a+1 & 1 \\ 2a+1 & a+2 & 1 \\ 3 & 3 & 1 \end{vmatrix} = (a-1)^3$.
18. Solve for x, y, z $\frac{2}{x} + \frac{3}{y} + \frac{10}{z} = 4$; $\frac{4}{x} - \frac{6}{y} + \frac{5}{z} = 1$; $\frac{6}{x} + \frac{9}{y} - \frac{20}{z} = 2$.
19. Prove the following using properties of determinants:

$$\begin{vmatrix} a+bx^2 & c+dx^2 & p+qx^2 \\ ax^2+b & cx^2+d & px^2+q \\ u & v & w \end{vmatrix} = (x^4-1) \begin{vmatrix} b & d & q \\ a & c & p \\ u & v & w \end{vmatrix}$$
20. Solve (i) $\begin{vmatrix} x-2 & 2x-3 & 3x-4 \\ x-4 & 2x-9 & 3x-16 \\ x-8 & 2x-27 & 3x-64 \end{vmatrix} = 0$. (ii) $\begin{vmatrix} a+x & a-x & a-x \\ a-x & a+x & a-x \\ a-x & a-x & a+x \end{vmatrix} = 0$.
21. Evaluate $\begin{vmatrix} \cos A \cos B & \cos A \sin B & -\sin A \\ -\sin B & \cos B & 0 \\ \sin A \cos B & \sin A \sin B & \cos A \end{vmatrix}$.
22. If $A + B + C + \pi$, Prove that $\begin{vmatrix} \sin(A+B+C) & \sin(A+C) & \cos C \\ -\sin B & 0 & \tan A \\ \cos(A+B) & \tan(B+C) & 0 \end{vmatrix} = 0$.
23. Prove that $\begin{vmatrix} -bc & b^2+bc & c^2+bc \\ a^2+ac & -ac & c^2+ac \\ a^2+ab & b^2+ab & -ab \end{vmatrix} = (ab+bc+ca)^3$.
24. If $x \neq y \neq z$ and $\begin{vmatrix} x & x^2 & 1+x^3 \\ y & y^2 & 1+y^3 \\ z & z^2 & 1+z^3 \end{vmatrix} = 0$ then prove that $1 + xyz = 0$.
25. Prove that $\begin{vmatrix} a & b-c & c+b \\ a+c & b & c-a \\ a-b & a+b & c \end{vmatrix} = (a+b+c)(a^2+b^2+c^2)$.
26. Let $f: R \rightarrow R$ given by $f(x) = \sin^2 x + \sin^2(x + \frac{\pi}{3}) + \cos x \cos(x + \frac{\pi}{3}) \forall x \in R$, and $g: R \rightarrow R$ such that $g(\frac{5}{4}) = 1$, Then prove that $gof: R \rightarrow R$ is a constant function.
27. Check whether the relation R_1 on the set R of all real numbers, defined as $R_1 = \{(a, b): a \leq b^3\}$ is reflexive symmetric or transitive.
28. On the set $R - \{-1\}$ a binary operation $*$ is defined as $a * b = a + b + ab, \forall a, b \in R - \{-1\}$. Check whether $*$ is commutative and associative. Find the identity element and prove that every element in $R - \{-1\}$ is invertible and find inverse of an element. Also solve $(2 * x) * 3 = 7$.
29. Let R be a relation on $N \times N$, defined as $(a, b) R (c, d) \Leftrightarrow ad(b+c) = bc(a+d)$. Check whether R is an equivalence relation on $N \times N$.
30. Show that the function $f: R \rightarrow R$ given by $f(x) = x^3 + x + 2$ is a bijection.

31. Consider a relation R_1 on the set R of real numbers be defined as $(a, b) \in R_1 \Leftrightarrow 1 + ab > 0, \forall a, b \in R$. Check whether R_1 is reflexive, symmetric or transitive.
32. (a) If $f : R \rightarrow A$, given by $f(x) = x^2 - 2x + 2$ is onto function, find set A .
 (b) If $f:A \rightarrow B$ is bijective function such that $n(A) = 10$, then $n(B) = ?$
 (c) If $n(A) = 5$, then write the number of one-one functions from A to A .
33. $f :R \rightarrow R, g : R \rightarrow R$ given by $f(x) = [x], g(x) = |x|$ then find $(f \circ g)\left(-\frac{2}{3}\right)$ and $(g \circ f)\left(-\frac{2}{3}\right)$.
34. Consider $f:R^+ \rightarrow [-5, \infty)$ given by $f(x) = 9x^2 + 6x - 5$ show that f is invertible with $f^{-1} = \frac{\sqrt{x+6}-1}{3}$.
35. If $A = Q \times Q$ and $=^*$ be a binary operation defined by $(a, b) * (c, d) = (ac, b + ad)$, for $(a, b), (c, d) \in A$. Then with respect to $=^*$ on A (i) examine whether $=^*$ is commutative & associative (ii) find the identity element in A , (iii) find the invertible elements of A .
36. Find the domain of $f(x) = \ln\left(\frac{3-5x}{x^2-9}\right) \cdot \sin^{-1}\left(\log_3 \frac{x}{3}\right)$ (ii) $\sqrt{\frac{1-|x|}{|x|-2}}$.
37. Find the principal value of (i) $\cot^{-1}\left(-\frac{1}{\sqrt{3}}\right)$ (ii) $\operatorname{cosec}^{-1}(-\sqrt{2})$
38. Express $\tan^{-1}\left(\frac{\cos x}{1-\sin x}\right)$, $-\frac{\pi}{2} < x < \frac{\pi}{2}$ in the simplest form.
39. If $\tan^{-1}\frac{x-1}{x-2} + \tan^{-1}\frac{x+1}{x+2} = \frac{\pi}{4}$. Then find the value x .
40. Find the value of (i) $\sin^{-1}\left(\sin\left(\frac{3\pi}{5}\right)\right)$. (ii) $\cos^{-1}\left(\cos\left(\frac{7\pi}{6}\right)\right)$.
41. Solve $2 \tan^{-1}(\cos x) = \tan^{-1}(2 \operatorname{cosec} x)$.
42. Solve $\sin(\cot^{-1}(x+1)) = \cos(\tan^{-1} x)$
43. Solve $\tan^{-1} 2x + \tan^{-1} 3x = \frac{\pi}{4}$.
44. Solve $\tan^{-1}\left(\frac{x-1}{x-2}\right) + \tan^{-1}\left(\frac{x+1}{x+2}\right) = \frac{\pi}{4}$
45. Prove that $\tan^{-1} 1 + \tan^{-1} 2 + \tan^{-1} 3 = \pi$
46. Prove that $\tan^{-1}\left(\frac{\sqrt{1+x}-\sqrt{1-x}}{\sqrt{1+x}+\sqrt{1-x}}\right) = \frac{\pi}{4} - \frac{1}{2} \cos^{-1} x$.

Physical Education

1. Write any one game in your practical file?
 (i) Hockey (ii) Badminton (iii) Kabaddi (iv) Cricket
 (v) Kho-Kho (vi) Volleyball (vii) Football
2. Write the latest rule, fundamental skills, terminology & measurement of ground/court?
3. Draw a neat and clean diagram of ground & court?
4. Write famous personalities and important tournament of your game?
5. Write BMI with its calculation? Calculate BMI of any ten person of your family?

6. Write Athletics In your practical file with jumping and throwing event?
7. Learn chapter 1 to 3 of your physical education book thoroughly?

English

Question from Flamingo and Vistas

1. What had been put up on the bulletin-board?
2. How did Franz Feelings about M.Hamel and school change?
3. What was Franz expected to be prepared with for school that day?
4. What was unusual about M.Hamel's dress on his last day in the school?
5. Why the order from Berlin is called a '**thunderclap**' by Franz?
6. Who were sitting on the benches during M.Hamel's last lesson? Why?
7. What did Franz see when he passed the town hall?
8. Why did Franz think of running away from school that morning?
9. What made M.Hamel cry towards the end of his last lesson?
10. "He had the courage to hear every lesson to the very last." What led Franz to make this remark?
11. What makes the city of Firozabad famous?
12. What forces conspire to keep the workers in the bangle industry of Firozabad in poverty?
13. What explanation does the author offer for the children not wearing footwear?
14. What is Saheb looking for in the garbage dumps? Where is he and where has he come from?
15. Who is Mukesh? What is his dream?
16. What was Saheb full name? Why was it ironical?
17. How was Saheb's life at tea stall?
18. How is Mukesh different from other bangle makers of Firozabad?
19. Describe Mukesh as an ambitious person.
20. Why had the rag pickers come to live in Seemapuri?
21. Why could the Bangle makers not organize themselves into a cooperative?
22. What is the 'misadventure' that William Douglas speaks about?
23. How did Douglas make sure that he had conquered the old terror?
24. Why was Douglas determined to get over his fear of water?
25. How did the instructor build a swimmer out of William Douglas?
26. When Douglas realized that he was sinking, how did he plan to save himself?

27. What was the immediate effect of Douglas' experience of nearby drowning in the pool and what was the long term effect?
28. What was Douglas 'initial reaction on being thrown into the pool?
29. From where did the peddler get the ideas of the world being rattrap?
30. Did the peddler respect the confidence reposed in him by the crofter?
31. Why was crofter so talkative and friendly with the peddler?
32. Why was peddler amused by the idea of the world being rattrap?
33. Why did the crofter show his thirty kronor to the peddler?
34. Did the peddler expect the kind of hospitality that he received from the crofter? If no, give reasons to support your answer.
35. When did the ironmaster realize his mistake? What was the mistake?
36. Why did the peddler decline the invitation of the ironmaster?
37. What doubts did Edla have about the peddler?
38. Why was Edl happy to see the gift left by the peddler?
39. Why did Edla entertain the peddler even after she had known the truth about him?
40. Why did the ironmaster speak kindly to the peddler and invite him home?
41. What made the peddler accept Elda Willmansson's invitation?
42. Who was the owner of Ramsjo ironmill? Why did he visit the mull at night?
43. Why didn't the stranger(the peddler) tell the ironmaster that he was not Nils Olof?
44. What was content of the letter written to Edla by the peddler?
45. 'The man was just generous with his confidence as with his porridge and tobacco. 'What was the outcome of this?

Writing Section Questions

46. You are Karan Kumar/Karuna Bajaj, a leading lawyer practicing in Surat .You want to buy an independent house at City Light Road to be used as office -cum-residence. Draft an advertisement in about 50 words for the classified columns of a local newspaper. You can be contacted at 456676768766.
47. Along with air and water pollution, our cities are also under an attack of noise pollution. Marriage processions, DJs during wedding receptions, loud music from neighbourhood, flats etc. are all sources of noise which is not goods for the old, the ailing and students. Write a letter in 120-150 words to the Editor of a local newspaper describing the problem and making a request to the concerned authorities to solve it. You are Rahul/Rachita M-114, Mall Road, Delhi.

48. In all big cities, road rage has become a serious problem. A minor scratch, a little push or a small brushing past can lead to a scuffle sometimes resulting even in murder. Write a letter in 120-150 words to the Police Commissioner giving your views on the problem and its solutions. You are Mohit/Manshi, M-114, Mall Road Delhi.
49. 'Brain Drain is Not a Bane for a Developing Country like India'. Write a debate in 150-200 words either for or against the motion.
50. Write a speech in 150-200 words on the topic. 'Discipline Shapes the Future of a student'. It is to be delivered in the morning assembly. You are Anil/Anita.
51. Education has always been a noble Profession. Our ancestors received their learning at gurukuls and ashrams. Even in the near past pathshalas(schools) were associated with places of worship. Today, education is fast becoming commercialised, parents have to pay a lot of money on coaching classes, tuition fees etc. Write an article in 150-200 words on 'The State of Education Today'. You are Ravi/Rama.

