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DAV PUBLIC SCHOOL, KOTKAPURA

Where excellence is a tradition...

(Affiliated to C.B.S.E., New Delhi, Affiliation No. 1630101)

Happy Holidays

Summer Vacation: 21.05.2024 (Tuesday) to 30.06.2024 (Sunday)
The school will reopen on: 01.07.2024 (Monday)

SUMMER BREAK ASSIGNMENT **CLASS-XII (SCIENCE)**

Important Instructions:

Respected Parents/Dear Students

Namaskar

- ❖ Get up early in the morning and go out for a walk daily.
- ❖ Make a bird feeder and place seeds & water for them regularly.
- ❖ Raise a small kitchen garden by planting seeds.
- ❖ Learn any one folk song.
- ❖ Help your mother in cooking and salad decoration.
- ❖ Revise syllabus of all subjects done before summer vacation.
- ❖ Try to make your handwriting/reading better by practising & do your homework in good handwriting.
- ❖ Learn all the prayers and mantras given in the Student Almanac.
- ❖ Use a separate single notebook for Holiday Homework.
- ❖ The homework will be evaluated and subject enrichment marks will be allotted in Term-I result.
- ❖ Read "**The Tribune**" newspaper daily to update themselves with current affairs.
- ❖ Listen news bulletin on BBC channel and note top 5 news on your notebook daily.
- ❖ **REVISE SYLLABUS COVERED IN MONTH OF APRIL & MAY FOR UPCOMING PERIODIC-I EXAMINATION.**

ENGLISH

Part 1: Creative Writing

1. Personal Narrative:

Write a personal narrative about a significant event or experience from your life. Describe how it has shaped who you are today (*Aim for 200-300 words*).

2. Flash Fiction:

Compose a flash fiction story that begins with the line, "On the first day of summer, everything changed." Your story should be between 200-300 words and include a twist ending.

3. Poetry:

Write a poem on the theme of "Change and Transformation." It can be in any poetic form and should be at least of 14 lines.

4. Literary Analysis

1. Presentation:

Create a 10-minute presentation based on any theme of your fiction stories or poetry. Use visual aids such as slides, charts, or videos. Be prepared to present this to the class after the holidays.

2. Reflection Journal:

Maintain a weekly journal throughout the summer break. Each entry should be at least one page long. Reflect on your reading, writing experiences and any other activities you engage in. Pay special attention to how these experiences influence your thoughts and feelings.

Part 2: Language and Vocabulary

1. Vocabulary Log:

Learn and log 10 new words each week. For each word, include:

- The word and its part of speech
- Definition
- A sentence using the word
- Synonyms and antonym

Part 3 Critical thinking and speaking skills.

Prepare the following topics for declamation.

1. Climate Change and Environmental Responsibility.
2. Economic Inequality and Social Justice
3. Global Health Crises
4. Artificial Intelligence and Ethic
5. Immigration -Bane or Boon.

Part -4 Literature :Revise the syllabus covered in the month of April and May.

Part-5 Project Work: Prepare a project on any topic discussed in the class to be submitted immediately after the summer break.

PHYSICS

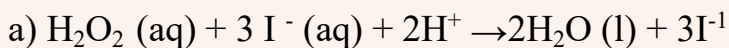
- ❖ Do the NEET and JEE mains multiple choice questions and assertion reasons from reference book SL ARORA -Unit 2 (Chapter 3 Current Electricity), Unit-3 (Electrostatics)

- ❖ Higher order thinking skills from SL ARORA of Chapter -3 (upto EMF)
- ❖ Prepare the sheet of formulae used in chapter 1,2 and 3 in neat and clean handwriting AND paste it on FNB.
- ❖ Complete the given assignment of Chapter -3

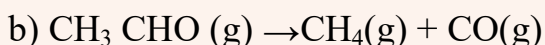
CHEMISTRY

1. Define the term rate of reaction.
2. Explain the difference between average rate & Instantaneous rate of reaction
3. For the reaction $R \rightarrow P$, the concentration of a reactant changes from 0.03M to 0.02M in 25 minutes. Calculate the average rate of reaction using units of time both in minutes and seconds.
4. In a reaction $2A \rightarrow \text{Products}$, the concentration of A decreases from 0.5 mol L^{-1} to 0.4 mol L^{-1} in 10 minutes. Calculate the rate during this interval?
5. For the reaction $2\text{N}_2\text{O}_5(\text{g}) \rightarrow 4\text{NO}_2(\text{g}) + \text{O}_2(\text{g})$ the rate of formation of $\text{NO}_2(\text{g})$ is $2.8 \times 10^{-3} \text{ Ms}^{-1}$. Calculate the rate of disappearance of $\text{N}_2\text{O}_5(\text{g})$
6. For the reaction $\text{H}_2 + \text{Cl}_2 \rightarrow 2 \text{HCl}$, Rate = k, Write the order, Molecularity & unit of k.
7. For the reaction $2\text{NH}_3 \rightarrow \text{N}_2 + 3\text{H}_2$ Rate = k, Write the order, Molecularity & unit of k.
8. The decomposition of N_2O_5 in CCl_4 at 318K has been studied by monitoring the concentration of N_2O_5 in the solution. Initially the concentration of N_2O_5 is 2.33 mol L^{-1} and after 184 minutes, it is reduced to 2.08 mol L^{-1} . The reaction takes place according to the equation $2 \text{N}_2\text{O}_5(\text{g}) \rightarrow 4 \text{NO}_2(\text{g}) + \text{O}_2(\text{g})$. Calculate the average rate of this reaction in terms of hours, minutes and seconds. What is the rate of production of NO_2 during this period?
9. Explain the term rate law. Define rate constant.
10. Write a short note on Order of reaction. Give the units of rate constant for zero, first & second order reaction.
11. Express the rate of the following reaction in terms of disappearance of hydrogen & formation of ammonia in the reaction : $3\text{H}_2 + \text{N}_2 \rightarrow 2\text{NH}_3$
12. For a reaction, $\text{A} + \text{B} \rightarrow \text{product}$, the rate law is given by $r = K [\text{A}]^{1/2} [\text{B}]^2$ what is the order of the reaction?
13. Write the rate equation for the reaction $2\text{A} + \text{B} \rightarrow \text{C}$ if the order of the reaction is zero.
14. The conversion of molecules x to y follows second order kinetics. If the concentration of x is increased to three times, how will it affect the rate of formation of y?
15. Calculate overall order of a reaction for rate expressions
 - (a) Rate = $k [\text{A}]^{1/2} [\text{B}]^{3/2}$
 - (b) Rate = $k [\text{A}]^{3/2} [\text{B}]^{-1}$
16. Identify the reaction order from of the following rate constants.
 - (i) $k = 2.3 \times 10^{-5} \text{ L mol}^{-1} \text{ s}^{-1}$
 - (ii) $k = 3 \times 10^{-4} \text{ s}^{-1}$

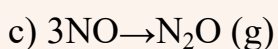
17. From the rate expression for the following reactions determine their order of reaction and dimensions of the rate constants.



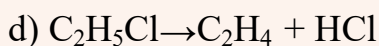
$$\text{Rate} = k [\text{H}_2\text{O}] [\text{I}^-]$$



$$\text{Rate} = k [\text{CH}_3\text{CHO}]^{3/2}$$



$$\text{Rate} = k [\text{NO}]^2$$



$$\text{Rate} = k[\text{C}_2\text{H}_5\text{Cl}]$$

18. The decomposition reaction of ammonia gas on platinum surface has a rate constant = $2.5 \times 10^{-4} \text{ mol L}^{-1} \text{ S}^{-1}$. What is the order of the reaction?

19. For the reaction: $2\text{A} + \text{B} \rightarrow \text{A}_2\text{B}$ the rate = $k[\text{A}][\text{B}]^2$ with $k = 2.0 \times 10^{-6} \text{ mol}^{-2} \text{ L}^2 \text{ s}^{-1}$.

Calculate the initial rate of the reaction when $[\text{A}] = 0.1 \text{ mol L}^{-1}$, $[\text{B}] = 0.2 \text{ mol L}^{-1}$.

Calculate the rate of reaction after $[\text{A}]$ is reduced to 0.06 mol L^{-1} .

20. A reaction is first order in A and second order in B. Write differential rate equation.

ii) How is the rate affected when concentration of B is tripled?

iii) How is the rate affected when the concentration of both A and B is doubled?

21. A reaction is second order with respect to a reactant. How is the rate of reaction affected if the concentration of the reactant is (i) doubled (ii) reduced to half?

22. For the reaction $\text{A} \rightarrow \text{B}$ the rate becomes 27 times when the concentration of A is increased 3 times. What is the order of reaction?

23. For the reaction $\text{A} \rightarrow \text{B}$, the rate of reaction becomes three times when the concentration of A is increased nine times. What is the order of the reaction?

24. The conversion of molecules x to y follows second order kinetics. If the concentration of x is increased to three times, how will it affect the rate of formation of y?

25. For the reaction $2\text{X} \rightarrow \text{X}_2$, the rate of reaction becomes three times when the concentration of X is increased 27 times. What is the order of the reaction?

26. For the reaction $\text{A} \rightarrow \text{B}$, the rate of reaction becomes three times when the concentration of A is increased nine times. What is the order of the reaction?

27. The decomposition of NH_3 on platinum surface is zero order reaction. What are the rates of production of N_2 and H_2 if $k = 2.5 \times 10^{-4} \text{ mol L}^{-1} \text{ S}^{-1}$?

BIOLOGY

- Solve the MCQs, Assertion Reason and Case Study Based questions from Elementary Of Biology From Ch- 1 to 4.
- Draw Diagrams of Human Male reproductive system, human female reproductive system. Gametogenesis, T.S of ovary, seminiferous tubules, Graffian follicle, Menstrual cycle, Fertilization, Implantation, Monocot and Dicot Seeds, L.S of pollen pistil interaction, Anther, Pollen grain, development of male gametophyte in plants, development of female gametophyte in plants on A4 sheets.
- Draw Mind maps of Chapter 1,2 and 4.

- Prepare a PPT on-
 - ❖ Ch -1 Sexual Reproduction in Flowering plants. (ROLL NO. 1 TO 10)
 - ❖ Ch -2 Human Reproduction (ROLL NO. 11 TO 20)
 - ❖ Ch- 4 Principles of Inheritance and Variation (Roll no. 21 to 32)
- Complete the given assignment of Chapter 4

MATHEMATICS

Chapters – 1 (Relations & Functions), 2 (Inverse Trigonometric Functions), 3 (Matrices), 4 (Determinants), 12 (Linear Programming)

- Revise Chapters – 1, 2, 3, 4,12 from NCERT with examples
- Solve the MCQs, Assertion Reason and Case Study Based questions from RD Sharma.
- Solve previous years questions (Chapter wise) from RD Sharma.
- Prepare a PPT on :-
 - Ch 1 Relation and Function (Roll no. 1 to 15)
 - Ch 2 Inverse trigonometric function (Roll no. 16 to 28)
- Draw the graphs of inverse trigonometric function on graph sheet and paste them on A4 sheet.

MATHEMATICS (ADDITIONAL)

Chapter – 3 (Matrices), 4 (Determinants), 12 (Linear Programming)

- Revise the above given chapters with examples.
- Solve the MCQs, Assertion Reason and Case Study Based questions.
- Solve previous years questions (Chapter wise)

PHYSICAL EDUCATION

- ❖ Complete Record File that shall include:
 - Practical 1: fitness test administration . (SAI Khelo India Test)
 - Practical 2: procedure for Asanas, benefits, and contraindication for any two Asanas for each lifestyle disease.
 - Practical 3: Anyone IOA recognised, sports /games of choice. Labelled diagram of field and equipment. Also mention its rules , Terminologies and skill.
- ❖ Revise these Topics:
 - Fixture of knockout & League
 - Fitness Test - SAI Khelo India Fitness test in school
 - Types of Lever
 - Friction & sports

INFORMATICS PRACTICES

Solve the given Assignment on your fair Notebook:

Q. Difference between Group By and Order By

Q. What is the Cartesians product/joins/Cross joins?

Q. A table FLIGHT has 4 rows and 2 columns and another table AIRHOSTESS has 3 rows and 4 columns. How many rows and columns will be there if we obtain the Cartesian product of these two tables?

Q. Write the output of the following SQL queries:

(i) SELECT RIGHT ('software', 2);

(ii) SELECT INSTR ('twelve', IV);

(iii) SELECT DAYOFMONTH ('2014-03-01');

(iv) SELECT (76.987,2);

Q. What is the purpose of GROUP BY clause in MySQL? How is it different from ORDER BY clause?

Q. Shanya Khanna is using a table EMPLOYEE. It has the following columns:

Admno, Name, Agg, Stream [column Agg contains Aggregate marks]

She wants to display highest Agg obtained in each Stream.

She wrote the following statement:

But she did not get the desired result. Rewrite the above query with necessary changes to help her get the desired output.

Q:-State difference between date functions NOW () and SYSDATE() of MySql.

Q. Write suitable SQL queries for the following:

i. To calculate the exponent for 3 raised to the power of 4.

ii. To display current date and time.

iii. To round off the value -34.4567 to 2 decimal place.

iv. To remove all the probable leading and trailing spaces from the column userid of the table named user.

v. To display the length of the string 'FIFA World Cup'.

Q. Which clause is used to see the output of query in ascending or descending order?

Q. Which option of ORDER BY clause is used to arrange the output in descending order?

Q. The following query is producing an error. Identify the error and also write the correct query.

```
SELECT * FROM EMP ORDER BY NAME WHERE SALARY >= 5000;
```

Q. Which SQL function is used to get the average value of any column?

Q. What is the difference between COUNT() and COUNT(*) function?

- Q. Write the Query to delete all record of table without deleting the table:
 Q. Which SQL function is used to find the highest and lowest value of numeric and date type column?
 Q. What is the default order of sorting using ORDER BY?
 Q. What is the difference between CHAR and VARCHAR?

Write SQL queries for (i) to (iv) and write outputs for SQL queries (v) to (viii), which are based on the table given below:

Table: TRAINS

TNO	TNAME	START	END
11096	Ahimsa Express	Pune Junction	Ahmedabad Junction
12015	Ajmer Shatabdi	New Delhi	Ajmer Junction
1651	Pune Hbj Special	Pune Junction	Habibganj
13005	Amritsar Mail	Howrah Junction	Amritsar Junction
12002	Bhopal Shatabdi	New Delhi	Habibganj
12417	Prayag Raj Express	Allahabad Junction	New Delhi
14673	Shaheed Express	Jaynagar	Amritsar Junction
12314	Sealdah Rajdhani	New Delhi	Sealdah
12498	Shane Punjab	Amritsar Junction	New Delhi
12451	Shram Shakti Express	Kanpur Central	New Delhi
12030	Swarna Shatabdi	Amritsar Junction	New Delhi

Table: PASSENGERS

PNR	TNO	PNAME	GENDER	AGE	TRAVELDATE
P001	13005	R N AGRAWAL	MALE	45	2018-12-25
P002	12015	P TIWARY	MALE	28	2018-11-10
P003	12015	S TIWARY	FEMALE	22	2018-11-10
P004	12030	S K SAXENA	MALE	42	2018-10-12
P005	12030	S SAXENA	FEMALE	35	2018-10-12
P006	12030	P SAXENA	FEMALE	12	2018-10-12
P007	13005	N S SINGH	MALE	52	2018-05-09
P008	12030	J K SHARMA	MALE	65	2018-05-09
P009	12030	R SHARMA	FEMALE	58	2018-05-09

- a) To display details of all Trains which starts from New Delhi

- b) To display PNR, PNAME, GENDER and AGE of all passengers whose AGE is below 50
- c) To display total numbers of MALE and FEMALE passengers
- d) To display records of all passengers travelling in trains whose TNO is 12015
- e) `SELECT MAX(TRAVELDATE),MIN(TRAVELDATE) FROM PASSENGERS WHERE GENDER='FEMALE';`
- f) `SELECT END, COUNT(*) FROM TRAINS GROUP BY END HAVING COUNT(*)>1;`
- g) `SELECT DISTINCT TRAVELDATE FROM PASSENGERS;`
- h) `SELECT TNAME, PNAME FROM TRAINS T, PASSENGERS P WHERE T.TNO=P.TNO AND AGE BETWEEN 50 AND 60`

Q. Sarthya, a student of class XI, created a table "RESULT". Grade is one of the column of this table. To find the details of students whose Grades have not been entered, he wrote the following MySQL query, which did not give the desired result.
`SELECT * FROM Result WHERE Grade= "Null";`
 Help Sarthya to run the query by removing the errors from the query and write the correct Query.

Q. You want to group the result set based on some column's value. Also, you want that the grouped result should appear in a sorted order. In which order will you write the two clause (for sorting and for grouping). Give example to support your answer.

Q. Write a query to display the Sum, Average, Highest and Lowest salary of the employees grouped by department number.

Q. Write a query to display the difference of highest and lowest salary of each department having maximum salary > 4000.

Q. Which SQL aggregate function is used to count all records of a table?

Q. Gopi Krishna is using a table Employee. It has the following columns:

Code, name, Salary, Deptcode

He wants to display maximum salary departmentwise. He wrote the following command:

Select Deptcode,Max(Salary) fro employee;

But he did not get the desired result.

Rewrite the above query with necessary changes to help him get the desired output.

Q. Sonia is using a table Employee. It has the following columns:

Admno, Name, Agg, Stream [column Agg contains Aggregate marks]

She wants to display highest Agg obtained in each Stream.

She wrote the following statement:

Select Stream,Max(Agg) from Employee;

But he did not get the desired result.

Rewrite the above query with necessary changes to help him get the desired output.

PAINTING

Revise the following topics:

- 1.Origin and Development of Mughal School*
- 2.Characteristics of Deccan school and Rajasthani school
- 3.The evolution of Indian National Flag
- 4.Describe paintings-
 - * Hazrat nNizamudin Auliya and Amir Khusro
 - * Chand Bibi playing polo
 - *Journey's end
 - *Shiv and sati
 - *Radhika
 - *Meghdoot (*Make any four Painting*)

MUSIC

Write following topics on fair notebook and also learn these topics:-

- 1.Classification of raag
2. Time theory of raag
3. Granths (Sangeet Ratnakar, Sangeet Parijat)
4. One folk song

इन विषयों को नोटबुक पर लिखें और याद करें:-

- 1.राग का वर्गीकरण
- 2.रागों का समय सिद्धांत
- 3.ग्रंथ (संगीत रत्नाकर, संगीत पारिजात) एक लोकगीत
