

English (301)

1. Make a PPT on varied 'poetic devices.' Do mention their definitions citing examples from the poems and prose from the prescribed syllabus.

Note:

- i. Each poetic device to be prepared in different slide.
- ii. Minimum number of poetic devices to be dealt with should be 10.
- iii. For a particular poetic device, do cite examples from various poems/prose and also mention the name of the chapter in bracket.

2. Imagine that you have to organise a festival in your school to celebrate 153rd anniversary of Gandhiji. The objectives are to-

- ❖ create an awareness about Gandhiji
- ❖ follow Gandhian principles
- ❖ lay special emphasis on vasudhaiva kutumbakam

You plan to have at least 6 events, with rules, duration and other necessary details. Give interesting names to the events. Design a brochure for this festival (can do it on paper or digitally).

Or

Design a video game, with rules for participation, with the theme- Landmark events in Gandhiji's life. Write the rules for the game.

Or

You decide to have a food court with cuisine of places where Gandhiji had visited in a school carnival. Name any 5 places you would choose, with one recipe from each place. Design an advertisement for this food court.

Or

Design a school uniform with khadi, using Sohrai paintings, like Sabyasachi has used bandhini for a school uniform in Jaipur.

Or

After reading Gandhi's autobiography, write a poem on My experiment with truth

Or

Design a poster for a panel discussion on 'Relevance of Gandhian principles today'.

Or

Draw on the theme- 'The earth has enough for everyone's need but not for everyone's greed'.

Physics (042)

Investigatory project for Practical Board Exam

1. A.C. Generator
2. Half wave rectifier
3. Full wave rectifier
4. To investigate the relation in Transformer, between the ratio of
 - (i) Output and input voltage
 - (ii) No. of turns in the secondary coil & primary coil of a self-designed transformer
5. To study and investigate the phenomenon of **electromagnetic induction**.
6. To investigate the resistance pattern in the circuit of **Sequential glow of LED**
7. To observe **Diffraction of light** due to a thin slit.
8. To observe the **interference pattern** of light through double slit

Chemistry (043)

Investigatory Projects

1. Study of the acidity of different samples of tea leaves.
2. Determination of the rate of evaporation of different liquids.
3. Study of common food adulterants in food stuffs like; sugar, butter, turmeric powder etc .
4. Preparation of rayon thread from filter paper using cuprammonium process.
5. Analysis of vegetable and fruit juices.
6. Study of casein quantity present in different samples of milk.

Note:-

- 1) Students required to complete anyone project out of the given above projects during Durga puja vacation.
- 2) Presentation of the findings of a project is as important as its successful completion. The investigated projects are, generally, reported in the following format:
 - a. Preliminary: (i) Title of the project. (ii) Table of contents. (iii) List of graphs and figures (if any).
 - b. Introduction: (i) History (ii) Scope for further work (iii) Objective of the project.
 - c. Experimental: i) Details of each experiment performed. (ii) Tabulation of data.
 - d. Discussion and conclusions: (i) Generalisation of the data. (ii) theory and conclusion. (iii) Suggestions for further work.
 - e. Bibliography: List of books, consulted in execution of the project.

Biology (044)

Investigatory Projects

1. Pollination
2. Oogenesis
3. Population Interaction.
4. Heart Disease
5. Menstrual cycle
6. Eye disorder in children and Adolescents
7. Human Reproduction
8. Pregnancy and Embryonic Development
9. AIDS/HIV
10. Twins
11. Malaria
12. Reproductive Health

Note:-

- 1) Students are required to complete anyone project out of the given above projects during Durga puja vacation.
- 2) The investigated projects will be in the following format:
 - a. Preliminary: (i) Title of the project. (ii) Certificate (iii) Acknowledgement (iv) Index.
 - b. Introduction: (i) History (ii) Scope for further work (iii) Objective of the project. (iv) Well labelled coloured diagrams.
 - c. Discussion and conclusions: (i) Generalisation of the data if given any (ii) theory and conclusion. (iii) Suggestions for further work.
 - d. Bibliography: List of books consulted in execution of the project.

Standard Maths (041)

1. Let $f : N \rightarrow N$ be defined as $f(x) = \begin{cases} \frac{x+1}{2} & \text{if } x \text{ is odd} \\ \frac{x}{2} & \text{if } x \text{ is even} \end{cases}, x \in N$. State whether function f is bijective
2. Let $f : \{2, 3, 4, 5\} \rightarrow \{3, 4, 5, 9\}$ and $g : \{3, 4, 5, 9\} \rightarrow \{7, 11, 15\}$ be two functions defined as : $f(2) = 3, f(3) = 4, f(4) = 5, f(5) = 9, g(3) = g(4) = 7$ and $g(5) = g(9) = 11$. Find $g \circ f(x)$
3. Find the value of $\tan \left[\frac{7\pi}{12} - 2 \sin^{-1} \left(\frac{1}{2} \right) \right]$

4. Simplify $\sin \left[\sec^{-1} \left(\frac{1+x^2}{1-x^2} \right) \right]$
5. If $A = \begin{bmatrix} 3 & -5 \\ -4 & 2 \end{bmatrix}$, show that $A^2 - 5A - 14I = 0$. Hence, find A^{-1}
6. Solve for x: $\begin{vmatrix} (x+3) & (x-1) \\ (x+2) & (3x-1) \end{vmatrix} = \begin{vmatrix} x & 1 \\ -17 & x \end{vmatrix}$
7. Using properties of determinants, show that $\Delta = \begin{vmatrix} b+c & a & a \\ b & c+a & b \\ c & c & a+b \end{vmatrix} = 4abc$
8. If matrix $A = \begin{bmatrix} 2 & 3 & 1 \\ 1 & 4 & 2 \\ 3 & 7 & 5 \end{bmatrix}$, find (adj A)
9. If $y = a \sin x + b \cos x$, prove that $y^2 + \left(\frac{dy}{dx} \right)^2 = a^2 + b^2$
10. If $y = \tan^{-1} \left(\frac{a}{x} \right) + \log \sqrt{\frac{x-a}{x+a}}$, prove that: $\frac{dy}{dx} = \frac{2a^3}{x^4 - a^4}$
11. The side of a square is increasing at the rate of 2 cm/sec, find out at what rate the perimeter, area and diagonal of the square is increasing with respect to time when length of the square is 25 cm ?
12. Verify Rolle's theorem for the function $f(x) = x^3 - 7x^2 + 16x - 12$ on [2,3]
13. Verify LMV theorem for the function $f(x) = x^3 - 5x^2 - 3x$ on [2,3]
14. Prove that the function given by $f(x) = x^3 - 6x^2 + 12x - 18$ is an increasing function on R
15. Evaluate $\int (2^x + 3^x)^2 dx$
16. $\int (\tan^5 x) dx$
17. $\int \frac{(x+4) dx}{\sqrt{4-9x^2}}$
18. Change into partial fractions: $\frac{3x^2 + 5}{(x^2 + 4)(x^2 + 1)}$
19. $\int \frac{\cos x dx}{(1 - \sin x)(2 - \sin x)}$
20. $\int \frac{(\log x) dx}{(x+1)^2}$

Applied Maths (241)

1. What are the characteristics of index number?
2. Explain different types of index numbers.
3. Ms. Rajni deposited Rs. 10000 in a bank at 4% interest compounded continuously. How much amount will she get after 10 years? ($e^{0.4} = 1.49182$)
4. Assume that a spherical rain drop evaporates at a rate proportional to its surface area. If its radius originally is 3 mm and 1 hour later has been reduced to 2 mm, find an expression for the radius of the rain drop at any time.
5. A population grows at the rate of 2% per year. How long does it take for the population to double itself?

Computer Science (083)

Prepare a PPT that includes:

1. Key points and definition of the chapter 'Database Concepts'.
2. List of DDL commands with syntax and example.
3. List of DML commands with syntax and example.

Informatics practices (065)

1. Consider a table DOCTOR with the following data:

TABLE: DOCTOR

ID	NAME	DEPT	SEX	EXPERIENCE	Consultation Fees
101	JOHN	ENT	M	12	1000
104	SMITH	ORTHPEDIC	M	5	350
107	GEORGE	CARDIOLOGY	M	10	800
114	LARA	SKIN	F	3	250
109	K GEORGE	MEDICINE	F	9	850
105	JOHNSON	ORTHPEDIC	M	10	1000
117	LUCY	ENT	F	3	250
111	BILL	MEDICINE	F	12	1200
130	MORPHY	ORTHPEDIC	M	15	1500

Answer all the queries and also display the output generated on execution of above queries.

1. WAQ to count the number of doctors in each department.
2. WAQ to count the number of doctors in ENT and SKIN departments.
3. WAQ to display the maximum experience of MALE and FEMALE doctors.
4. WAQ to display the sum and average fees of doctors in each department.
5. WAQ to arrange the data in ascending order of experience.
6. WAQ to display Name and Consultation fees in descending order of fees.
7. WAQ to display the number of doctors in each department where number >3.

2. Consider a table FLIGHT with the following data:

TABLE: FLIGHTS

FL_NO	STARTING	ENDING	AIRLINES	FARE
IC301	MUMBAI	DELHI	INDIAN AIRLINES	6500
IC799	BANGLORE	DELHI	SAHARA	9400
MC101	INDORE	MUMBAI	JET AIRWAYS	13400
IC302	DELHI	MUMBAI	INDIAN AIRLINES	8300
AM812	KANPUR	BANGALORE	INDIAN AIRLINES	4300
IC899	MUMBAI	KOCHI	INDIAN AIRLINES	10500
AM501	DELHI	TRIVANDRUM	DECCAN AIRLINES	3500
MU499	MUMBAI	MADRAS	SAHARA AIRLINES	4500
IC701	DELHI	AHMEDABAD	INDIAN AIRLINES	6500

Answer all the queries and also display the output generated on execution of above queries.

1. WAQ to count the number of flights in each airlines.
2. WAQ to display the maximum and minimum fare in all airlines.
3. WAQ to display the sum and average fares of flights in each airlines where ENDING is DELHI or MADRAS.
4. WAQ to arrange the data in descending order of fare.
5. WAQ to count the number of flights in SAHARA and JET AIRWAYS.

3. Write SQL commands and output based on following relations.

TABLE: CONSIGNEE

CNEEID	CNORID	CNEENAME	CNEEADDRESS	CNEECITY
MU05	ND01	RAHUL KISHORE	5, PARK AVENUE	MUMBAI
ND08	ND02	P DHINGRA	16/J MOORE ENCLAVE	NEW DELHI
KO19	MU15	A P ROY	2A CENTRAL AVENUE	KOLKATA
MU32	ND02	S MITTAL	P245, AB COLONY	MUMBAI
ND48	MU50	B P JAIN	13 BLOCK-D A VIHAR	NEW DELHI

TABLE: CONSIGNOR

CNORID	CNORNAME	CNORADDRESS	CITY
ND01	R SINGHAL	24, ABC ENCLAVE	NEW DELHI
ND02	AMIT KUMAR	123, PALM	NEW DELHI
MU15	R KOHLI	5/A SOUTH STREET	MUMBAI
MU50	S KAUR	27 K WESTEND	MUMBAI

1. To display the names of all consignees as well as consignors.
2. To display the names of all consignees as well as consignors where consignee city is Delhi.
3. To display the number of consignors from each city
4. Select a.cnorname, b.cneename from consignor a, consignee b where a.cnorid = b.cnorid and cneecity = 'MUMBAI';

Physical Education (048)

1. Explain any three Rikli & Jones senior citizen fitness test.
2. Effects of exercise on muscular system.
3. Write down the classification of sports injury.

Painting (049)

1. Draw one watercolour landscape with your own imagination.
2. Write the contribution of Indian artists in the struggle for National Freedom Movement.

NOTE- Make your assignment in a decorated file.

HVM (034)

1. Write the notation of Drut Khayal in Rag Bageshri.
2. Write the taal notation of Dhamar taal with dugun, teegun, chaugun laykari.

