



DELHI PUBLIC SCHOOL GAYA

(Under the aegis of the Delhi Public School Society, New Delhi)
Affiliated to C.B.S.E, New Delhi Affiliation No.330530, School Code – 65572

WINTER VACATION ASSIGNMENT CLASS-XI (SESSION: 2024-25)

Your Winter Vacation assignment has some very interesting tasks that will make your learning session fun and engaging. So, let's start!

ENGLISH CORE (301)

Written Work

- "Albert Einstein at School"
Albert Einstein faced rejection for his unconventional methods and questioning nature. Imagine that instead of being expelled, his teacher recognized his potential and nurtured his curiosity. Rewrite the chapter with this alternate scenario.
- "The Portrait of a Lady"
The story beautifully portrays the relationship between the narrator and his grandmother. However, it also reflects the changes in family dynamics over time. Conduct an interview with your grandparents (or an elderly relative). Discuss how family relationships have evolved from their time to now. Write an essay comparing their experiences with the modern era.

Activity

Literature and Society:

Read about a famous personality who challenged societal norms (e.g., Mahatma Gandhi, Greta Thunberg, or Malala Yousafzai).

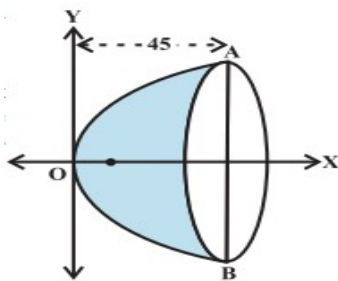
Write a short article on how their contributions can inspire today's youth.

These tasks aim to improve creativity, analytical skills, and understanding of literature while encouraging real-world connections.

MATHEMATICS (041)

- A rod AB of length 15 cm rests in between two coordinate axes in such a way that the end point A lies on x-axis and end point B lies on y-axis. A point P(x, y) is taken on the rod in such a way that AP = 6 cm. Show that the locus of P is an ellipse.
- The lines $ax+2y+1=0$, $bx+3y+1=0$ and $cx+4y+1=0$ are concurrent if a, b, c are in G.P.
- If a circle passes through the point (0, 0) (a, 0), (0, b) then find the coordinates of its centre.
- Find the area of the triangle formed by the lines joining the vertex of the parabola $x^2=12y$ to the ends of its latus rectum.
- Find the coordinates of the foci and the vertices, the eccentricity, the length of the latus rectum of the hyperbolas: (i) $y^2 - 16x^2 = 16$
- A person standing at the junction (crossing) of two straight paths represented by the equations $2x-3y+4=0$ and $3x+4y-5=0$ wants to reach the path whose equation is $6x-7y+8=0$ in the least time. Find equation of the path that he should follow.
- Find equation of the line which is equidistant from parallel lines $9x+6y-7=0$ and $3x+2y+6=0$.
- Find the distance of the point (3, -5) from the line $3x-4y-26=0$.

9. The owner of a milk store finds that, he can sell 980 litres of milk each week at Rs 14/litre and 1220 litres of milk each week at Rs 16/litre. Assuming a linear relationship between selling price and demand, how many litres could he sell weekly at Rs 17/litre?
10. The focus of a parabolic mirror as shown in Fig. is at a distance of 5 cm from its vertex. If the mirror is 45 cm deep, find the distance AB.



PHYSICS (042)

- A steel rod has a diameter 10mm and a length of 1m. A force stretches it along its length and produces a strain of 0.16%. Young's modulus of the steel is $2 \times 10^{11} \text{ N/m}^2$. What is the magnitude of the force stretching the rod?
 - 100 N
 - 31.4N
 - 314N
 - 200 N
- Bernoulli's equation is an example of conservation of
 - Energy
 - momentum
 - angular momentum
 - mass
- Certain quantity of water cools from 70°C to 60°C in first 5 minutes and to 54°C in the next 5 minutes. The temperature of the surrounding is:
 - 45°C
 - 42°C
 - 20°C
 - 10°C
- An ideal gas heat engine is operating between 227°C and 127°C . It absorbs 10^4 J of heat at the higher temperature. The amount of heat converted into work is
 - 2000 J
 - 4000 J
 - 8000 J
 - 5600 J
- On the basis of stress- strain curves, distinguish between ductile, brittle and malleable materials.
- State and prove Bernoulli's theorem.
- Calculate the difference in temperature between two sides of an iron plate 20mm thick, when heat is conducted at the rate of $6 \times 10^5 \text{ Cal./min/m}^2$. K for metal is $0.2 \text{ Cal/s.cm.}^\circ\text{C}$.
- Calculate difference in specific heats for 1g of air at S.T.P. Given density of air at S.T.P. is 1.293g/liter.

CHEMISTRY (043)

- Write the IUPAC names of the following compounds:

		$\text{CH}_3(\text{CH}_2)_2\text{COCl}$	$\text{CH}_3(\text{CH}_2)_2\text{CONH}_2$
$\text{CH}_3\text{CH}_2\text{COOCH}_3$	$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CN}$	$\text{CH}_3\text{CH}_2\text{COCH}_3$	$\text{CH}_3(\text{CH}_2)_2\text{COCl}$

Order of priority:

carboxylic acid > acid anhydride > ester > acid chloride > amide > nitrile > isocyanide > aldehyde > ketone > alcohol > amine > alkene > alkyne > halo > nitro > alkoxy > alkyl

BIOLOGY (044)

1. What are three main forms in which animals excrete nitrogenous wastes?
2. What is ammonotelism, ureotelism & uricotelism? Give advantages of ureotelism & uricotelism.
3. Why tadpoles are ammonotelic whereas frogs are ureotelic?

4. Describe protonephridia & give examples of animals in which they are found.
5. Describe structure of metanephridia, Malpighian tubules & green glands with examples.
6. Draw labelled diagrams of Human Urinary system, L.S. of Human Kidney & explain its structure.
7. What are two types of nephrons based on their position in kidney. Give differences between them.
8. What are three processes involved in urine formation?
9. Describe the role of different regions of nephrons in urine formation.
10. How much is the filtering force required in the glomeruli? What is the nature of filtrate of PCT?
11. Both thin & thick segments of ascending loops of Henle transport NaCl into intestinal fluid. What is the difference in their respective mode of transport?
12. What difference is observed in ascending & descending limbs of Henle's loop with reference to permeability of water?
13. What is counter current mechanism? Where does it operate & what is its use?
14. What is the role of the following in regulation of Kidney function: - (i) Hypothalamus(ii) JGA (iii) ANF.
15. What is micturition? Explain.
16. What is the role of lungs, liver and skin in excretion?
17. Name 3 disorders of kidney.
18. Define haemodialysis, Explain technique.
19. Under which condition is kidney transplant required.

ACCOUNTANCY (055)

1. On 31st March 2022, the Bank Pass Book of Rachna & Co. showed an overdraft of Rs.10,700. From the following particulars prepare Bank Reconciliation Statement
 - (a) Cheques issued before 31-03-2022 but presented for payment after that date amounted to Rs.900.
 - (b) Cheques paid into the Bank but not collected and credited until 31-03- 2022 amounted to Rs.2,200.
 - (c) Interest on overdraft amounting to Rs.1,200 did not appear in the Cash Book.
 - (d) Rs.5,000 being interest on investments collected by the Bank and credited in the Pass Book were not shown in the Cash Book.
 - (e) Bank charges of Rs.50 were not entered in the Cash Book.
 - (f) Rs.800 in respect of dishonoured cheque were entered in the Pass Book but not in the Cash Book.
2. Rectify the following errors:
 - (a) ₹ 24,000 paid for office furniture was debited to office expense account.
 - (b) A credit sale of goods of ₹ 30,000 to Pooja, has been wrongly passed through the Purchases Book.
 - (c) Purchase account over cast by ₹ 4000
 - (d) Credit sales of ₹ 12,000 to Suman omitted to be recorded in the books.
3. From the following information, Prepare the Trading Account for the year ended 31st March, 2022: Adjusted Purchases ₹ 30,00,000; Sales ₹ 42,80,000; Returns Inwards ₹ 80,000; Freight and Packing ₹ 30,000; Packing Expenses on Sales ₹ 40,000; Depreciation ₹ 72,000; Factory Expenses ₹ 1,20,000; Closing Stock ₹ 2,40,000.
4. Compute Cost of goods sold for the year 2022 with the following Information.

Particulars	Rs.
Sales	40,00,000
Purchases	30,00,000
Wages	2,00,000
Stock (Apr. 01, 2016)	6,00,000

Stock (March 31, 2017)	8,00,000
Freight inwards	2,00,000

5. Vinod Ltd., purchased a Plant on 1st April, 2005 for Rs.15,000. It purchased another plant on 1st October, 2005 costing Rs.20,000 and on 1st July, 2006 costing Rs.30,000. On 1st January, 2007 the Plant purchased on 1st April, 2005 became useless and was sold for Rs.2,000. Show Plant Account charging 10% p.a. depreciation by fixed Instalment method for four years. The plant purchased on 1st October, 2005 was sold for Rs.8,000 on 1st January, 2008. Accounts of the company are closed on 31st December each year.

BUSINESS STUDIES (054)

- Which of the following indicates the right procedure of import trade?
 - Procurement of import license, Placing order or indent, Trade Enquiry, Customs clearance and release of goods.
 - Trade enquiry, Procurement of import license, obtaining letter of credit, arrival of goods.
 - Arrival of goods, Retirement of import documents, obtaining foreign exchange, obtaining letter of credit.
 - Receipt of shipment advice, Trade enquiry, Arranging for finance, Customs clearance and release of goods
- A particular number that an export firm needs to have is known as -
 - IEC Number
 - IFC Number
 - IIC Number
 - IFC Code
- The Tata Group, founded by Jamshedji N. Tata in 1868, as a private trading firm. Presently doing business in different segments like steel, automobiles, energy, home care products, etc. The group is managed by professional managers appointed by the Board of Directors. The business group enjoy global leadership and its main motive is to earn profit and generate wealth. The group is not accountable to the public.
 - The given case is referring to the working of a private sector enterprise. Name the other sector which is also working in our mixed economy.
 - In the instant case, the group is not accountable to the public. State to whom the group is accountable?
 - What is the main aim of public sector enterprises?
 - In whose hand the management of public enterprises are entrusted?
 - Does public enterprises have freedom of operations?
 - Are public enterprises accountable to the public?
- Govind is a manufacturer of readymade kid's garments. He sells his products through various dealers across the country. However, his sales are decreasing over the years. Recently, his wife gifted him a jacket. Which she had ordered through Myntra. This gave Govinda an idea to start selling his products online.
 - What type business was Govind doing earlier and which type of business he wants switch to?
 - State any two advantage.
- To meet the problem of short-term capital inadequacy, Tizen Ltd. Borrowed 5 crores from Sky Ltd., which had surplus funds. Although Sky Ltd. Charged higher interest rates as compared to bank borrowings still Tizen Ltd. Preferred this source as no security had to be given to raise funds. Identify the source of finance being discussed in the given case. Also, state its three features.

6. It is an international organisation established to supervise and liberalize world trade. It is the successor to the General Agreement on Tariffs and Trade (GATT). Although GATT proved remarkably successful in liberalizing world trade over the next five decades, but by late 1980s, there were calls for a stronger multilateral organisation to monitor trade and resolve trade disputes. Following the completion of the Uruguay Round (1986-94) of multilateral trade negotiations, this Organisation began operations on January 1st, 1995.
- Identify the Organisation highlighted in the given case.
 - How many countries are members of the organisation identified in (i) above.
 - State any three objectives of the organisation identified in (i) above

ECONOMICS (030)

- Find the median for the given data

Class Interval	0-10	10-20	20-30	30-40	40-50
Frequency	6	8	10	5	3
- Determine the mode of the data:

Class Interval	5-10	10-15	15-20	20-25	25-30
Frequency	4	7	12	6	5
- Differentiate between arithmetic mean, median, and mode, explaining their applications with examples.
- Given the following data, calculate the coefficient of correlation between X and Y:

X	10	20	30	40	50
Y	15	25	35	45	55
- Draw a scatter diagram for the given data and comment on the type of correlation:

X	5	10	15	20	25
Y	50	45	40	35	30
- For the ranks of two judges, compute the rank correlation coefficient:

R1	1	2	3	4	5
R2	2	3	1	5	4
- Explain the difference between positive, negative, and zero correlation with examples from daily life.
- Discuss the significance of studying correlation in economics and business.
- Explain the determinants of market supply.
- Distinguish between the degrees of price elasticity of supply.

HISTORY (027)

- How did the Chinese Communist Party (CCP), under the leadership of Mao Zedong, transform China from a semi-feudal agrarian economy into a socialist state? Explain.
- What role did Deng Xiaoping's economic reforms (1978 and beyond) play in China's rise as an economic superpower? Explain.
- How did Japanese imperialism from the late 19th to early 20th century contribute to the formation of modern Japan? Explain.

POLITICAL SCIENCE (028)

1. How do the Fundamental Rights in the Indian Constitution compare with the rights in other democratic constitutions like the U.S. Constitution? Also explain the significance of the Right to Equality (Article 14-18) in India. How does it contribute to the concept of a fair and just society?
2. What are the Directive Principles of State Policy, and how do they complement the Fundamental Rights? Can the Directive Principles be enforced in a court of law? Explain the relationship between Fundamental Rights and Directive Principles. How do the Directive Principles of State Policy aim to establish a social and economic democracy in India?
3. Discuss the role of judicial activism in the interpretation of Fundamental Rights. How have landmark cases like *Maneka Gandhi v. Union of India* and *Kesavananda Bharati v. State of Kerala* shaped the scope of Fundamental Rights?

GEOGRAPHY (029)

1. "Investigate the impact of climate change on a specific region (either local, national, or global). In your project, analyze how the climate has changed in the last 30 years, identify the primary causes of these changes, and assess the consequences for the environment and human society. Additionally, propose practical solutions that could help mitigate or adapt to these changes."
2. "Select a specific ecosystem (e.g., tropical rainforest, coral reefs, wetlands, or temperate forests) and analyze the current state of biodiversity within that ecosystem. Discuss the key threats to biodiversity in this region, both natural and human-induced. Evaluate the role of conservation efforts, including national and international initiatives, in protecting biodiversity. Finally, propose strategies that can be implemented at the local, national, or global level to conserve biodiversity in this ecosystem."

Tips for Submission:

- Keep the project file well-organized, with each A4 page clearly labelled and easy to follow.
- Include captions for all pictures.
- The file should be neatly bound or placed in a project folder.

PSYCHOLOGY (037)

1. Develop a script from a preoperational child's point of view for playing with friends. Develop the same script for an adolescent. Make a conclusion on how do these two scenarios differ?
2. Make the assigned Models.
3. Why is it important to manage negative emotions? Suggest ways to manage negative emotions. Explain some ways that you have implemented in your life to manage your negative emotions and how you are benefited by implementing those ways.
4. Complete the practical and project files.

Note: Kindly use A4 size pages for completing the project work.

COMPUTER SCIENCE (083)

1. What is the difference between 'in' operator and index() function as they both are used to find an element in the tuple?
2. Write a program to input a tuple of n tuples that finds the sum of all the numbers in each tuple.
Sample Input: ((5,8),(3,1,0),(4,3))
Sample Output:
Sum of tuple1: 13
Sum of tuple2: 4
Sum of tuple3: 7
3. Write a program to input a string and capitalize the first and last character of each word in a string.
Sample Input: Hello World! I love Python
Same Output: Hello World! I LovE PythoN
4. Differentiate between append() and extend() function in list with suitable example.
5. Predict the output of the following code snippets:
 - (a)

```
tup=(9, 6, 10, 2, 1)
print(tup[: 2])
print(tup[1 : 2])
print(tup([1 : -2 : 2])
```
 - (b)

```
txt= "Python, is a high level language."
x= txt.find("e", 5, 20)
print(x)
```
 - (c)

```
s = 'Happy'
s1= 'Day'
s2 = s[1:] + s1[len(s1) - 1:]
print(s2)
```
 - (d)

```
t = (2, 3, 4, 5, 9, 8, 7, 6)
print(t[2:5] * 2)
print(t[3 : 7] + (0, 0))
```

INFORMATICS PRACTICES (065)

1. Consider the following dictionary Prod_Price.
Prod_Price = {'LCD':25000, 'Laptop': 35000, 'Home Theatre': 80000, 'Microwave Oven': 18000, 'Electric Iron': 2800, 'Speaker': 55000}
Find the output of the following statements:
 - (a) `print(Prod_Price.get('Laptop'))`
 - (b) `print(Prod_price.keys())`
 - (c) `print(Prod_Price.values())`
 - (d) `print(Prod_Price.items())`
 - (e) `print(len(Prod_Price))`
 - (f) `print('Speaker' in Prod_Price)`
 - (g) `print(Prod_Price.get('LCD'))`
 - (h) `del Prod_Price['Home Theatre']`
`print(Prod_Price)`

2. Differentiate between Alter and Update command in SQL.
3. Consider the table 'Teacher_Details' given below and write suitable SQL queries for the following:

T_ID	T_Name	T_DOJ	T_Subjects	Num_of_Periods
1001	Bharti	2018-10-15	Hindi	27
1002	Pratima	NULL	NULL	32
1003	Savitri	2012-11-13	Hindi	29
1004	Aashna	2020-02-24	English	28

- (a) Display the T_Name and Num_of_periods by increasing the number of periods each by 1.
 - (b) Display T_Name of all those teachers whose date of joining is after 1st Jan 2019.
 - (c) Display T_ID and T_Name of all those teachers whose number of periods are in the range of 25 to 30 (both values included).
 - (d) Display details of all those teachers who have not been assigned any subject.
 - (e) Display details of all those teachers whose subjects is either Hindi or Science.
4. Write the differences between list and dictionary.
 5. How will you check for a value inside a dictionary using 'in' operator. Brief with example.

PHYSICAL EDUCATION (048)

1. Briefly explain about Axis and Plane movements.
2. Describe the various types of body movements.
3. Write a note on psychological attributes of mental toughness in sports.
4. How would you explain Team Cohesion? What are the ways to improve Team Cohesion?
5. Define and explain the concept of training in sports.
6. What do you mean by doping? List down the doping types.

हिन्दी (302)

1. 'लोकगीत हमें अपनी संस्कृति से जोड़ते हैं।' आप अपने क्षेत्र में प्रचलित दो लोकगीतों को एकत्रकर परियोजना तैयार कीजिए ।
2. किसी ऐसी घटना का वर्णन कीजिए, जिसमें मानव द्वारा अपने मनोरंजन के लिए पशु-पक्षियों का उपयोग किया गया हो ।
3. 'परोपकार' एक मानवीय गुण है। 'परोपकार' विषय पर लगभग 100 शब्दों में एक अनुच्छेद लिखिए।

HINDUSTANI MUSIC (VOCAL) (034)

1. Write the theka of Ektala with its dughun and practice it with your hand beats.
2. Write the notation of DrutKhyal of raga Bhimpalasi.

PAINTING (049)

1. Create a piece of folk art using any medium.
2. Paint a landscape using watercolors.

YOGA (841)

1. Prepare a project on any one of the following topics:
 - (a) Surya Namaskar
 - (b) Yoga and Student Life
 - (c) Concept of Diet

