

DELHI PUBLIC SCHOOL, BHILAI

CLASS 12

ENGLISH VACATION HOMEWORK

Answer the following questions in approximately 120-150 words each.

1. M Hamel in the last lesson was concerned about the state of education in the face of oppression. Write **a speech** to be shared with your peers on the importance of education. You may use cues from the text.
2. Imagine the mother gets to know of the poet's personal fears. Write **a letter**, as the mother, telling the daughter why she must not dwell on these fears. You may begin this way:

Pallipuram
Cochin, Kerala

22 August '60

My dear Kamala

I am writing to you because when you left me at the airport, I felt something wasn't right. Judging by how little you spoke that day
.....(continue).....

With love
Amma

3. Prepare and write down a debate on the motion 'Democratic Debate Can Build Trust and Reduce Polarization Across The World'.

Time: 3 minutes

Even Roll Numbers – 'for' the motion

Odd Roll Numbers – 'against' the motion

Note: All 3 questions to be done on A4 size ruled paper and submitted on 18th June, 2024.

VACATION Home Work Class XII(Physics) 2024-25

Solve following questions-

1. Which one out of the following is not a property of electric field lines-
 - a) they are continuous curves without any breaks
 - b) they never cross each other
 - c) start from +ve and end to -ve
 - d) form closed loops
2. Select the correct statement(s) from the following
 - a) Gauss's law is true for any closed surface, no matter what its shape or size.
 - b) If the net electric flux through a closed surface is zero, we can conclude that the total charge contained in the closed surface is also zero.
 - c) Gauss's law is not based on the inverse square dependence on distance contained in the coulomb's law.
 - d) The electric field due to a charge outside the Gaussian surface contributes zero net flux through the surface.
3. What is electrostatic induction?
4. Write three basic properties of electric charge.
5. An electric dipole is held in a uniform electric field.
 - i) Using suitable diagram, show that it does not undergo any translatory motion.
 - ii) Derive expression for the torque acting on it.
 - iii) write the result in vector form.
6. *Derive expression for field due to dipole at an axial point.*
7. *What is electric dipole? Write its unit and dimensions.*
8. *Write four properties of electric field lines.*
9. An electric dipole length 4 cm when placed with its axis making 30° with a uniform field E, experiences a torque of 4 Nm. If dipole has charges of $\pm 10 \text{ nC}$, calculate electric field E.
10. *Apply Gauss' law to calculate field due to an infinite plane sheet of charge.*
Draw suitable diagram.
11. *Apply Gauss' law to calculate field due to an infinite linear charge distribution (straight line charges).* Draw suitable diagram and graph.
12. Obtain an expression for field due to a hollow charged metallic sphere using Gauss' law.


.....

VACATION HOME WORK (CLASS XII)
CHEMISTRY

Write an investigatory project in Chemistry and submit the project report on 18.06.2024.

Instructions :

- 1) Topics for the project work will be intimated in your whatsapp group by your subject teachers
- 2) Project report should be handwritten.
- 3) Project report should have maximum 15 pages.
- 4) Left side of each page should be kept for diagrams, photos, graphs, pictures, tables and supporting datas.
- 5) Project report to be submitted in paper file not in plastic file.
- 6) It should contain title page, certificate page, acknowledgement page, preface page, index page and Bibliography page.
- 7) The sequence of the pages in the project should be as follows

- | | | |
|---|---|--------------------|
| 1. Title/Topic |  | To be typed |
| 2. Preface | | |
| 3. Acknowledgement | | |
| 4. Certificate | | |
| 5. Index | | |
| 6. Content (8-10 pages, handwritten on the topic given) | | |
| 7. Bibliography | | |

DELHI PUBLIC SCHOOL, BHILAI
CLASS XII BIOLOGY
VACATION HOME WORK

- Q.1. A woman has a rare abnormality of the eyelids called *ptosis* which makes it impossible for her to open her eyes completely. The condition has been found to depend on a single dominant gene (*P*). The woman's father had *ptosis* but her mother had normal eyelids. Her father's mother had normal eyelids.
- (a) What are the probable genotype of the woman, her father and mother?
- (b) What proportion of her children will be expected to have *ptosis* if she marries a man with normal eyelids.
- Q.2. In man, assume that brown eyes (*B*) are dominant over blue eyes(*b*) and right handedness (*R*) is dominant over left handedness (*r*). A brown eyed, right handed man marries a blue eyed, right handed, woman and their 1st child is blue eyed and left handed. What are the genotypes of the two parents? (continued in next problem).
- Q.3. The offspring here marries a brown eyed woman, who had a blue eyed father, brown eyed mother and blue eyed brother. The couple was also blessed with a brown eyed child. Give the genotypes of (i) man and woman and (ii) their child.

Class- XII (Maths) & Applied Maths

SUMMER VACATION HOMEWORK ON MATRICES

1. Construct a 2×2 matrix, $A = [a_{ij}]$ whose elements are given by $a_{ij} = \frac{1}{2}|i - 3j|$ Ans: $\begin{bmatrix} 1 & \frac{5}{2} \\ \frac{1}{2} & 2 \end{bmatrix}$
2. Construct a 2×2 matrix whose elements a_{ij} are given by $\frac{|-3i+j|}{2}$ Ans: $\begin{bmatrix} 1 & \frac{1}{2} \\ \frac{5}{2} & 2 \end{bmatrix}$
3. Write the value of $x + y + z$ if $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 0 \\ -1 \\ 3 \end{bmatrix}$ Ans: 2
4. If $A = \begin{bmatrix} 3 & -4 \\ 2 & 3 \end{bmatrix}$ find $A + A^T$, where A^T is the transpose of matrix A. Ans: $\begin{bmatrix} 6 & -2 \\ -2 & 6 \end{bmatrix}$
5. If $\begin{bmatrix} 2 & -3 \\ 1 & 1 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 1 \\ 3 \end{bmatrix}$, then find the values of x and y . Ans: $x = 2, y = 1$
6. If A is a square matrix such that $A^2 = A$, then write the value of $7A - (I + A)^3$, where I is an identity matrix. Ans: I
7. Find the value x such that:-
 (i) $\begin{bmatrix} 1 & x & 1 \end{bmatrix} \begin{bmatrix} 1 & 3 & 2 \\ 2 & 5 & 1 \\ 15 & 3 & 2 \end{bmatrix} \begin{bmatrix} 1 \\ 2 \\ x \end{bmatrix} = 0$ (ii) $\begin{bmatrix} x & 4 & 1 \end{bmatrix} \begin{bmatrix} 2 & 1 & 2 \\ 1 & 0 & 2 \\ 0 & 2 & -4 \end{bmatrix} \begin{bmatrix} x \\ 4 \\ -1 \end{bmatrix} = 0.$
8. If A is skew symmetric matrix, then show that A^2 is a symmetric matrix.
9. Show that a matrix which is both symmetric as well as skew-symmetric, is a null matrix
10. If $A = \begin{bmatrix} 2 & -3 & -5 \\ -1 & 4 & 5 \\ 1 & -3 & -4 \end{bmatrix}$, $B = \begin{bmatrix} 2 & -2 & -4 \\ -1 & 3 & 4 \\ 1 & -2 & -3 \end{bmatrix}$, show that $AB = A$ and $BA = B$.
11. Find a matrix A such that $\begin{bmatrix} 2 & -1 \\ 1 & 0 \\ -3 & 4 \end{bmatrix} A = \begin{bmatrix} -1 & -8 & -10 \\ 1 & -2 & -5 \\ 9 & 22 & 15 \end{bmatrix}$
12. If $\begin{bmatrix} 8 & -1 & 5 \\ -2 & 1 & 3 \end{bmatrix} = A + \begin{bmatrix} 1 & 2 & -1 \\ 0 & 4 & 9 \end{bmatrix}$, then find the matrix A Ans: $A = \begin{bmatrix} 7 & -3 & 6 \\ -2 & -3 & -6 \end{bmatrix}$
13. A trust caring for handicapped children gets Rs. 30,000 every month from its donors. The trust spends half the funds received for medical and educational care of the children and for that it charges 2% of the spent amount from them, and deposits the balance amount in a private bank to get the money multiplied so that in future the trust goes on functioning regularly. What percent of interest should the trust get from the bank to get a total of Rs. 1,800 every month? Use matrix method, to find the rate of interest. Ans: 10%
14. Let $A = \begin{bmatrix} 2 & 3 \\ -1 & 2 \end{bmatrix}$, then show that $A^2 - 4A + 7I = 0$. Using this result calculate A^3 . Ans: $\begin{bmatrix} -10 & 27 \\ -9 & -10 \end{bmatrix}$
15. To raise money for orphanage, students of three schools A, B and C organized an exhibition in their locality, where they sold paper bags, scrap-books and pastel sheets made by them using recycled paper, at the rate of Rs.20, Rs.15 and Rs.5 per unit respectively. School A sold 25 paper-bags, 12 scrap-books and 34 pastel sheets. School B sold 22 paper-bags, 15 scrap-books and 28 pastel sheets while School C sold 26 paper-bags, 18 scrap-books and 36 pastel sheets. Using matrices, find the total amount raised by each school.
 Ans: Rs.850, Rs.805, Rs.970

16. If $A = \begin{bmatrix} 2 & 0 & 1 \\ 2 & 1 & 3 \\ 1 & -1 & 0 \end{bmatrix}$, then find the value of $A^2 - 3A + 2I$ Ans: $\begin{bmatrix} 1 & -1 & -1 \\ 3 & -3 & -4 \\ -3 & 2 & 0 \end{bmatrix}$

17. Express the matrix $A = \begin{bmatrix} 2 & -2 & -4 \\ -1 & 3 & 4 \\ 1 & -2 & -3 \end{bmatrix}$ as the sum of a symmetric and a skew symmetric matrix.

18. If $X \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix} = \begin{bmatrix} -7 & -8 & -9 \\ 2 & 4 & 6 \end{bmatrix}$, then find the matrix X Ans: $X = \begin{bmatrix} 1 & -2 \\ 2 & 0 \end{bmatrix}$.

19. If $A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$, then show that $A^2 - 2A + 7I_2 = O$.

20. To raise money for orphanage, students of three schools A, B and C organized an exhibition in their locality, where they sold paper bags, scrap-books and pastel sheets made by them using recycled paper, at the rate of Rs.20, Rs.15 and Rs.5 per unit respectively. School A sold 25 paper- bags, 12 scrap-books and 34 pastel sheets. School B sold 22 paper - bags, 15 scrap-books and 28 pastel sheets while School C sold 26 paper - bags, 18 scrap-books and 36 pastel sheets. Using matrices, find the total amount raised by each school.

Ans:-

Rs.850, Rs.805, Rs.970

HOLIDAY HOMEWORK(COMPUTER SCIENCE)
CLASS: 12

	Select the most appropriate option out of the options given for each question.	
1	Consider a list L = [5, 10, 15, 20], which of the following will result in an error:- a) L[0] += 3 b) L += 3 c) L *= 3 d) L[1] = 45	1
2	Find the operator which cannot be used with a string in Python from the following:- a) // b) * c) + d) in	1
3	Consider a tuple in python named Months = ('Jul', 'Aug', 'Sep'). Identify the invalid statement(s) from the given below statements:- a) S = Months[0] b) print(Months[2]) c) Months[1] = 'Oct' d) LIST1 = list(Months)	1
4	Which is the correct dictionary declaration? a) d1={1:'January',2:'February',3:'March'} b) d2=(1:'January',2:'February',3:'March') c) d3={1:'January',2:'February',3:'March'} d) d4={1:January,2:February,3:March}	1
5	Rohan wants to drive a car but He is unable to drive because his age is below 18. A python code is written to check his age .identify it is correct or incorrect. Age=input("enter age:") if age<=18: print("you are not eligible") a)Correct b)Incorrect	1
6	What is the output of the function shown below (random module has already been imported)? print(random.choice('sun')) a)sun b)u c)Either s, u or n d)Error	1
7	What is the default mode of opening a file in python? a)read b)write c)append d)read and write	1
8	Which of the following expressions is an example of type casting? a)4.0+float(6) b)5.3+6.3 c)5.0+3 d)None of these	1
9	What is the output of the following Python Code; Select any one of the following options? import random print(int(random.random()*5)) a)Always generate 0	1
10	The value of the expressions 4/(3*(4-2)) and 4/3*(4-2) is the same.(True/False)	1
11	The command to merge the dictionary Book with Library the command would be: a) d=Book+Library b) print(Book+Library) c)Book.update(Library) d)Library.update(Book)	1
12	Identify the correct option to add new value 50 to existing tuple T T = (11,22,33,44,55) a)T = T + 66 b)T = T + 66 c)T = T + (66,) d)T = T + (66)	1
13	if a = [5,4,3,2,2,1], evaluation of the expression a [a [a [a [2] + 1]]]: a)3 b)4 c)5 d)2	1
14	What is the output of the following program : print(0.1 + 0.2 == 0.3) a)True b)False c)Machine Dependent d)Error	1
15	What will be the output after the following statements? x = 0 y = 4 while x + y < 10: print(x, end=' ') x += 2 a)0 2 4 6 b)0 2 4 c)0 2 d)0 2 4 8	1
16	Which of the following is the use of id() function in Python? a) Id returns the identity of the object b) Every object doesn't have a unique ID c) All of the mentioned d) None of the mentioned	1

17	Which of the following is valid variable name:- a)Student name b)3Number c)%name% d)Block_number	1
18	What will be the output after the following statements? a = [0, 1, 2, 3] del a[:] print(a) a)None b)[] c)[0, 1, 2, 3] d)NameError	1
19	What will be the output after the following statements? x = 27 y = 9 while x < 30 and y < 15: x = x + 1 y = y + 1 print(x,y) a) 26 11 b) 25 11 c) 30 12 d) 26 10	1
20	What will the following code produce? T=['dps','bhi'] T1=range(len(T)) for i in T1: T[i]=T[i].upper() print(T) a)['DPS','BHI'] b)['dps','bhi'] c)['Dps','Bhi'] d)Error	1
21	Find out the type of error if any- if v < 5: print("DPS") else: print("CBSE") a)No Error b)Declaration of v c): with else not required d)Indentation Error	1

Write Python Programs for the followings:-

Q1) To convert days into years, months, weeks, days(consider all months as 0 days using % and // operators)

Q2) To calculate the total surface area, volume of sphere and hemi sphere

Q3) To calculate the roots of quadratic equation (considering all conditions)

Q4) Consider the following example to calculate your grade and grade point for a subject mark.

Calculation of grades as follows:

Marks Range	Grade	Grade point
91-100	A1	10.0
81-90	A2	9.0
71-80	B1	8.0
61-70	B2	7.0
51-60	C1	6.0
41-50	C2	5.0
33-40	D	4.0

Q5)To calculate least among n numbers.

Q6)To input day number and print the respective character day.(Note 0-Sunday, 1- Monday)

Q6) To print the following pattern (using while loop)

```
*****
*****
***
**
*
```


- Q7) To find the Fibonacci series of numbers till 20(using while loop)
- Q8) To find the LCM and LCM of Two numbers.
- Q9)To find the multiplication table from 1 to 10 using nested while loop.
- Q10) To find the factorial of all numbers between 1 to 10 using nested for loop.
- Q11) To find all prime numbers between 1 to 100
- Q12) To input a string and check whether a particular character exists in the string or not.(don't use inbuilt function)
- Q13) To count total number of vowels in an input string.
- Q14) To count how many words starts with 'a' or 'A' in an input string.
- Q15) To count how many palindromes words are there in an input string

VACATION HOME WORK

CLASS-XII

SUB.: BIOTECHNOLOGY

1. Write the answers of the exercise questions of the following chapters:-
Chapter-1 Recombinant DNA Technology
Chapter-3 Animal Cell Culture
2. Write an investigatory project given.

DELHI PUBLIC SCHOOL, BHILAI (CG)
VACATION HOME WORK
CLASS XII - ACCOUNTANCY

Project Work

One specific project based on financial statement analysis of a company covering any two aspects from the following :

1. Comparative and common size financial statements
2. Accounting Ratios
3. Segment Reports
4. Cash Flow Statements

VACATION HOMEWORK
BUSINESS STUDIES
CL.12
2024-25

PROJECT WORK:

- 1). PRINCIPLES OF MANAGEMENT – CL. 12 K & 12 L
- 2). MARKETING MANAGEMENT
OR
– CL. 12 I & 12 J
- 3). STOCK EXCHANGE

Here are some general guidelines for a Class 12 Business Studies project:

- The project should be 25–30 pages long
 - It must be handwritten
 - It should be presented in a folder properly covered and decorated.
 - Use interleaved coloured or white sheets
 - It should have a margin on the left side
- It should include relevant pictures and clippings

The project should follow a specific format, which includes:

- A cover page with student information, school name, and year
- An index or list of contents
- An acknowledgement and preface
- An introduction
- A topic with a unique heading
- A list of activities and planning done to gather information about the project
- A certificate, if any
- A summary or conclusion of the project
- A bibliography
- Teacher remarks and observations

NOTE: Please refer to the Project Work section in your TEXT BOOK or the CBSE website for the sub topics to be covered under each main topic given above.

VACATION ASSIGNMENT

ECONOMICS PROJECT CLASS – 12

SUGGESTED TOPICS for project

1. Budget and its components
2. Foreign exchange rate and its determinants
3. Employment and its various sources
4. Crop diversification and its role in Rural development
5. Micro small and medium enterprises sector in India (MSME's)
6. Role of RBI in money supply

MODE OF PRESENTATION

1. Relevance of topic (3 Marks)
2. Knowledge content/research (6 Marks)
3. Presentations techniques (3 Marks)
4. Viva (8 marks)

Total – 20 marks

Note-

1. The project should not exceed 20 pages.
2. No plastic cover to be used.
3. The project should be arranged as follows-

Cover page

Certificate

Acknowledgement

Preface

Index

Content

Conclusion

Bibliography

Delhi Public School Bhilai
Holiday homework- 2024-25
Geography - Class 12

1. On the political outline map of India, mark the following places.

Map : 1

- Mines:
- Iron-ore mines: Mayurbhanj, Bailadila, Ratnagiri, Bellary
 - Manganese mines: Balaghat, Shimoga
 - Copper mines: Hazaribagh, Singhbhum, Khetari

Map :2

- Mines
- Bauxite mines: Katni, Bilaspur and Koraput
 - Coal mines: Jharia, Bokaro, Raniganj, Neyveli
 - Oil Refineries: Mathura, Jamnager, Barauni

Map :3

Major Sea Ports: Kandla, Mumbai, Marmagao, Kochi, Mangalore, Tuticorin, Chennai, Vishakhapatnam, Paradwip, Haldia

Map :4

International Air ports: Ahmedabad, Mumbai, Bengaluru, Chennai, Kolkata, Guwahati, Delhi, Amritsar, Thiruvananthapuram & Hyderabad.

2. On the political outline map of India, mark the following places.

Map :5

- Major Sea Ports
- Europe: North Cape, London, Hamburg
 - North America: Vancouver, San Francisco, New Orleans
 - South America: Rio De Janeiro, Colon, Valparaiso
 - Africa: Suez and Cape Town
 - Asia: Yokohama, Shanghai, Hong Kong, Aden, Karachi, Kolkata
 - Australia: Perth, Sydney, Melbourne

Map :6

- Major Airports:
- Asia: Tokyo, Beijing, Mumbai, Jeddah, Aden
 - Africa: Johannesburg & Nairobi
 - Europe: Moscow, London, Paris, Berlin and Rome
 - North America: Chicago, New Orleans, Mexico City
 - South America: Buenos Aires, Santiago
 - Australia: Darwin and Wellington

DELHI PUBLIC SCHOOL, RISALI

SUBJECT – ENGINEERING GRAPHICS

CLASS-12th (2024-25)

Vacation home work (Single solid)

Date: 24/04/2024

Last date of submission: 16/06/24

1. Draw the isometric projection of an equilateral triangular prism of 40 mm base side and 75 mm axis resting on its base in H.P. with one of its base edge parallel to V.P. in front.
2. A Pentagonal prism of base side of 25 mm and axis length of 55 mm is resting on its face with its axis parallel to both H.P and V.P. Draw its isometric projection.
3. Draw the isometric projection of an inverted pentagonal pyramid of base side 30 mm and axis of 60 mm resting on its base on H.P. with one of its base side parallel to V.P. and nearer to the observer.
4. Draw the isometric projection of a hexagonal pyramid having base edge of 40 mm and axis 70 mm resting on its base keeping two of its base side perpendicular to the V.P.
5. Draw the isometric projection of a cylinder of diameter 40 mm and axial length of 70 mm lying on the H.P. keeping its axis parallel to H.P. and V.P. both.
6. Draw the isometric projection of a sphere of diameter 50 mm

Delhi Public School, Bhilai
Summer Vacation Home Work 2024
Informatics Practices (XII)

Chapter – 1 Python Pandas – I

Q1.

- a. MCQ 1 to 12 questions
- b. Fill in the blanks 1 to 9 questions
- c. Type A Very short Answer questions: 1 to 7 questions
- d. Type B Short answer questions: 1 to 9 questions

Practical questions: Write Python code:

Q2.

Given the following Series1

A	100
B	200
C	300
D	400
E	500

Write the command to create above Series and then double the value in series and store in another series named Series2

Q3.

Consider a given Series , Series1:

```
200 700
201 700
202 700
203 700
204 700
```

Write a program in Python Pandas to create the series and display it.

Q4.

What will be the output produced by the following programming statements 1 & 2?

```
import pandas as pd
S1=pd.Series(data=[31,41,51])
print(S1>40)      -->Statement1
print(S1[S1>40])  -->Statement2
```

Q5.

Consider a given Series , Subject:

ENGLISH	75
HINDI	78
MATHS	82
SCIENCE	86

Write a program in Python Pandas to create this series

Q6.

Q11.

What will be the output of the following program:

```
import pandas as pd
first=[7,8,9]
second=pd.Series(first)
s1=pd.Series(data=first*2)
s2=pd.Series(data=second*2)
print("Series1:")
print(s1)
print("Series2:")
print(s2)
```

VACATION HOMEWORK

2023-24

HOME SCIENCE

CLASS-12

1. **PROJECT-** Market survey any five processed foods with their packaging and label information.

Brief description on: Processed food, Food Packaging, Information mentioned in food packets, Erroneous methods of food packaging.

2. To prepare sketch using different forms of design.

3. QUESTION-ANSWER

Q.1 What are the various challenges/constraints threatening the survival of handicrafts?

Q.2 What is meant by healthy work environment? How can it be created?

Q.3 What are the government initiatives in favour of women?

Q.4 How will the women get recognition in the family and the society?

Q.5 Differentiate between job and career.

Q.6 What are the different ways in which work can be perceived?

Q.7 What is ergonomics? Why is it essential?

Q.8 Who are social entrepreneurs? What is their way of working?

DELHI PUBLIC SCHOOL, BHILAI
CLASS XII PHYSICAL EDUCATION
VACATION HOME WORK

- Q.1. Write about functions of Sports Events Management?
- Q.2. Write in detail about various Committees and their responsibilities required to conduct sports competition.
- Q.3. Make one AIL project in half chart paper (white) on the following topics :
- Any five yogic asanas with its procedure, benefits, pictures and contraindications.

(OR)

Any five yogic kriyas with its procedure, benefits, pictures and contraindications from Shat Karma.