ROSE BUD SCHOOL, LILUAH, HOWRAH

PROJECT WORK 2023-2024

CLASS – XII

SUBJECT	CHAPTERS
ENGLISH LANGUAGE	List of suggested assignments for Project Work [Any one from the following] : • A product description. [Word limit : 500 words] • A process description (e.g. instruction to operate a device, a recipe, a scientific experiment) [Word limit : 500 words] • An autobiographical experience. [Word limit : 500 words]
ENGLISH LITERATURE	Any one from the following topics : 1. Analyse the character of Ariel from the drama, 'The Tempest ' . What estimate have you formed of Ariel ? What is the importance of his role in the play ? [1000 – 1500 words only] OR 2. How does the author oscillate between reality and illusion in the poem ' Birches ' ? [1000 - 1500 words]
HINDI	**TOPIC-1-**"Dashi" Kahani ke Rachanakar ka bistrit parichay dete hue kahani ka udesay batate hue unke patro ka charitra chitran 1000--1500 ke sabdo me kgy. Patro ke naam nimnlikhit hai--- 1.Balraj 2.Erawati 3.Muhammad niyaltgin 4.Firoja 5.Raja tilak.
BENGALI	• Write the summary of the story from the text book "Probondho - O – Godyo sankalan" in approximately 1000-1500 words.
HISTORY	• Martin Luther King
POLITICAL SCIENCE	• Right to Education to what extent has it benefited the slum children
SOCIOLOGY	• Different marriage customs in India (Comparisons can also be done) • Or, • Different types of Kinship system(Patriarchal / Matriarchal) (with examples as the base of discussion)
ECONOMICS	1. Study a public sector Enter prise with reference to its relevance to the Indian Economy and its future prospect. Analyse the trend of its growth for the last ten years. [For Even Roll Nos.] Or 2. Prepare a trend analysis of Growth and productivity of any one industry such as :- Textile /Automobiles / Electronic and Tele communication etc. in India for the past ten years. [For ODD Roll Nos.]
COMMERCE	• Company the interest rates offered by five different commercial banks on fixed deposits under various categories (General and senior citizens) and various time durations. Find out the procedures and formalities for opening a fixed deposit account. What in the procedure for closing the account on maturity and before maturity period?
BST	• Study any one regulator and the intermediaries under it. Give an account of their functions and how it helps the common man.
ACCOUNTS	Preparation of Journal / Sub-division of journal, Ledger, Trial Balance and Financial Statements of a Partnership form of business on the basic of a case study. • Develop a case study showing how two or more friends decide to come together and start a business with amount of capital. • Prepare their partnership Deed including interest on capital, partner's salary, commission, interest on drawings, Invest on partner's loan and Rent paid to a Partner.

	• Write in detail, their transactions – Purchase (case and credit), sales (cash & credit), expenses, depreciation etc. • From the case study developed (at least 15 transaction). Journal, Ledger, Trial Balance, Trading, P/L A/C, P/L Appropriation A/c, Balance sheet. • The Various expenses, for comparison purposes, could be depicted in the form of bar diagrams and pie chart. • Calculate relevant accounting ratios.
MATHEMATICS	**SECTION – A** 1. Using a graph , demonstrate a function which is one-one but not onto. 2. Using a graph, demonstrate a function which is invertible. 3. Verify the consistency of the system of three linear equations of two variables and verify the same graphically. Give its geometrical interpretation. 4. For a dependent system (non-homogeneous) of three linear equations of three variables, identify infinite number of solutions. **SECTION –B** 1. Using Vector Algebra, find the area of a parallogram / triangle . Also derive the area analytically and verify the same. 2. Using Vector Algebra , prove the formulae of compound angles e.g. sin(A + B) = sin A cos B + cos A sin B , etc. **OR** **SECTION – C** 1. Draw a rough sketch of Cost (C) , Average Cost (AC) and Marginal Cost (MC) OR Revenue (R) , Average Revenue (AR), Marginal Revenue (MR). Give their mathematical interpretation using the concept of increasing decreasing functions and maximum-minimum. 2. Using any suitable data, find the minimum cost by applying the concept of Transportation problem.
PHYSICS	• To determine the resistance of a galvanometer by half deflection method and to find its figure of merit.
BIOLOGY	**TOPIC :** 1. Genetic Disorders **2.** Cancer **3.** AIDS/ Hepatitis **4.** Drug Addiction and Community **5.** Role of micro-organisms in Industry **Format of the project :** • Content • Introduction • Presentation (Graphs, tables, charts, newspaper, cutting, handmade diagram, photographs, statistical analysis if relevant). • Conclusion /Summary • Bibliography **Project should be handwritten by the candidate. Pages should be 15-20.**
COMPUTER SCIENCE	**Question 1** A number is said to be an Ugly number if positive numbers whose prime factors only include 2, 3, 5. For example, 6(2×3), 8(2x2x2), 15(3×5) are ugly numbers while 14(2×7) is not ugly since it includes another prime factor 7. Note that 1 is typically treated as an ugly number. A number is said to be Unique, if the digits in it are not repeated. For example, 12345 is a unique number. 123445 is not a unique number. Accept two positive integer m and n, where m is less than n as user input.

	Upper limit is not more than 10000. Display the number of Ugly Unique integers that are in the range between m and n (both inclusive) and output them along with the frequency, in the format specified below: Test your program for the following data and some random data. Example 1 INPUT: m = 40 n = 100 OUTPUT: THE UGLY UNIQUE INTEGERS ARE: 40, 45, 48, 50, 54, 60, 64, 72, 75, 80, 81, 90, 96 FREQUENCY OF UGLY UNIQUE INTEGERS IS: 13 Example 2 INPUT: m = 300 n = 500 OUTPUT: THE UGLY UNIQUE INTEGERS ARE: 320, 324, 360, 375, 384, 405, 432, 450, 480, 486 FREQUENCY OF UGLY UNIQUE INTEGERS IS: 10 Example 3 INPUT: m = 6750 n = 12000 OUTPUT: INVALID RANGE. **Question 2** Write a program to declare a square matrix M [ ] [ ] of order 'N' where 'N' must be greater than equal 4 and less than 10. Accept the value of N as user input. Display an appropriate message for an invalid input. Allow the user to accept three different characters from the keyboard and fill the matrix according to the instruction given below: (i) Fill the left boundary, right boundary and left diagonal of the square matrix by character 1 (ii) Fill the top boundary and bottom boundary elements of the matrix (except the 4 corners) by character 2 (iii) Fill the non-boundary elements of the matrix by character 3 (iv) Display the matrix formed by the above instructions (v) Now print transpose of formed matrix. Converting rows of a matrix into columns and columns of a matrix into row is called transpose of a matrix. Test your program for the following data and some random data: Example 1 INPUT: N = 5 Enter First Character: @ Enter Second Character: % Enter Third Character: # OUTPUT: FORMED MATRIX @ % % % @ @ @ # # @ @ # @ # @ @ # # @ @ @ % % % @ PRINTING MATRIX AFTER TRANSPOSE: @ @ @ @ @ % @ # # % % # @ # % % # # @ % @ @ @ @ @ Example 2 INPUT: N = 12

OUTPUT: SIZE IS OUT OF RANGE

Question 3

Write a program to accept a paragraph containing two sentences only. The sentences may be terminated by either '.', '?' or '!' only. Any other character may be ignored. The words are to be separated by a single blank space and are in UPPER CASE.

Perform the following tasks:

(a) Accept the paragraph and check for validity

(b) Obtain the length/size of the two sentences separately (number of words)

(c) Arrange the words in ascending order of their length (each sentence). If two or more words have the same length, then sort them alphabetically.

Test your program with the sample data and some random data:

Example 1

INPUT: EDUCATION IS THE ART OF MAKING MAN ETHICAL. THE HIGHEST RESULT OF EDUCATION IS TOLERANCE.

OUTPUT:

SENTENCE 1: 8 WORDS

SENTENCE 2: 7 WORDS

IS OF ART MAN THE MAKING ETHICAL EDUCATION. IS OF THE RESULT HIGHEST EDUCATION TOLERANCE.

Example 2

INPUT: SUCCESS IS NOT FINAL. FAILURE IS NOT FATAL.

OUTPUT: SENTENCE 1: 4 WORDS

SENTENCE 2: 4 WORDS

IS NOT FINAL SUCCESS. IS NOT FATAL FAILURE.

Example 3

INPUT: OVER SPEED IS A KNIEF THAT CUTS A LIFE@

Question 4

Design a program to accept a day number (between 1 and 366), year (in 4 digits) from the user to generate and display the corresponding date. Also, accept 'N' (1 <= N <= 100) from the user to compute and display the future date corresponding to 'N' days after the generated date. Display an error message if the value of the day number, year and N are not within the limit or not according to the condition specified.

Test your program with the following data and some random data:

Example 1

INPUT:

DAY NUMBER: 255

YEAR: 2018

DATE AFTER (N DAYS): 22

OUTPUT:

DATE: 12TH SEPTEMBER, 2018

DATE AFTER 22 DAYS: 4TH OCTOBER, 2018

Example 2

INPUT:

DAY NUMBER: 360

YEAR: 2018

DATE AFTER (N DAYS): 45

OUTPUT:

DATE: 26TH DECEMBER, 2018

DATE AFTER 45 DAYS: 9TH FEBRUARY, 2019

Example 3

INPUT:

DAY NUMBER: 500

YEAR: 2018
DATE AFTER (N DAYS): 33
OUTPUT:
DAY NUMBER OUT OF RANGE
DATE AFTER (N DAYS): 330

Question 5

Write a program to declare a square matrix A[ ][ ] of order MxM where 'M' is the number of rows and the number of columns, such that M must be greater than 2 and less than 10. Accept the value of M as user input. Display an appropriate message for an invalid input. Allow the user to input integers into this matrix.

Perform the following tasks:

(a) Display the original matrix.

(b) Rotate the matrix 90° clockwise as shown below:

Original matrix	Rotated matrix
1 2 3	7 4 1
4 5 6	8 5 2
7 8 9	9 6 3

(c) Find the sum of the elements of the four corners of the matrix.

Test your program for the following data and some random data:

Example 1

INPUT :

M = 3

1 2 3

4 5 6

7 8 9

OUTPUT :

ORIGINAL MATRIX

1 2 3

4 5 6

7 8 9

MATRIX AFTER ROTATION

7 4 1

8 5 2

9 6 3

Sum of the corner elements = 20

Example 2

INPUT :

M = 14

OUTPUT :

SIZE OUT OF RANGE

Question 6

Write a program to accept a sentence which may be terminated by either '.', '?' or '!' only. The words may be separated by more than one blank space and are in UPPER CASE.

Perform the following tasks:

1. Find the number of words beginning and ending with a vowel.
2. Place the words which begin and end with a vowel at the beginning, followed by the remaining words as they occur in the sentence.

Test your program with the sample data and some random data:

Example 1

INPUT:

ANAMIKA AND SUSAN ARE NEVER GOING TO QUARREL ANYMORE.

OUTPUT:

NUMBER OF WORDS BEGINNING AND ENDING WITH A VOWEL = 3
ANAMIKA ARE ANYMORE AND SUSAN NEVER GOING TO QUARREL
Example 2
INPUT:
YOU MUST AIM TO BE A BETTER PERSON TOMORROW THAN YOU ARE TODAY.
OUTPUT:
NUMBER OF WORDS BEGINNING AND ENDING WITH A VOWEL = 2
A ARE YOU MUST AIM TO BE BETTER PERSON TOMORROW THAN YOU TODAY
Example 3
INPUT:
HOW ARE YOU@
OUTPUT:
INVALID INPUT

Question 7

A Prime-Adam integer is a positive integer (without leading zeros) which is a prime as well as an Adam number.
Prime number: A number which has only two factors, i.e. 1 and the number itself.
Example: 2, 3, 5, 7 ... etc.
Adam number: The square of a number and the square of its reverse are reverse to each other.
Example: If n = 13 and reverse of 'n' = 31, then,
$(13)^2 = 169$
$(31)^2 = 961$ which is reverse of 169
thus 13, is an Adam number.
Accept two positive integers m and n, where m is less than n as user input.
Display all Prime-Adam integers that are in the range between m and n (both inclusive) and output them along with the frequency, in the format given below:
Test your program with the following data and some random data:
Example 1
INPUT:
m = 5
n = 100
OUTPUT:
THE PRIME-ADAM INTEGERS ARE:
11 13 31
FREQUENCY OF PRIME-ADAM INTEGERS IS: 3
Example 2
INPUT:
m = 100
n = 200
OUTPUT:
THE PRIME-ADAM INTEGERS ARE:
101 103 113
FREQUENCY OF PRIME-ADAM INTEGERS IS: 3
Example 3
INPUT:
m = 50
n = 70
OUTPUT:
THE PRIME-ADAM INTEGERS ARE:

NIL
FREQUENCY OF PRIME-ADAM INTEGERS IS: 0
Example 4
INPUT:
m = 700
n = 450
OUTPUT:
INVALID INPUT

Question 8

Write a program to declare a matrix A[][] of order (M x N) where 'M' is the number of rows and 'N' is the number of columns such that the value of 'M' must be greater than 0 and less than 10 and the value of 'N' must be greater than 2 and less than 6. Allow the user to input digits (0 - 7) only at each location, such that each row represents an octal number.

Example:

2 3 1 (decimal equivalent of 1st row = 153 i.e. $2x8^2 + 3x8^1 + 1x8^0$)

4 0 5 (decimal equivalent of 2nd row = 261 i.e. $4x8^2 + 0x8^1 + 5x8^0$)

1 5 6 (decimal equivalent of 3rd row = 110 i.e. $1x8^2 + 5x8^1 + 6x8^0$)

Perform the following tasks on the matrix:

Display the original matrix.

Calculate the decimal equivalent for each row and display as per the format given below.

Test your program for the following data and some random data:

Example 1:

INPUT:

M = 1

N = 3

ENTER ELEMENTS FOR ROW 1: 1 4 4

OUTPUT:

FILLED MATRIX DECIMAL EQUIVALENT

1 4 4 100

Example 2:

INPUT:

M = 3

N = 4

ENTER ELEMENTS FOR ROW 1: 1 1 3 7

ENTER ELEMENTS FOR ROW 2: 2 1 0 6

ENTER ELEMENTS FOR ROW 3: 0 2 4 5

OUTPUT:

FILLED MATRIX DECIMAL EQUIVALENT

1 1 3 7 607

2 1 0 6 1094

0 2 4 5 165

Example 3:

INPUT:

M = 3

N = 3

ENTER ELEMENTS FOR ROW 1: 2 4 8

OUTPUT:

INVALID INPUT

Example 4:

INPUT:

M = 4
N = 6
OUTPUT:
OUT OF RANGE

Question 9

A company manufactures packing cartons in four sizes, i.e. cartons to accommodate 6 boxes, 12 boxes, 24 boxes and 48 boxes. Design a program to accept the number of boxes to be packed (N) by the user (maximum up to 1000 boxes) and display the break-up of the cartons used in descending order of capacity (i.e. preference should be given to the highest capacity available, and if boxes left are less than 6, an extra carton of capacity 6 should be used.)

Test your program with the following data and some random data:

Example 1

INPUT:
N = 726
OUTPUT:
48 * 15 = 720
6 * 1 = 6
Remaining boxes = 0
Total number of boxes = 726
Total number of cartons = 16

Example 2

INPUT:
N = 140
OUTPUT:
48 * 2 = 96
24 * 1 = 24
12 * 1 = 12
6 * 1 = 6
Remaining boxes = 2 * 1 = 2
Total number of boxes = 140
Total number of cartons = 6

Example 3

INPUT:
N = 4296
OUTPUT:
INVALID INPUT

Question 10

Write a program to accept a sentence which may be terminated by either '.', '?' or '!' only. The words are to be separated by a single blank space and are in uppercase.

Perform the following tasks:

(a) Check for the validity of the accepted sentence.

(b) Convert the non-palindrome words of the sentence into palindrome words by concatenating the word by its reverse (excluding the last character).

Example:

The reverse of the word HELP would be LEH (omitting the last alphabet) and by concatenating both, the new palindrome word is HELPLEH. Thus, the word HELP becomes HELPLEH.

Note: The words which end with repeated alphabets, for example ABB would become ABBA and not ABBBA and XAZZZ becomes XAZZZAX.

[Palindrome word: Spells same from either side. Example: DAD, MADAM etc.]

	(c) Display the original sentence along with the converted sentence. Test your program for the following data and some random data: Example 1 INPUT: THE BIRD IS FLYING. OUTPUT: THE BIRD IS FLYING. THEHT BIRDRIB ISI FLYINGNIYLF Example 2 INPUT: IS THE WATER LEVEL RISING? OUTPUT: IS THE WATER LEVEL RISING? ISI THEHT WATERETAW LEVEL RISINGNISIR Example 3 INPUT: THIS MOBILE APP LOOKS FINE. OUTPUT: THIS MOBILE APP LOOKS FINE. THISIHT MOBILELIBOM APPA LOOKSKOOL FINENIF Example 3 INPUT: YOU MUST BE CRAZY# OUTPUT: INVALID INPUT

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