MILESTONE ACADEMY SESSION-2021
SUMMER VACATION HOMEWORK
CLASS-XII

DATE OF SUBMISSION-

SUBJECT-ENGLISH

Q1. Write a letter to the editor of a national daily highlighting the neglect of our national monuments & how these are being damaged in the present day world.

Q2. Draft a poster on conservation of water and saving our sparrows.

Q3. Mahatma Gandhi once said, " I regard English language as an open window for preparing into western thoughts & science". Write a speech to be delivered in the in the morning assembly expressing your view points of "English in India

PHYSICS

Q1. Fill in the blanks :-

a. Electric intensityisa_____quantity and itsunitsare_____.
b. Due to an electric dipole, E axial/Eequatorial=_____.
c. The electric field due to an electricdipoleis_____symmetric.
d. Electrostaticforcesare_____forces.
e. Electric fluxisa_____quantity and itsunitsare_____.

Q2. . Select the correct answer from the codes (a),(b),(c) and (d) given below :

a. Both A and R are true and R is the correct explanation ofA.
b. Both A and R are true but R is not the correct explanation ofA.
c. A is true but R isfalse.
d. A is false and R is alsofalse.

Assertion :- If the electrons in an atom were stationary, then they would fall into nucleus.
Reason :- Electrostatic force of attraction acts between negatively charged electrons and positive nucleus

Q3. Write an expression for potential energy of two charges q1 and q2 at vector r1 and vector r2 in a uniform electric field E.

Q4. What is the work done in moving a test charge q through a distance of 1 cm along the equatorial axis of an electric dipole.

Q5. Wil there be any effect on potential at a point if the medium around this point is changed ?

Q6. Define the term electric dipole moment. Is it scalar or vector ?

Q7. Establish relation between electric field strength and force .

Q8. Explain the physical meaning of potential and potential difference .

Q9. Derive an expression for dipole field intensity at :

a. Axial line ofdipole
b. Equatorial line ofdipole.

Q10. State Gauss,s theorem in electrostatics . Apply this theorem to derive an expression for electric field intensity at a point near an infinitely long straight charged wire.

CHEMISTRY

LIST OF PROJECTS

1.Study of the presence of oxalate ions in guava fruit at different stages of ripening.

2.Study of quantity of case in present in different samples of milk.

3. Preparation of soya bean milk and its comparison with the natural milk with respect to curd formation, effect of temperature,etc.

4. Study of the effect of Potassium Bisulphate as food preservative under various conditions (temperature, concentration, time,etc.).
5. Study of digestion of starch by salivary amylase and effect of PH and temperature on it.
6. Comparative study of the rate of fermentation of the following materials: wheat flour, gram flour, potato juice, carrot juice,etc.
7. Extractio no essential oils present in Sauf (aniseed), Ajwain (carum),illaichi(cardamom).
8. Study of common food adulterants in fat, oil, butter, sugar, turmeric powder, chilli powder and pepper.
9. Any other investigatory projectyou can choose which involves about 10 periods of work.

.IMPNOTE-BackexercisesofSolutionchaptershouldalsobedoneduringsummerbreak.

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BIOLOGY

"Making an Investigatory PROJECT File"
[PartofCBSE/AISSCEFinalPracticalAssessment]
"Learn & Express"

Topic Selection:

Topic or Title of Project must be a part of our curriculum (C-12th)

Mode of Project:

Hand Written, Suitable Images, colourful diagrams etc. could be added to make it more presentable.

Paper Type & No. of pages:

A4 size bond paper could be use for written work, inclusive of few compulsory pages; 25 – 30 pages are rewarding for project. Writing Page No. is mandatory.

Project File:

Prepared pages should be kept in well spiral bounded form.

Note:
1. Do not hurry for binding without compulsorypages.
2. Once all written etc. work done, submit all pages of checking & after approval only go for final binding.

Resources:

Duly utilize authentic and standard materials from text book, science magazines and internet as well.

References / Bibliography:

Last page of file must carry names of material sources in alphabetical order.

Format for Compulsory Pages:

Front Page, Preface, Acknowledgement, Certificate etc. would be provided later.

Miscellaneous:

Any good contents or efforts which make file impressive, could be used consciously.

SUGGESTED TOPICS:

PCR, ECO SYSTEM, GAMETOGENESIS, VACCINE AND ANTIBIOTICS, POLLUTION IN AIR, POLLINATION, COVID-19, SEED DISPERSAL, BODY IMMUNITY, HIV / AIDS, CANCER, IVF, HYPERSENSITIVITY / ALLERGY, BIOTECHNOLOGY, DNA , RNA, PROTEINS, TECHNIQUES IN BIOTECHNOLOGY, MALARIA, HUMAN GENOME PROJECT, BIO-DIVERSITY, GENE THERAPY, R-DNA TECHNOLOGY, MENDELLIAN DISORGERS, PEDIGREE ANALYSIS etc.

MATHS

1. If $\begin{bmatrix} -x & 2 \end{bmatrix}\begin{bmatrix} 3 \\ 4 \end{bmatrix} = [2]$ then value of xis
2. Find the minorof $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$
3. For any 2×2 square matrix,A(adjA)$=\begin{bmatrix} -8 & 0 \\ 0 & -8 \end{bmatrix}$, then write the value of $|A|$
4. If A is a skew-symmetric matrix of order 3,then prove that diagonal element is always0.
5. Using cofactor of second row.Evaluate $\begin{vmatrix} 1 & 0 & 2 \\ 2 & 1 & 0 \\ 0 & 3 & 1 \end{vmatrix}$.
6. Ifthepoints$(2,-3),(k,-1),(0,4)$arecollinear,findthevalueofk.
7. Find inverse of the matrix.

$$(i)\begin{bmatrix} 2 & 1 & 3 \\ 4 & -1 & 0 \\ -7 & 2 & 1 \end{bmatrix}, (ii)\begin{bmatrix} 1 & 6 & 7 \\ -1 & 2 & 5 \\ 3 & -7 & 6 \\ 1 & -2 & 0 \\ 7 & 2 & -6 \end{bmatrix}$$

8. if $A=\begin{bmatrix}2 & 1 & 3\\ 0 & -2 & 1\end{bmatrix}$, $B=\begin{bmatrix}-2 & 1 & -3\\ -4 & 2 & 5\end{bmatrix}$.FindAB.Hencesolvethesystemoflinearequation
$x - 2y = 10, 2x + y + 3z = 8, -2y + z = 7.$

9. If $A=\begin{bmatrix}-2 & -1 & -2\\ 1 & 2 & 0\\ 0 & -1 & 1\end{bmatrix}$.Find$A^{-1}$,Using$A^{-1}$solvethesystemoflinearequation
$x - 2y = 10, 2x - y - z = 8, -2y + z = 7.$

ENGINEERING GRAPHICS

1. Draw isometric view of a hexagonal prism having a base with 30mm side and a 70 mm long Axis race resting on its base on the HP with an edge of the base parallel to the VP using box method
2. Draw an isometric view of a cylinder with a 50mm base diameter and a 70 mm long Axiswhen (a) The base is on the HP be (b)when one of the generators is on the HP
3. Drawtheisometricviewofapentagonalpyramidhavingabasewith30mmsideand50mmlongaxis (a) when the axis is vertical (b) when its axis is horizontal?
4. Draw a isometric view of frustum of of hexagonal pyramid having 35mm base with 20mm top sin in 80 mm long excess resting on its base on the HP with in age of the base parallel to the VP

COMPUTER PRACTICES

IN Practical/Report file: (Minimum 25 Python programs. Out of this at least 4 programs should send SQL commands to a database and retrieve the result and 15 SQL queries must be included)

INFORMATION PRACTICES

PHYSICAL EDUCATION

1. Prepare a project on:
   Any physical activity is better than none!!! - Importance of physical activities during Covid-19 pandemic.
2. Prepare a project on any one game of yourchoice:
   1. Basketball 2. Football 3. Kabaddi 4. Kho-Kho
   5. Volleyball 6. Handball 7. Hockey 8. Cricket

   (It should include:

   A. History,Labelleddiagramoffieldandequipments,RulesandRegulatiosofthegame Terminologies,Skills,Techniqueofplaying,Sportpersonalitiesofthegame.
   B. Physical FitnessTest
   * Meaning of motor fitness
   * AAPHER TEST(Pg no.158-160)
   * BARROW THREE ITEM GENERAL MOTOR ABILITY TEST(Pg no:163-164)
   C. Rules of track and fieldevents:
   * Fundamental skills of Shot put
   * Fundamental skills of Long jump

* FundamentalskillsofTriplejump

* FundamentalskillsofBroadjump

D. SportsInjuries

* Types of fracture

E. Asanas related to each lifestyle diseases(Procedures,benefits and contraindications of any two asanas for each lifestylediseases)

Note :- The total length of project will be 80to 90 pages.

The project should be handwritten.

The project should be presented in a neat folder:-

- **The cover page should include the title of the project, student information, school andyear.**
- **list ofcontents**
- **Acknowledge andpreface**
- **introduction**
- **Topic with suitableheading**

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