

CLASS XII HOLIDAY HOMEWORK 2021-2022

Subject: CHEMISTRY (043)

1. How does the doping increase the conductivity of semiconductors
2. A sample of ferrous oxide has actual formula $\text{Fe}_{0.93}\text{O}_{1.00}$. In this sample what fraction of metal ions are Fe^{2+} ions? What type of non stoichiometric defect is present in this sample?
3. Why does white ZnO (s) becomes yellow upon heating?
4. Why does the electrical conductivity of semiconductors increase with rise in temperature?
5. Silver crystallises in fcc lattice. If edge length of the cell is 4.07×10^{-8} cm and density is 10.5 g cm^{-3} , calculate the atomic mass of silver.
6. Difference between of the following
(i) Schottky defect and Frenkel defect (ii) Ideal and Non ideal solution (iii) Positive and negative deviation of non ideal solution.
7. 19.5 g of CH_2FCOOH is dissolved in 500 g of water. The depression in the freezing point of water observed is 1.0°C . Calculate the van't Hoff factor and dissociation constant of fluoroacetic acid
8. INVESTIGATION CHEMISTRY PROJECT FOR AISSCE EXAM 2021-22

Subject: COMPUTER SCIENCE (083)

- Q1. Write Arguments and Parameters in Function. Write code in Python.
- Q2. Describe Positional or required, default and keyword or named arguments with syntax.
- Q3. What are Void and Non Void function in Python. Write code in Python.
- Q4. What do you understand by Scope of variables. Define global and local scope. Give example for each.
- Q5. Create any three packages in pythons for function of realtime data.

Subject: PHYSICS (044)

Ques1: Practice the following derivations:

- Electric field due to an electric dipole at the axial and equatorial points.
- Torque on an electric dipole in uniform electric field.
- Deduction of Coulomb's law from Gauss's law.

Ques2: Find the electric field in three regions when two infinitely long and oppositely charged sheets of uniform surface charge density are kept together.

Ques3: Plot the graph between electric field intensity with the position of point P for the following:

- Point charge.
- Infinitely long sheet.
- Thin spherical charged shell.

Ques4: A ball of mass 6g carried a +ve charge of $2 \mu\text{c}$. What is the nature & magnitude of charge that should be given to second pitch ball fixed 5 cm vertically below the former, so that upper ball is stationary?

Ques5: Do your project work as assigned below:

<u>ROLL NO. 1-21</u>	<u>Study work to explore on Electrostatic shielding.</u>
<u>ROLL NO. 22-43</u>	<u>Study work to explore Polarization in Dielectrics.</u>

CLASS XII HOLIDAY HOME WORK SUBJECT MATHEMATICS

Q1. Let $A = \{1, 2, 3\}$. Then find the number of relation containing $(1, 2)$ and $(1, 3)$ which is reflexive, symmetric but not transitive.

Q2. Let $A = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$ and R be the relation in $A \times A$ defined by $(a, b) R (c, d)$ if $a + d = b + c$, for $(a, b), (c, d) \in A \times A$. Prove that R is an equivalence relation, also obtain the equivalence class $[(2, 5)]$.

Q3. Let $A = \mathbb{R} - \{3\}$ and $B = \mathbb{R} - \{1\}$. Consider the function $f: A \rightarrow B$ defined by $f(x) = \frac{x-2}{x-3}$. Show that f is one – one and onto. Hence, find f^{-1} .

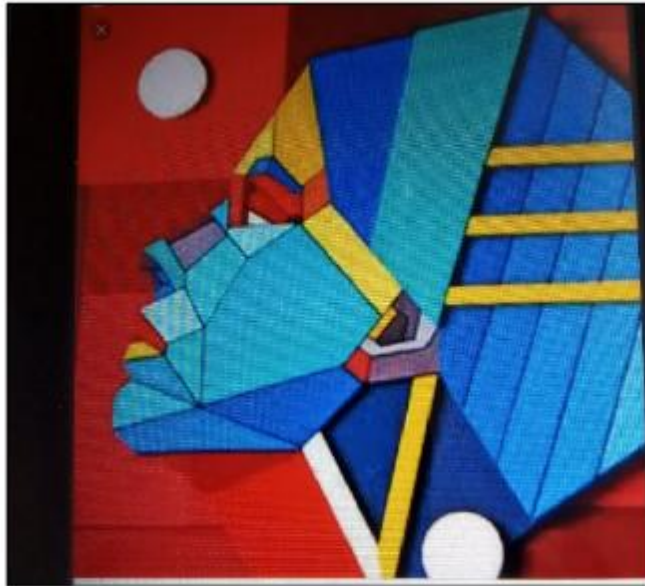
Q4. Let $f: \mathbb{N} \rightarrow \mathbb{R}$ be a function defined as $f(x) = 4x^2 + 12x + 15$. Show that $f: \mathbb{N} \rightarrow S$, where S is the range of f is invertible. Find the inverse of f .

Q5. ART INTEGRATED PROJECT

Sikkim, a thinly populated North Eastern Indian state is a house to three communities:

Nepalis, Lepchas and Bhutias. Sikkim is a blessed land, where people from all communities live in harmony.

Using your creativity and imagination, draw a Human Face (Sikkim tribes) using geometrical shapes. Referring to the sample picture provided below, students can use vibrant and bold colours of their own choice.



Material Required:

1. A3 size pastel sheet OR any suitable Materials available with you 2. Colours 3. Geometry box etc.

OR

‘Literacy is a road to human progress’

Literacy is the fundamental human right. After independence, there has been the significant increase in the literacy percentage in North Eastern states of India.

Comparison of state wise literacy of North-East India according to 2001 and 2011 census:

<u>State</u>	<u>Literacy rate of 2001</u>	<u>Literacy rate of 2011</u>
<u>Arunachal Pradesh</u>	<u>54.3</u>	<u>65.4</u>
<u>Assam</u>	<u>63.3</u>	<u>72.2</u>
<u>Manipur</u>	<u>70.5</u>	<u>76.94</u>
<u>Meghalaya</u>	<u>62.6</u>	<u>74.4</u>
<u>Mizoram</u>	<u>88.8</u>	<u>91.3</u>
<u>Nagaland</u>	<u>66.6</u>	<u>79.6</u>
<u>Sikkim</u>	<u>68.8</u>	<u>81.4</u>
<u>Tripura</u>	<u>73.2</u>	<u>87.2</u>

Represent the above data highlighting the growth in literacy rate of North Eastern states for both the years on the same graph.

Material required:

1. A-3 size sheet 2. Thread / wool / coloured pens 3. Stud / Bindi / Sequins 4. Fevicol etc.

Class XII English Core (301)

Homework: (Use English Classwork Copy)

Q1: Comment on the appropriateness of the title The Last Lesson. (200 words) **10**

Assignment: (Use A4 size file papers)

Q1: Write a letter to the Editor of The Indian Express, New Delhi complaining about the frequent breakdowns in the supply of electricity in your locality, Tilak Avenues, New Delhi. (150 words.) **10**

Q2: Keeping in view the frequent occurrence of earthquakes in the state, your school arranged a talk on Disaster Management. As a student reporter, Ravi/ Rani, write a report on the event to be sent to a national daily. (150 words) **10**

ART INTEGRATED PROJECT:

Q4: Listen to classical/ traditional music programme on Radio or watch classical/ traditional music or Dance programme TV and write short description of the performances. (To be written on scrap book, paste pictures too) **50**

कक्षा – xii विषय हिन्दी	
प्रश्न -1	दिन जल्दी जल्दी ढलता है – की आवृत्ति से कविता की किस विशेषता का पता चलता है ?
प्रश्न -2	भक्तिन अपना वास्तविक नाम लोगों से क्यों छुपाती थी ? भक्तिन को यह नाम किसने और क्यों दिया होगा ?
प्रश्न -3	भक्तिन के बेटी के प्रति पंचायत का निर्णय अनुचित है अपने तर्कों के आधार पर सिद्ध कीजिए ।

BIOLOGY HOMEWORK

1. Draw neat and well labelled diagram(minimum 6 labelling) of the following:
 - a) Anatoous ovule
 - b) Anther
 - c) Seminiferous tubule
 - d) Human sperm
 - e) Female reproductive tract
 - f) Menstrual cycle
2. Choose one topic for investigatory project collect information on it/ perform it and present it in soft copy.
3. Can you list the changes seen in human beings that are indicative of reproductive maturity?
4. Find out the names of 5 more flowers that are used in social and cultural celebrations in your family? Have you heard of floriculture what does it refer to?
5. Both wind and water pollinated flowers are not very colorful and don't produce nectar , what would be the reason for this?