ARMY PUBLIC SCHOOL JORHAT

AY:2023-24
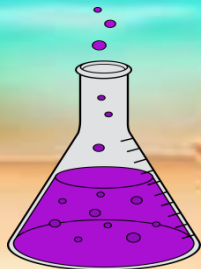
SUMMER HOLIDAY HOMEWORK

CLASS-XII Science

ARMY PUBLIC SCHOOL JORHAT

CLASS: XII Science (2023-24)

HOLIDAY Homework

DATE OF SUBMISSION: 12.07.2023

Assamese Culture

SUBJECT			
MATHEMATICS		✅	
Physics		✅	
chemistry		✅	
Biology		✅	
IP		✅	
English		✅	
Physical Education		✅	

Enjoy your SUMMER holiday

MATHEMATICS

SUB : Mathematics

1. Let A be the set of all human beings in a town at a particular time. Determine whether each of the following relations are reflexive, symmetric and transitive:
(i) R = {(x,y) :x and y work at the same place }
(ii) R = {(x, y): x and y live in the same locality}
(iii) R = {(x, y): x is wife of y}
(iv) R = {(x,y):x is father of y}

2. Test whether the following relations R 1 , R 2 , and R 3 are (i) reflexive (ii) symmetric and (iii) transitive:
(i) R 1 on Q0 defined by (a,b) ⬚ R 1 ⬚ a = 1/b.
(ii) R 2 on Z defined by (a, b) ⬚ R 2 ⬚ | a - b | ≤ 5
(iii) R 3 on R defined by (a, b) ⬚ R 3 & a 2 - 4ab + 3b 2 = 0.

3. Give an example of a relation which is
(i) reflexive and symmetric but not transitive;
(ii) reflexive and transitive but not symmetric;
(iii) symmetric and transitive but not reflexive;
(iv) symmetric but neither reflexive nor transitive.
(v) transitive but neither reflexive nor symmetric.

4. Prove that the relation R on Z defined by (a, b) ⬚ R ⬚ a -b is divisible by 5 is an equivalence relation on Z.

5. Let S be a relation on the set R of all real numbers defined by S = {(a,b) ⬚ R x R : a 2 + b 2 = 1} Prove that S is not an equivalence relation on R.

6. If R and S are relations on a set A, then prove that
(i) R and S are symmetric ⬚ R ⬚ S and R ⬚ S are symmetric
(ii) R is reflexive and S is any relation ⬚ R ⬚ S is reflexive.

7. Order 3 × 3 find |A −1 | =?

8. Order 3 × 3 ; |A| = 3and |2 AB| = 120 find |B'| =?

9. If n = 3 × 3 find |Adj(Adj A)| and |A| = 5

10. Find the value of x if the area of Δ is 35 square units with vertices (x, 4), (2, −6) and (5, 4)

11. An amount of Rs 5000 is put in to three investments at the rate of interest of 6%,7% and 8 % per annum. The total annual income is Rs 358. If the combined income from the first two investments is Rs 70 more than the income from the third, find the amount of each investment by matrix method.

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13. a) Find area of ΔABC whose vertices are A(3, 8), B(−4, 2), C(5, −1).
(b) Find equation of line joining A(3, 5) & B(4, 2) using determinants.
(c) Find value of λ so that points (1, −5), (−4, 7) and (λ, 7) are collinear.
14. Solve the equations using matrix method
�� + 2�� + �� = 7 ; � + 3�� = 11 ; 2�� − 3��

Physics

: **Physics**

Task: To work on investigatory project and make the file for investigatory project.
Following topics are given to students (topics apart from them can be chosen given that you inform the teacher beforehand):-

1. To study various factors on which the internal resistance/EMF of a cell depends.

2. To study the variations in current flowing in a circuit containing an LDR because of a variation in
    (a) The power of the incandescent lamp, used to 'illuminate' the LDR (keeping all the lamps at a fixed distance).
    (b) The distance of a incandescent lamp (of fixed power) used to 'illuminate' the LDR.

3. To find the refractive indices of (a) water (b) oil (transparent) using a plane mirror, an equiconvex lens (made from a glass of known refractive index) and an adjustable object needle.

4. To investigate the relation between the ratio of

5. (i) output and input voltage and (ii)Number of turns in the secondary coil and primary coil of a self-designed Transformer.

6. To investigate the dependence of the angle of deviation on the angle of incidence using a hollow prism filled one by one, with different transparent fluids.

7. To estimate the charge induced on each one of the two identical Styrofoam (or pith) balls suspended in a vertical plane by making use of Coulomb's law.

8. To study the factor on which the self-inductance of a coil depends by observing the effect of this coil, when put in series with a resistor/(bulb) in a circuit fed up by an A.C. source of adjustable frequency.

9. To study the earth's magnetic field using a compass needle -bar magnet by plotting Magnetic field lines and tangent galvanometer.

Chemistry

INVESTIGATORY PROJECT

Scientific investigations involving laboratory testing and collecting information from other

Sources Prepare a soft copy (Power Point Presentation / MS WORD file) for AISSCE Chemistry

Practical Examination 2023-24.

A few suggested projects:

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

➢ Study of quantity of casein present in different samples of milk.

➢ Preparation of soybean milk and its comparison with the natural milk with respect to

curd formation, effect of temperature, etc.

➢ Study of the effect of Potassium Bisulphate as food preservative under various

conditions (temperature, concentration, time, etc.).

➢ Study of digestion of starch by salivary amylase and effect of pH and temperature on

it.

➢ Comparative study of the rate of fermentation of following materials: wheat flour,

gram flour, potato juice, carrot juice, etc.

➢ Extraction of essential oils present in Saunf (aniseed), Ajwain (carum), Illaichi

(cardamom).

➢ Study of common food adulterants in fat, oil, butter, sugar, turmeric power, chilli

powder and pepper.

➢ Study of Content of cold drink available in the market.

➢ Determination of caffeine in different tea samples.

➢ Drug addiction and abuse.

➢ Study the presence of insecticides, pesticides (nitrogen containing) in various fruits &

vegetables.

➢ Study of different composition of beehive products.

➢ Antioxidant activity.

Note: Any other investigatory project, which involves about 10 periods of work, can be

chosen with the approval of the teacher.

Biology

1. Prepare any one topic from first four chapters for presentation in class and write it in a separate note book.

2. Perform Mendel's monohybrid and dihybrid cross.

3. Draw the structure of DNA double helix and label the bonds and molecules involved.

IP

Class XII SCIENCE IP -065

Summer Vacation HW

1. Write two examples of DML commands to SQL.
2. When using the LIKE clause, which wildcard symbol represents any sequence of none, one or more characters?
3. Write the UPDATE statement in MySQL to increase commission by 100.00 in the "Commission" column in the 'EMP' table.
4. Rewrite the following SQL statement after correcting the error(s). Underline the corrections made. (All India 2014C)
```
INSERT IN STUDENT(RNO, MARKS)
VALUEC5, 78.5);
```
5. Table 'CLUB' has 4 rows and 3 columns. Table 'MEMBER' has 2 rows and 5 columns. What will be the cardinality of the Cartesian product of them?
6. Write the command to display the list of existing databases
7. Sarthak, a student of class XI created a table "CLASS". Grade is one of the column of this table. To find the details of students whose Grades have not been entered, he wrote the following MySQL query, which did not give the desired result

```
SELECT * FROM CLASS
WHERE GRADE = "NULL"
```
Help Sarthak to run the query by removing the errors from the query and write the correct query.

8. Amit, a salesman in an Outlet, created a table TRANSACTIONS an Amount is one of the column of this Table. To find the details of customer whose transaction amount is more than 800, he wrote the following MySQL query, which did not give the desired result:

```
SELECT * FROM TRANSACTIONS
WHERE Amount > "800";
```
9. Differentiate between COMMIT and SAVEPOINT.

English

Students can select any one of the given topics for your English Project:

1. Bioterrorism (A Looming Threat) :
Links for
reference: https://youtu.be/Faftnz8cg7E https://youtu.be/b6NI97v2buc https://youtu.be/6Af6b_wyiwI

Include the following sub-headings:
• What is bio-terrorism?
• Consequences of such wars
• Measures that can be undertaken to prevent it.
• Role of youth ('Gen X') in creating a world bereft of wars. Present this sub-topic creatively. You can compose / reproduce a poem/poster to depict the same.

2. 'Understanding Kamla Das a little more'. You all have studied the poem 'My mother at 66' by Kamla Das. 'My Grandmother's House' is another poem written by the same poet- Kamla Das. Make a comparative study of both these poems by the same poet

Links for reference:

https://www.britannica.com/biography/Kamala-Das
https://www.poetrynook.com/poem/my-grandmothers-house

Include the following sub-headings in your project:

¬ A detailed study of the poet
• Her life
• Her works
• Her style of poetry
¬ Comparison between the two poems. It should include-
• The similarities
• The differences
• The theme in both the poems
• Your reflections about both the poems

Holiday Homework for Physical Education : (2023-24)

Chapter 4:

Q1. What are the strategies to make physical activities accessible for children with special needs?

Q2. Describe some measure you will take to ensure health and safety of children with special needs during physical education training.

Q3. Briefly explain the types of disability and disorder in detail.

Q4. 'There is no cure of austism, yet it's problem can be reduced.' Comment.

Q5. You see a person on the wheelchair who wants to go the second floor of the building. What will you do to help the person? (Value based question)

CHAPTER 5:

Q1. Raghav is studing in class 4 and his lunch box is full of junk food. He refuses to eat chapatti, rice, dal, vegetable and salad. Based on the above statement, answer the following questions: (value based question)

I) What do you mean by balanced diet? Explain.

II) What physiological changes will take place in Raghav during adolescence?

III) Discuss the food myth.

Q2. Describe the consideration in meal intake which should be taken before, during and after a competition.

Q3. Vitamins are very essential for the working of the body and are divided into two groups. Explain about them.

Q4. Diet for sports person is very important. What should be the aims of preparing diet for sportsperson?

Q5. Discuss the Nutritive and Non-nutritive components of diet.

Q5. Differentiate between food intolerance and pitfalls of dieting.

Q6. Why does the weight lifters' diet include lotes of protein?
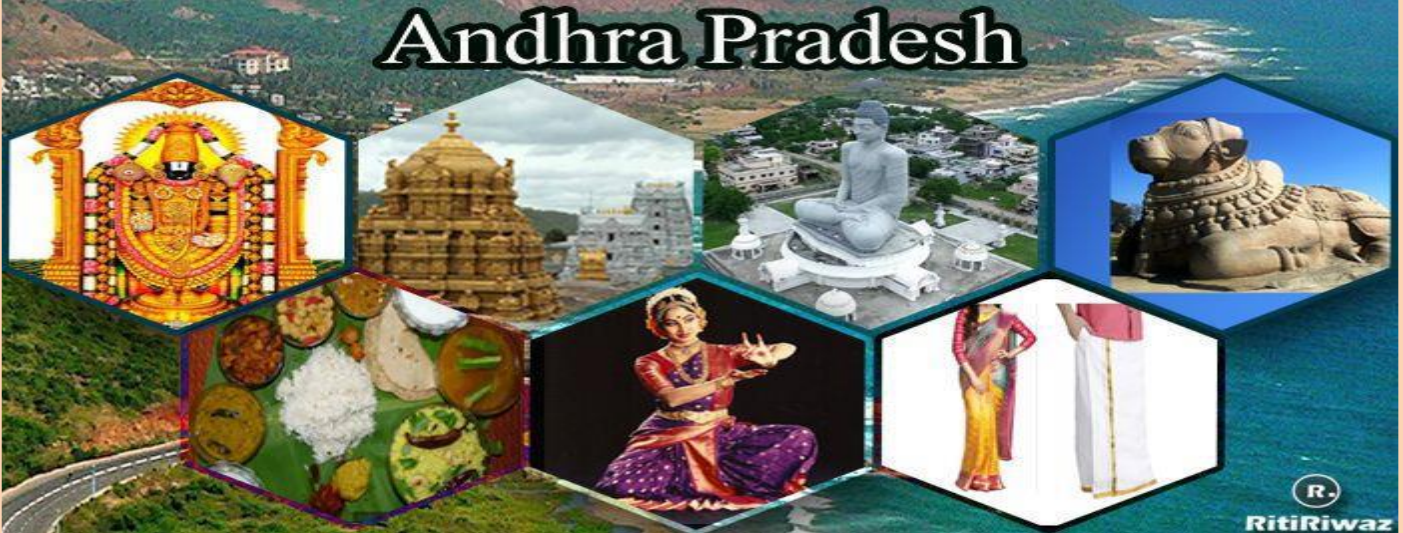
Practical File:

**Record File shall include:
➢ **Practical-1:** Fitness tests administration. (SAI Khelo India Test)
➢ **Practical-2:** Procedure for Asanas, Benefits & Contraindication for any two Asanas for each lifestyle disease.
➢ **Practical-3:** Anyone one IOA recognized Sport/Game of choice. Labelled diagram of Field & Equipment. Also, mention its Rules, Terminologies & Skills.

PRESCRIBED TEXTBOOKS (CLASS XI & XII)

CBSE Physical Education Class XI Text Book
https://cbseacademic.nic.in//web_material/Manuals/PhysicalEducation11_2022.pdf

Andhra Pradesh

enjoy all days venture to do

Happy

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Thank You