

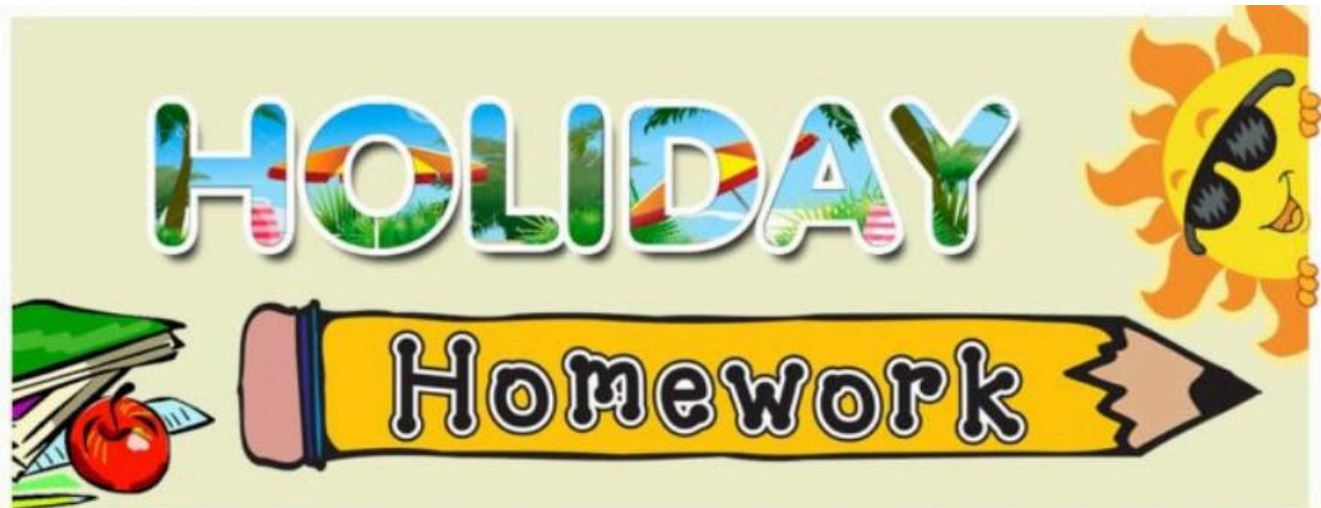


CARMEL CONVENT SCHOOL

2024-25

SUMMER HOLIDAY

HOMEWORK



Summer Holidays homework

ENGLISH

I. Poster Making

A poster is a large sheet that is placed either in a public space to promote something Or to give a message on relevant social/other issues. Typically, posters include both textual and graphic elements, although a poster may be either wholly graphical or Wholly text. Posters are designed to be both eye-catching and informative.

Design an attractive poster (A4 sheet) on the the following topics.

1. Design a poster on the theme of "Climate change in 2050"
2. You are a member of the social awareness team of your school and you have to participate in an awareness drive regarding the importance of water. Prepare a poster highlighting the importance and ways of rainwater harvesting that can be implemented by the residents of the area.
3. Your school is celebrating Science week. Prepare a poster to create awareness regarding the importance of science in our daily lives.
4. You are a fitness trainer in a college. Design a poster in not more than 50 words, to be put up on the college notice board, to emphasize the importance of yoga in maintaining mental and physical fitness. You are Vishal / Vishali.

II. Newspaper Activity:

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Cut out and paste (minimum 2 each) clippings of classified advertisement from the Newspaper under the heading:

- Situation Wanted
- Situation Vacant
- Property For Sale
- To-Let

III. Newspaper Activity

Reading the newspaper is a habit that will help you throughout your life, because of The many benefits it has. This vacation, use the newspaper to enhance your Vocabulary. As you read the newspaper, pick out a new word that you come across. Cut out the portion of the paper that contains the word. Paste it in your copy and highlight that word. Look up the meaning and usage and frame 2 sentences using the new word you have learnt. You have just made friends with a new word!! Do This activity till you have at least 15 new words in your repertoire.

IV. The lesson 'The Portrait of a Lady' suggests a growing distance between the Younger and older generation. Write a speech in about 150 words to be delivered in The morning assembly of the school on the above topic, on the basis of your reading Of the text.

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V. Why do you think people undertake such adventurous expeditions in spite of the Risks involved? Evaluate, in the context of your understanding of 'We 're Not Afraid To Die....if We Can All Be Together'.

NOTE: Activity II, III, IV&V should be done in the English register and submitted

PHYSICS

1. Draw position-time graphs for two objects having zero relative velocity.
2. A ball is thrown vertically upwards. Draw its velocity-time curve.
3. A body traveling along a straight line traversed one total of the total distance with a total velocity 4 ms^{-1} . The remaining part of the total distance was covered with a velocity 2 ms^{-1} for half the time and with velocity 6 ms^{-1} for the other half of time. What is the mean velocity averaged over the whole time of motion? (4 ms^{-1})
4. A car traveled the first third of a distance x at a speed of 10 km/h , the second third at a speed of 20 km/h and the last third at a speed of 60 km/h . Determine the average speed of the car over the entire distance x . (18 km h^{-1})
5. A stone is dropped from a balloon at an altitude of 300 m . How long will the stone take to reach the ground if (i) the balloon is ascending with a velocity of 5 ms^{-1} (ii) the balloon is descending with a velocity of 5 ms^{-1} (iii) the balloon is stationary?
(8.36 s ; 7.33 s ; 7.82 s)

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6. A particle moves along a straight line such that its displacement s at any time t is given by $s = t^3 - 6t^2 + 3t + 4$ metres. Find the velocity, when the acceleration is zero.

(-9 ms^{-1})

7. A police jeep is chasing a culprit going on a motorbike. The motorbike crosses a turning at a speed of 72 km/h . The jeep follows it at a speed of 108 km/h , crossing the turning ten seconds later than the bike. Assuming that they travel at constant speeds, how far from the turning will the jeep catch up with the bike. (600m)

8. A body travels a distance of 20 m in the 7th second and 24 m in 9th second. How much distance shall it travel in the 15th second? (36 m)

9. A body falling from rest was observed to fall through 78.4 m in 2 seconds. Find how long had it been falling before it was observed? (3 sec)

10. A bird flies for 4 s with a velocity of $|t-2| \text{ m/s}$ in a straight line, where $t =$ time in second. What is the total distance covered by the bird? (4 m)

11. Two cars are moving in the same direction with the same speed of 30 km/h . They are separated by a distance of 4 km . What is the speed of a car moving in the opposite direction if it meets these two cars at an interval of 5 minutes. (18km/h)

12.. The distance x of a particle moving in one dimension, under the action of a constant force is related to time t by equation $t = \sqrt{x} + 3$ where x is in metres and t in seconds. Find the displacement of the particle when its velocity is zero. (zero)

Prepare an investigatory project

(Suggested Investigatory Projects)

1. To Study and Determine the Density of the Solids
2. To Study of the Parallelogram Law of the Vectors
3. To Study of Pascal's Law and its Applications
4. To Study of the Zeroth Law of the Thermodynamic
5. To Study and Investigate the Motion of the Pendulum
6. Study of the Equilibrium of the Concurrent Forces
7. To Study and Construct a Circuit of the Clap Switch
8. To Study the Hooke's Law, Stress-Strain Relationship
9. To Study of the Transformation Energy from the Deep
10. To Study the Principle of Superposition of the Waves
11. To Study and Measure the Temperature by using the Sound

CHEMISTRY**(Assignment A)**

Some basic concepts in Chemistry

- 1 How many moles of NaOH are contained in 27 ml of 0.15 M?
2. Calculate the number of atoms in each of the following:
 - a - 52 moles of He
 - b - 52 u of He
3. Calculate the molarity of of 1 L of solution of ethanol in water in which the mole fraction of ethanol is 0.040.

4. If ten volumes of dihydrogen gas reacts with five volumes of dioxygen gas, how many volumes of water vapour could be produced?
5. Calculate the molarity of NaOH in the solution prepared by dissolving its 4gms in enough water to form 250mL of the solution.
6. The density of 2 molal solution of NaOH is 1.10 g per ml. Calculate the molarity of the solution.
7. How many atoms and molecules of phosphorous are present in 124gms of phosphorous (P₄)?
8. A 6.9M solution of KOH in water contains 20% by weight of KOH. Calculate the density of solution.
9. Calculate the molality and molarity of 1 L solution of 93% H₂SO₄(Wt. /Vol). The density of solution is 1.84g/ml.
10. Chlorophyll the green coloring matter of plants responsible for photosynthesis contains 2.68% of magnesium by weight. Calculate the number of magnesium atoms in 2.0 g of chlorophyll.
11. Calculate molality, Molarity and mole fraction of KI if the density of 20% aqueous KI solution is 1.202 g/ml.
12. What volume of O₂ at N.T.P is needed to cause the complete combustion of 200 ml of acetylene? Also calculate the volume of CO₂ formed.
13. Butyric acid contains only C, H and O. A 4.24 mg sample of butyric acid is completely burned. It gives 8.45mg of CO₂ and 3.46 mg of H₂O. The molecular mass of butyric acid was determined by experiment to be 88amu. What is its molecular formula?

(Assignment B)

Structure of atom

1. How can you show using Pauli's exclusion principle that p sub shell can have only 6 electrons?
2. What are the values of 'n' and 'l' for 6g?
3. How many number of unpaired electrons are present in Fe²⁺ (Z=26)?
4. What is the ratio of the energy of a photon of $\lambda = 100\text{pm}$ to that of one of $\lambda = 200\text{pm}$?
5. How many radial nodes are present in 2p and 3s orbital?
6. Out of Fe²⁺, Fe³⁺, which is more stable and w
7. Calculate the uncertainty in the position of an electron if uncertainty in its velocity is 0.001%.

The mass of electron = 9.11×10^{-31} kg and velocity of electron = 300m/s.

8. Account for the following.
 - a. The expected electronic configuration of copper is [Ar] 3d⁹ 4s² but actually it is [Ar] 3d¹⁰ 4s¹
 - b. In building up of atoms the filling of 4s orbitals occur before 3d orbitals
 - c. Spin quantum number can have only 2 values +1/2 and -1/2
9. Write short note on the following
 - a. Aufbau principle.
 - b. Heisenberg's uncertainty principle.
 - c. Hund's rule.
 - d. Photo electric effect.
 - e. Black body radiation
10. Derive a relationship between the wavelength associated with a moving particle and its kinetic energy

(Assignment C)

Project based

Topic: Build your own element

Directions: Build your own element using the following information:

Name of the element: use your class roll number (confirm your roll number from your class teacher)

*Symbol, atomic number, mass number

*Electronic configuration & Electronic structure

* Isotopes / Allotropes (if any)

* Position (group & period) of the element in the modern periodic table

* History of the element

* Importance of the element and its compounds in various fields

* Uses of at least 10 important compounds of the element

Learning objectives: * Learn about various elements, importance of these elements in various fields and the structural aspects of these elements.

Rubrics:

Creativity: Content: Presentation:

a) INTRODUCTORY PAGE

b) CERTIFICATE

c) ACKNOWLEDGEMENT

d) INDEX/CONTENTS

e) INTRODUCTION

f) AIMg) OBSERVATIONS

h) RESULT

i) CONCLUSION

j) BIBLIOGRAPHY

SUBJECT: BIOLOGY

Q1. Mention the distinguishing characteristics of cyanobacteria.

Q2. Differentiate between.. i) deuteromycetes and ascomycetes. ii) Virus and viroid's iii) Photobiont and mycobiont

Q3 Define red tides, diatomaceous earth, chemoautotrophs, karyogamy

Q4. Draw a well labelled diagram of a virus that has a) Single stranded RNA as genetic material, b) double stranded DNA as genetic material, c) Euglena, d) paramecium

Q5. Explain the following terms- a) Protonema, b) Prothallus, c) Gemmae, d) Oogamy, e) Heterospory, f) sporophyll

Q6. Describe the identifying characteristics of Bryophyta, Pteridophyte and Gymnosperms.

Q7. Prothallus of the fern is monoicous, Justify.

Q8. What are hydrocolloids? Give two examples.

Q9. Name two algae that yield agar. Mention two uses of agar.

Q10. What is meant by Cytotaxonomy? How is it different from numerical taxonomy?

Q11. Write down scientific name of the followings : Wheat, Tiger, Frog, earthworm, cockroach, Rose, China rose, lizard, onion & potato.

Q12. International Code of Botanical Nomenclature (ICBN) has provided a code for classification of plants. Give hierarchy of units of classification botanists follow while classifying plants and mention different "Suffixes" used for the units.

Q13. Learn and write 10 Botanical names and 10 Zoological names of plants and animals found in your surroundings along with their common name.

Q14. Draw well labelled diagram of

a) Female thallus of liverworts.

b) Male thallus of liverworts.

Q15: Draw a neat and clean well labelled life cycle of an angiosperm, using innovative methods.

Q16. Justify that Lichens are the pioneer organisms?

Q17. Which alga is popularly called “devils apron” and why? Give a detailed account of the alga in support to your answer.

Q18. Give reason for the followings:

- a) Organisms belonging to same ‘class’ will have more features in common in comparison to organisms belonging to same order but two different classes.
- b) Two kingdom classification was replaced by the five kingdom classification.
- c) Arachae bacteria are able to survive in extreme environmental conditions like hot sulphur springs.

- ❖ Do self study of the chapters “Morphology of flowering plants”. Consult your text book for this chapter.
- ❖ Study material for these chapters will also be provided to you. Test of this chapter will be conducted after summer vacations.

Project

Prepare one Investigatory Project on any one of the following topic

- ❖ Microbes in human welfare
- ❖ Adaptations in living organisms (as per CBSE guidelines).
- ❖ Steps to be followed

- a) INTRODUCTORY PAGE
- b) CERTIFICATE
- c) ACKNOWLEDGEMENT
- d) INDEX/CONTENTS
- e) INTRODUCTION
- f) AIM
- g) OBSERVATIONS
- h) RESULT
- i) CONCLUSION
- j) BIBLIOGRAPHY

Subject : Mathematics

1. **Project work** : Project on history of Mathematicians: It may include history of Indian mathematicians such as Aryabhata, Brahmagupta, Varahamihir, Sridhara, Bhaskaracharya, Ramanujan etc., and history of foreign mathematicians such as Cantor, Pythagoras, Thales, Euclid, Appollonius, Descartes, Fermat, Leibnitz, Euler, Fibonac, Gauss, Newton, etc.

2. Revise all the work done in the class and complete your notebook.

3. Lab manual activities :

- a) To find the number of subsets of a given set and verify that if a set has n number of elements, then the total number of subsets is 2^n .
- b) To verify that for two sets A and B , $n(A \times B) = pq$ and the total number of relations from A to B is 2^{pq} , where $n(A) = p$ and $n(B) = q$.
- c) To represent set theoretic operations using Venn diagrams.
- d) To identify a relation and a function.
- e) To distinguish between a Relation and a Function.
- e) To verify the relation between the degree measure and the radian measure of an angle.

- f) To prepare a model to illustrate the values of sine function and cosine function for different angles which are multiples of $\pi/2$ and π .
- g) To verify that the graph of a given inequality, say $5x + 4y - 40 < 0$, of the form $ax + by + c < 0$, $a, b > 0$, $c < 0$ represents only one of the two half planes.
- h) To construct a Pascal's Triangle and to write binomial expansion for a given positive integral exponent.

Physical education.

1. Draw 400mtr. Track and field events.
 - .shot-put .
 - .discuss throw.
 - .javelin throw
 - . Long jump.
2. Draw seven yoga asanas of your own choice their Procedures, precautions and benefits.
3. Do physical exercise daily at home atleast 30min. .

Subject:Psychology

1. Conduct a study in your group to see the effect of recitation on learning of poetry. Take 10 six-year olds and divide them into two groups. Give group 1 a new poem to learn and instruct them to read it loudly for 15 minutes. Take group 2 and give them the same new poem to learn but instruct them not to read it loudly. After 15 minutes ask the two groups to recall. Care needs to be taken to see that both the groups are dealt with separately. After the recall has taken place, note down the observation.

Identify what method of research you used, the hypothesis, the variables and the kind of experimental design that were there. Compare notes with the other groups and share the result with your teacher in the class.

Subject : Informatics Practices

1. Write a Python code to show the implementation of the entire mathematical operator.
2. Write a code to read marks of 5 different subjects from the standard input device (keyboard). Calculate average and grade (using if condition) for given marks and display the result in a proper format.
3. Write a code to calculate Simple and Compound interest.
4. To calculate profit-loss for given Cost and Sell Price.
5. To calculate EMI for Amount, Period and Interest.
6. To find the largest and smallest numbers in a list.

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7. To find the sum of squares of the first 100 natural numbers.
8. To print the first 'n' multiples of given number.
9. To print the given pattern

```
1
2  2
3  3  3
4  4  4  4
```

10. Create a dictionary to store names of states and their capitals.

SUB :- HINDI

• राजस्थान की रेतीली भूमि में पानी के स्रोत केवल वहां की जल समस्या का समाधान नहीं है बल्कि जमीन की अतल गहराइयों में जीवन की पहचान है इस बात को सिद्ध करते हुए वहां के जल सब व्यवस्था पर निम्नलिखित बिंदुओं के आधार पर निबंध तैयार कीजिए | शब्द सीमा **200 - 250** तक)

- राजस्थान में जल की स्थिति
- जल के आंकड़े
- जल काम क्यों है
- सरकार के प्रयास
- लोगों की जागरूकता
- आज की स्थिति

