



# SACRED HEART SCHOOL

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ASSIGNMENTS FOR SUMMER VACATION (2025-26)

## Class – XII

### SUBJECT- ENGLISH

1. Share a happy picture of yourself and describe yourself briefly. (Answer in about 150 words)  
Who are you as a person? What are your dreams or goals? What are your strengths and weaknesses? Also, what are the little things that keep you happy in life?
2. What do you love most about the English language? (Answer in about 100 words) It could be a specific part of the subject like prose, poetry, drama, or grammar. Describe why you enjoy it and how it connects with you personally.
3. Have you read any story book or novel apart from your coursebook? (Answer in about 100 words) If yes, briefly describe the book and share what you liked most about it—whether it's the characters, storyline, message, or writing style.
4. What qualities do you admire most in other people, and why? (Answer in about 100 words) It could be honesty, kindness, confidence, creativity, or anything else. Explain what draws you to those traits.

(Above 1 to 4 to be done in a separate note book)

(Following to be done in English note book)

### Writing Skills Practice

#### 1. Notice Writing:

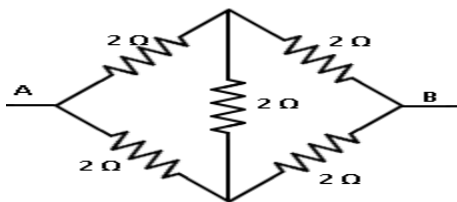
- (a) Your school is organizing a workshop on Cyber Safety for students. Draft a notice inviting students to attend the workshop.
- (b) You have lost your library card on the school premises. Write a notice for the school notice board.
- (c) As the Secretary of the Music Club of your school, draft a notice inviting students to audition for the Annual Music Competition.
- (d) Your school is organizing a tree plantation drive on the occasion of World Environment Day. Write a notice informing students about the event.

#### 2. Letter to the editor

- (a) Write a letter to the editor of a national daily highlighting the need to ban the use of plastic bags.
- (b) Write a letter to the editor expressing concern over the rising cases of cybercrime.
- (c) Write a letter to the editor regarding the increasing traffic jams and suggest solutions.
- (d) Write a letter to the editor about the neglect of historical monuments and suggest measures for their preservation.

### SUBJECT- PHYSICS

1. Ncert question number 3.1 to 3.15 current electricity
- 2.




Find  $R_{AB}$

## SUBJECT- CHEMISTRY

1. A first order reaction is 50% complete in 50 minutes at 3000 Kelvin and the same reaction 50% complete in 25 minutes at 350 Kelvin calculate activation energy of the reaction.
2. For a first order reaction so that the time required for 99% completion of the reaction is twice the 90% completion of the reaction.
3. The decomposition of  $\text{NH}_3$  on platinum surface is zero order reaction if rate constant  $k$  is  $4 \times 10^3 \text{ s}^{-1}$  how long will it take to reduce the initial concentration of  $\text{NH}_3$  from 0.1M to 0.064M.
4. Define half life of a reaction write the expression of half life of zero order and the first reaction.
5. The decomposition of a compound is found to follow a first order rate law if it takes 15 minutes for 20% of original material to react calculate the rate constant and the time at which 10% of the original material remains unreacted.

## SUBJECT- BIOLOGY

1. Write a short biography about famous scientist, G. J. Mendel as father of genetics, which performed hybridization experiment on a garden pea plant (*Pisum sativum*) in 300 words.
2. Present time India's populations are increasing more and more. What methods and contraceptive methods are adoptive to control population and VD's.
3. Students will visit the garden and observed the garden pea plant. Name the scientist which are associated with the hybridization experiment related on garden pea . Find its related experiment of hybridization of monohybrid and dihybrid cross and obtain its ratio as phenotypic and genotypic ratio.

## SUBJECT- MATH

1. A relation  $R$  on a set  $A$  is said to be an equivalence relation on  $A$  if it is  
Reflexive i.e.  $(a, a) \in R \forall a \in A$   
Symmetric i.e.  $(a, b) \in R \implies (b, a) \in R$   
Transitive i.e.  $(a, b) \in R$  and  $(b, c) \in R \implies (a, c) \in R \forall a, b, c \in A$   
**Based on the above information, solve the following questions**  
(a) IF the set  $A = \{(1, 1), (1, 2), (1, 3), (2, 2), (2, 3), (3, 1), (3, 2), (3, 3)\}$  defined on the set  $A = \{1, 2, 3\}$ , then show that the relation  $R$  is only reflexive.  
(b) IF the relation  $R = \{(1, 2), (2, 1), (1, 3), (3, 1)\}$  defined on the set  $A = \{1, 2, 3\}$ , then show that the relation  $R$  is only symmetric.  
(c) IF the relation  $R$  on the set  $A = \{1, 2, 3, \dots, 13, 14\}$  defined as  $R = \{(x, y) : 3x - y = 0\}$ , then show that  $R$  is not reflexive, symmetric and transitive.
2. Consider the mapping  $f : A \rightarrow B$  is defined by  $f(x) = \frac{x-1}{x-2}$  such that  $f$  is a bijection.  
Based on the above information, solve the following questions.  
(a) Domain of  $f$   
(i)  $R - \{2\}$  (ii)  $R$  (iii)  $R - \{1, 2\}$  (iv)  $R - \{0\}$   
(b) Range of  $f$  is  
(i)  $R$  (ii)  $R - \{1\}$  (iii)  $R - \{0\}$  (iv)  $R - \{1, 2\}$   
(c) A function  $f(x)$  is said to be one – one iff  
(i)  $f(x_1) = f(x_2) \implies x_1 = x_2$  (ii)  $f(-x_1) = f(x_2) \implies -x_1 = x_2$  (iii)  $f(x_1) = f(x_2) \implies x_1 = x_2$  (iv) None
3. IF  $f$  is an invertible function, defined as  $f(x) = \frac{3x-4}{5}$ , then write  $f^{-1}(x)$

## SUBJECT- PHE

1. Practical Record File

## SUBJECT- COMPUTER SCIENCE

1. How is Python used in real-world applications like web development, data science, or automation?
2. What are Python libraries, and how do they make programming easier?
3. How does Python help in data analysis and visualization?

4. Why is Python a popular language for Artificial Intelligence (AI) and Machine Learning (ML)?
5. What are some current research areas where Python is heavily used, and why is it preferred in those fields?