

**HOLIDAY HOMEWORK 2019****Class: XI B**

This year, your holiday homework is a fun mix of all the aspects of learning. It has been designed to ensure that you enjoy and learn at the same time. Special attention has been taken to ensure that you use your creativity, your innovative ideas and your imagination to shape your holiday homework into fantastic 'creations'. So enjoy your holidays spending quality times with your near and dear ones and devote sometimes to learn new things.

**General Instructions:**

- Holiday Homework of all subjects to be done in **separate Stick Files** (only).
- The areas to be covered are suggested below. You can of course use your creativity and innovation for new ideas too!
- Credit will be awarded to original photographs/ drawings, illustrations and creative use of materials.
- Holiday Homework needs to be submitted on 10<sup>th</sup> July 2019.
- Holiday Homework needs to be developed and presented in this order:
  - Cover page showing title, student information, school and academic year and parent's signature.
  - List of contents with page numbers.
  - The last page should have Bibliography/ Sources of information from where you have collected your information.

**Subject: English**

Read the book '**Wings of Fire: An Autobiography of Abdul Kalam**' and write a book review in about 250-300 words covering the following aspects: About the author, Synopsis, and about the book. Find out at least 10 famous quotes used by Dr. Kalam in this book and write down those quotes.

**Subject: Physics**

To make a pendulum system and study its time period of oscillation with: Length of the pendulum, record the observations and plot L vs T and L vs T<sup>2</sup> graph for the same.

**Subject: Chemistry**

1. Complete the lab manual practical work.
2. Find out the various radio waves (minimum five) at which transmission is being done in India. Convert them into wavelength.
3. Give at least two uses of Infra-Red Waves and Ultra Violet waves.
4. Give a detailed description of Millikan's oil drop experiment.

**Subject: Biology**

- I) Make a Project on any one of the following topics in a stick file. Put diagrams and photographs wherever necessary. Make a proper Index, Acknowledgment and References taken.
- a) Requirement of Mineral Nutrition in plants. Explain about deficiency symptoms of important minerals in plants.
  - b) Endocrine system of Human beings.
- II) Complete your Biology Practical Note book along with diagrams.

**Chapter 1**

**Sets**

1. Write the following sets in set builder form

I)  $\{1/4, 2/5, 3/6, 4/7, 5/8\}$

II)  $\{ \dots, -5, 0, 5, 10, \dots \}$

III)  $\{-4, 4\}$

2. Let A, B and C are three sets then prove the following:

i)  $A - (A \cap B) = A - B$

ii)  $(A - B) \cup (B - A) = (A \cup B) - (A \cap B)$

iii)  $A - (B \cap C) = (A - B) \cup (A - C)$

iv)  $A \cap (B - C) = (A \cap B) - (A \cap C)$

3. Draw Venn diagrams for the following sets:

i)  $(A - B)' \cap A$

ii)  $(A \cap B \cap C)'$

iii)  $(A \cap B)'$  if  $A \subset B$

iv)  $(A - B) \cap (A \cup B)$

v)  $(A \cap B)'$  if A and B are disjoint sets

Q4. In a survey of 100 students, the number of students studying the various languages were found to be English only 18, English but not Hindi 23, English and Sanskrit 8, English 26, Sanskrit 48, Sanskrit and Hindi 8, Number of no language 24. Find

i) How many students were studying Hindi?

ii) How many students were studying English and Hindi [Ans:18,3]

Q5. In a survey of 25 students it was found that 15 had taken Math, 12 had taken Physics and 11 had taken Chemistry, 5 had taken Math and chemistry, 9 had taken Math and Physics, 4 had taken Physics and Chemistry and 3 had taken all the three subjects. Find the number of students that had taken:

i) Only Chemistry

ii) Only Math

iii) Only Physics

iv) Physics and Chemistry but not Math

v) Math and Physics but not Chemistry

vi) Only one of the subject

vii) At least one of the subjects

viii) None of the subjects [Ans:5, 4, 2, 1, 6, 11, 23, 2]

6. Of the members of three athletic team in a certain school, 21 are in the Basketball Team, 26 in the Hockey team and 29 in the Football team. 14 play hockey and basketball, 15 play hockey and football, 12 play football and basketball and 8 play all the three. How many members are there in all? [Ans:43]

7. In a survey of 100 persons it was found that 28 read magazine A, 30 read magazine B, 42 read magazine C, 8 read magazines A & B, 10 read magazine B&C and 3 read all the three. Find:

i) How many read none of the magazines?

ii) How many read magazine C only?

iii) How many read magazine A only?

iv) How many read magazine B & C but not A ? [Ans:18,32,13,0]

8. Let A and B be two finite sets such that  $n(A) = m$  and  $n(B) = n$ . If the ratio of number of elements of power sets of A and B is 64 and  $n(A) + n(B) = 32$ . Find the value of m and n.  
[Ans:19, 23]

9. In a survey of 400 students of a school, 100 were listed as smokers and 150 as chewers of Gum, 75 were listed as both smokers and gum chewers. Find out how many students are neither smokers nor gum chewers.  
[Ans:225]

10. In a university out of 100 teachers, 15 like reading newspapers only, 12 like learning computers only and 8 like watching movies only on TV in the spare time. 40 like reading newspapers and watching movies, 20 like learning computer and watching movies, 10 like reading newspaper and learning computer, 65 like watching movies. Draw a Venn diagram and show the various portions and hence evaluate the numbers of teachers who:

i) Like reading newspapers

ii) Like learning computers

iii) Did not like to do any of the things mentioned above.

[62, 39, 1]

## Chapter 2 Linear Inequalities

Q1. Ravi obtained 70 and 75 marks in first two unit test. Find the minimum marks he should get in the third test to have an average of at least 60 marks.

Q2. To receive Grade 'A' in a course, one must obtain an average of 90 marks or more in five examinations (each of 100 marks). If Sunita's marks in first four examinations are 87, 92, 94 and 95, find minimum marks that Sunita must obtain in fifth examination to get grade 'A' in the course.

Q3. Find all pairs of consecutive odd positive integers both of which are smaller than 10 such that their sum is more than 11.

Q4. Find all pairs of consecutive even positive integers, both of which are larger than 5 such that their sum is less than 23.

Q5. The longest side of a triangle is 3 times the shortest side and the third side is 2 cm shorter than the longest side. If the perimeter of the triangle is at least 61 cm, find the minimum length of the shortest side.

Q6. A man wants to cut three lengths from a single piece of board of length 91cm. The second length is to be 3cm longer than the shortest and the third length is to be twice as long as the shortest. What are the possible lengths of the shortest board if the third piece is to be at least 5cm longer than the second? [Hint: If x is the length of the shortest board, then x, (x + 3) and 2x are the lengths of the second and third piece, respectively. Thus,  $x + (x + 3) + 2x \leq 91$  and  $2x \geq (x + 3) + 5$ ].

Q6. A solution of 8% boric acid is to be diluted by adding a 2% boric acid solution to it. The resulting mixture is to be more than 4% but less than 6% boric acid. If we have 640 litres of the 8% solution, how many litres of the 2% solution will have to be added?

Q7. How many litres of water will have to be added to 1125 litres of the 45% solution of acid so that the resulting mixture will contain more than 25% but less than 30% acid content?

Q8. A manufacturer has 600 litres of a 12% solution of acid. How many litres of a 30% acid solution must be added to it so that acid content in the resulting mixture will be more than 15% but less than 18%?

## **Subject: Computer Science** **ONLINE ACCESS AND COMPUTER SECURITY**

**Prepare PPT about 20-25 slides on the following issues:**

- (1) Cyber safety and why is it important?
- (2) Confidentiality of information and How do you ensure it?
- (3) What is cybercrime? How can you report it?

**Subject: Psychology**

**RESEARCH WORK**

- 1) Prepare a survey questionnaire (20 questions at least) for after school activities of children from classes V - VIII to IX - XII.
- 2) Formulate your survey in such a manner that you get information about the time devoted by them in various activities, such as studying, playing, television viewing, hobbies, etc.
- 3) Take at least 10 students (05 in each) belonging to similar socio- economic status and school going.
- 4) Prepare a report regarding: do you find any difference in both the categories? ; What conclusions do you draw and what suggestions would you offer?
- 5) **Suggested format for preparing report:**
  - a) Decide upon your questions and survey questionnaire format.
  - b) Frame your topic for survey
  - c) Decide the population sample and conduct survey(data collection)
  - d) Analysis of result
  - e) Conclusion
  - f) Revising the conclusion

**Subject: Painting**

Prepare one geometrical design in half imperial sized sheet and color it in assorted color scheme.