



**St. XAVIER'S HIGH SCHOOL**

EDUCATION FOR ALL

**BANKURA, WB**  
**Affiliation No.: 2430130**

**Affiliated to CBSE (New Delhi) 10+2 level**  
**School Code: 15720**

**SUMMER VACATION ASSIGNMENT (2026-2027)**

**CLASS-XI-SCIENCE**

**SUBJECT: ENGLISH**

**A. Prepare a Project of the same topic according to the assigned Roll no. (Part of your ASL internal exam)**

**Information regarding the project:**

1. The project should be in handwritten form in practical sheets. No Printed Project is accepted.
2. Project must contain pictures (Mandatory).
3. The project must contain the following points:
  - a) Cover Page (School name, school logo, name of topic, students name, class, subject, session, roll number, guided by in printed form only.
  - b) Certificate
  - c) Index
  - d) Introduction to the topic.
  - e) Main content (Meaning, Definition if any, Writer's life, Importance of the text, Work's Influence on us, role in our life, etc.)
  - f) Conclusion.
  - g) Bibliography/References
4. Submit the project report in a lace file with appropriate cover.

**1. Emotional and Physical Displacement in The Portrait of a Lady by Khuswant Singh. Roll 1-19**

**2. Prepare a poster in about 50 words on the topic of Water Conservation. Roll 1-19**

**3. Write a speech in 120-150 words on the topic ' Discipline shapes the future of a student '. Roll 1-19**

**4. You are Puneet Sharma, Resident of Sukhdev Vihar, Delhi. You want to sell your flat in Dwarka. Write an advertisement in not more than 50 words, to be published under the classified columns of a national daily. Roll 20-**

**5. Memory and Grief in Shirley Toulson's A Photograph: A Reflection on Enduring Loss through Imagery. Roll 20-**

**SUBJECT: PHYSICS**

**INSTRUCTIONS:**

1. *There will be two practical notebook- one for ACTIVITY, another for EXPERIMENT.*
2. *Activities should be written in activity notebook and Experiments should be written in experiment notebook.*
3. *Sample writings will be sent in class group shortly.*
4. *Observation table should leave vacant. Values should be written after doing the practical.*

**A. Write the following activities in activity notebook:**

**Activity No.1-** To make a paper scale of given least count, e.g., 0.2cm, 0.5 cm.

**Activity no.2-** To determine mass of a given body using a metre scale by principle of moments.

**Activity no.3-** To measure the force of limiting friction for rolling of a roller in horizontal plane.

**B. Write the following experiments in experiment notebook:**

**Experiment No.1-** (a) To measure diameter of a small spherical body and (b) to measure internal diameter and depth of a given beaker using Vernier Callipers and hence find its volume.

**Experiment No. 2-** To measure diameter of a given wire and thickness of a given sheet using screw gauge.

**Experiment No. 3-** To determine radius of curvature of a given spherical surface by a spherometer.

### SUBJECT: MATHEMATICS

(To be done in classwork note book)

**Q1.** Given  $L = \{1, 2, 3, 4\}$ ,  $M = \{3, 4, 5, 6\}$  and  $N = \{1, 3, 5\}$  Verify that  $L - (M \cup N) = (L - M) \cap (L - N)$

**Q2.** Two finite sets have  $m$  and  $n$  elements. The number of subsets of the first set is 112 more than that of the second set. Find values of  $m$  and  $n$ .

**Q3.** If  $X = \{a, b, c, d\}$  and  $Y = \{f, b, d, g\}$ , find (i)  $X - Y$  (ii)  $X \cup Y$

**Q4.** Let  $A = \{-1, 2, 3\}$  and  $B = \{1, 3\}$ . Determine (i)  $A \times B$  (ii)  $B \times A$

**Q5.** Find the range of the following function given by  $\square(\square) =$

$|\square - 4|$

$\square - 4$

**Q6.** Let  $B = \{x: x = 2n, n \in \mathbb{N}\}$  and  $C = \{x: x \text{ is a prime natural number}\}$ .

Write  $(B \cap D)$ , express it in set builder form.

**Q7.** Let  $n(A) = p$ , and  $n(B) = q$ . Then what is the total number of non-empty relations that can be defined from  $A$  to  $B$ ?

**Q8.** Draw graphs of the following functions:

(i) Identity function (ii) Constant function (iii) The Modulus function (iv) Signum function

**Q9.** For all sets  $A, B$  and  $C$ , Is  $(A \cup B) \cap C = A \cup (B \cap C)$ ? Justify your statement.

Case study:

**Q10.** A class teacher of class XI writes four sets  $U, A, B$  and  $C$  are such that  $U = \{1, 2, 3, 4, \dots, 11\}$ ,

$A = \{1, 3, 5, 7, 9\}$ ,  $B = \{2, 4, 6, 8\}$ ,  $C = \{2, 3, 5, 7, 11\}$  where  $U$  is the universal set.

Based on the above information, answer the following questions:

**(a)** Find  $A \cup B$ .

**(b)** Write the power set  $P(B)$ .

**(c)** Verify that:  $(\square \cap \square)' = \square' \cup \square'$

**(d)** Verify that:  $(\square \cup \square) \cap \square = (\square \cap \square) \cup (\square \cap \square)$

**LONG ANSWER QUESTIONS (5 Markers):**

32. Let A and B be any two sets. Prove that  $(A - B) \cup B = A$  if and only if  $B \subset A$ .

33. For any two sets A and B prove by using properties of sets that:

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

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

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

34. If A, B and C are any three sets, then using properties of sets prove that:

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

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

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

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

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

(vi) Draw the graph of the function  $f: R \rightarrow R$  defined by  $f(x) = 3 - |x|$ , where  $x \in R$ .

(vii) Find domain and range of the function  $f(x) = \frac{x}{1+x^2}$

(viii) If  $A = \{1, 2, 3\}$ ,  $B = \{7\}$ ,  $C = \{11\}$ , then verify that

(i)  $A \times (B \cap C) = (A \times B) \cap (A \times C)$

(ii)  $A \times (B \cup C) = (A \times B) \cup (A \times C)$

(ix) Redefine the function:  $f(x) = |x - 1| - |x + 6|$ . Write its domain also.

(x) The function f is defined by:

$$f(x) = \begin{cases} 1 - x, & x < 0 \\ x + 1, & x \geq 0 \end{cases}$$

Draw the graph of f(x). Also write its domain and range

35. If  $\cos A = \frac{-12}{13}$  and  $\cot B = \frac{24}{7}$ , where A lies in second quadrant and B in third quadrant, find the value of  $\sin(A - B)$ .

36. If  $A + B = 45^\circ$ , then prove that  $(\cot A - 1)(\cot B - 1) = 2$ .

**SUBJECT: CHEMISTRY**

**INSTRUCTIONS:**

1. There will be one practical notebook- for EXPERIMENT.
2. Experiments should be written in experiment notebook.
3. Sample writings will be sent in class group shortly.
4. Observation table should leave vacant. Values should be written after doing the practical.

### Investigatory Project for Chemistry (043).

**Following points should be followed properly:**

1. The project should be in A4 white sheet in Handwritten form. No printed projects are accepted.
2. The project must contain:
  - a) Cover page (Printed) with school name, school logo, Topic name, any cover picture related to provided topics, submitted by(Student name), Class, Board roll no.(Leave as blank space), session, subject ( Chemistry 043), Guided by (Subject Teacher name).
  - b) Certificate (Printed, Format will be provided)
  - c) Acknowledgement (Printed, Format will be Provided)
  - d) Index (Handwritten)
  - e) Content (Handwritten)
  - f) Conclusion (Handwritten)
  - g) Bibliography (Handwritten)
3. The content must contain Introduction, Topic description, Advantages, Disadvantage, application etc.
4. The project must contain Picture representation and statistical representation (if any).
5. Topics for the investigatory project will be provided shortly in the class group.
6. Compile all pages in a channel file.

### **SUBJECT: BIOLOGY**

Write the following practicals in the practical notebook:

Experiment No.1.To study the principle and working of compound microscope.

Experiment No. 2. To study the given permanent slide and identify with reasons –

- a) Bacteria
- b) Oscillatoria
- c) Spirogyra
- d) Rhizopus
- e) Yeast

Experiment No. 3. To study the given model/ specimen and identify the organism-

- a)Mushroom
- b) Liverwort
- c) Moss
- d) Fern
- e) Pine

Prepare a Project File and include the following properly:

1. The project should be in A4 white sheet in Handwritten form. No printed projects are accepted.
2. The project must contain:
  - a) Cover page (Printed) with school name, school logo, Topic name, any cover picture related to provided topics, submitted by(Student name), Class, roll no, session, subject -Biology(044), Guided by (Subject Teacher name).
  - b) Certificate (Printed)
  - c) Acknowledgement (Printed)
  - d) Index (Handwritten)
  - e) Content (Handwritten)
  - f) Conclusion (Handwritten)
  - g) Bibliography (Handwritten)

3. The content must contain Introduction, Topic description, Advantages, Disadvantage, application etc.

4. Project must contain Picture representation and statistical representation (if any).

5. Compile all pages in a channel file.

NOTE:- STUDENTS HAVE TO WRITE PROJECT ON ANY ONE OF THE GIVEN TOPICS AS PER THEIR CHOICE:

a) Classification of Kingdom Fungi

b) Lichen

c) Kingdom Monera

d) Kingdom Protista

e) Viruses

### **SUBJECT: COMPUTER SCIENCE**

Q1) Write a python code to accept two integers and print their sum.

Q2) Write a program that accepts the radius of a circle and prints its area.

Q3) Write a program that accepts base and height and calculate the area of a triangle.

Q4) Write a program that inputs a student's marks in three subjects (out of 100) and prints the percentage marks.

Q5) Write a program to compute the area of square.

Q6) Write a program to read two numbers and print their quotient and remainder.

Q7) Write a program to calculate simple interest.

Q8) Write a program that accepts weight in Kg and height in meters and calculate the BMI.

**\*\*\* All the above python code must be written (Hand Written) in A4 size page with proper front page and submit in a channel file.**

### **SUBJECT: DANCE (KATHAK)**

1) How many types of Indian classical dance and write briefly about each.

2) Write theka of Dadra, Kaharba and Rupaka Taal

**Instruction to do the assignment:**

**1. The cover page should be well decorated including school name, logo and topic name submitted by and submitted to.**

**2. Printed photos should be pasted according to the topic.**

**3. All the pages should be handwritten and compiled in a channel file.**

### **SUBJECT: PHYSICAL EDUCATION**

1. I.O.A Related any one game( Rules and regulations)

2. Types of Disability, their causes and nature.