2021

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STANDARD X

Updated as per Portion Omitted from the Syllabus for the Year 2020-2021

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STD. X

| Optional subjects | ➤ | Hindi (Lokvani) 40 marks | Sanskrit (Composite) 40 marks | Sanskrit (Entire) 80 marks |
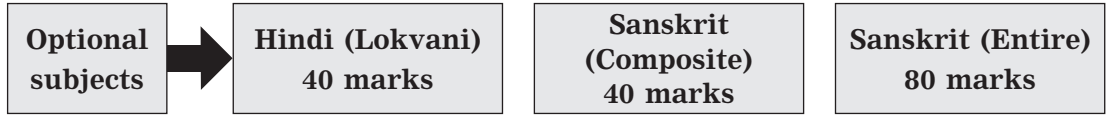
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PREFACE

The world is going through an unforeseen situation of Covid-19 that has never been experienced before. Even in such a situation, it is a matter of pride that the principals, teachers, students and their parents from across the state of Maharashtra are giving top priority to the Board exams of Std. X by continuing with their efforts in teaching and learning with the help of technology. As the leading educational publisher, we too, are committed to contribute in this noble deed of imparting knowledge. We are hence delighted to publish the latest **'Navneet Practice Papers and Activity Sheets (All subjects) : Std. X'** book for the Board examination 2021 as per the updated format.

Given the limited timespan of teaching and learning due to the Covid-19 situation, the Board has omitted some portions of the syllabus from the evaluation i.e. examination in each subject for the academic year 2020-21. An important feature of the book **'Navneet Practice Papers and Activity Sheets'** is that it has been prepared precisely by keeping in mind this omitted portion from the syllabus.

In this book, the detailed information about the above mentioned omitted portions has been given for easy reference in a box labelled as **'Most important'** at the beginning of each subject. This will enable the students to know exactly which portion they need to study for the examination.

The book includes updated format of the Board's Question papers/Activity sheets with explanation and guidance. This will ensure that the students will have no doubts about the format of the question papers/activity sheets.

Board's March 2020 Question papers/Activity sheets have been provided along with full solutions and marking scheme for complete guidance. In addition to providing answers to the Question papers/Activity sheets, the questions and answers from the omitted syllabus have also been highlighted with special notes, which will help the students know that the questions on these omitted portion will not appear in the 2021 examination. At the same time the students will understand what questions could be asked in the related question type and how to write their answers. The solutions to the Board's Question paper/Activity sheets have been purposely given on the specimen answer sheets to give the students complete understanding of how to write the answers in an ideal manner.

The **'Navneet Practice Papers and Activity Sheets'** book consists of 5 Question papers/ Activity sheets of each subject for practice, too. The practice Question papers/Activity sheets have been prepared meticulously by the expert and experienced team of authors of Navneet keeping the omitted portion in mind. In doing so, we have made sure that all the possible question types in the textbook and 'updated format' are incorporated in the book, for activities or questions can be asked in many different ways for a particular question in the Activity sheets. The book also provides answers to the questions in Practice papers of Mathematics (Part-I) & (Part-II) for cross-checking.

In a nutshell, the **'Navneet Practice Papers and Activity Sheets'** book will be extremely beneficial for the students to prepare and practise thoroughly for their Board examinations. We are confident that with this practice, the students will get brilliant success in their examination.

Navneet wishes all the students of Std. X a spectacular success ahead!

– The Publishers

CONTENTS

Section 8 : Mathematics (Part – I)

<u>Most Important</u>

Note : Some portions from the syllabus of Mathematics X (Part–I) have been omitted for the evaluation in examination to be held for the academic year 2020–21.

The portions omitted from the syllabus are :

Chapter 1 : (Linear Equations in Two Variables)

Page 2	: Complete from 4th row in both the columns.
Page 3	: Rows 1 to 17 in Ex. 2.
Page 4	: Practice Set 1.1 : Q. 1.
Page 5	: Practice Set 1.1 : 1 to 6 subquestions of Q. 2.
Page 16	: Activity rows 15 to 20.
Pages 17 and 18	: Complete pages.
Page 19	: Activity and all examples from Practice Set 1.4.
Page 28	: Problem Set 1 : All subquestions of Q. 6.

Chapter 2 : (Quadratic Equations)

Page 37	: Complete page from row 7 onwards.
Page 38	: Complete page.
Page 39	: Rows 1 to 9 of Ex. 2. All examples from Practice Set 2.3.
Page 42	: Complete page. Page 43 : Activity based on completing square method.
Pages 46 and 47	: Complete pages.
Page 49	: Let's Remember (1). Subquestion (3) of Q. 1. in Practice Set 2.5.
Page 50	: Qs. 5 and 6 from Practice Set 2.5.
Page 53	: Subquestion 6 in Q. 1. in Problem Set 2.
Page 54	: Q. 10. in Problem Set 2.

Chapter 3 : (Arithmetic progression)

No portion has been omitted.

Chapter 4 : (Financial Planning)

Entire chapter is omitted.

Chapter 5 : (Probability)

No portion has been omitted.

Chapter 6 : (Statistics)

Entire chapter is omitted.

These Practice Papers have been prepared keeping in mind the portion omitted from the syllabus.

Q. 1. (A) **For every subquestion 4 alternative answers are given. Choose the correct answer and write the letter of the alphabet of it :** **4**

Remember :
- In this question, 4 multiple choice subquestions of 1 mark each will be asked. Four alternatives, for each subquestion, will be given. Choose and write the letter of the correct alternative (with brackets) against the question number.
- All the subquestions are compulsory.
- Method of solution is not expected.

Q. 1. (B) **Solve the following subquestions :** **4**

Remember :
- In this question, 4 subquestions of 1 mark each will be asked.
- All subquestions are compulsory.

Q. 2. (A) **Complete and write *any two* activities from the following :** **4**

Remember :
- In this question, 3 activities of 2 marks each will be given.
- Students should attempt any two of them.

Q. 2. (B) **Solve *any four* subquestions from the following :** **8**

Remember :
- In this question, 5 subquestions of 2 marks each will be asked.
- Students should solve any four of them.
- Answers with solution are expected.

Q. 3. (A) **Complete and write *any one* activity from the following :** **3**

Remember :
- In this question, 2 activities of 3 marks each will be given.
- Students should attempt any one of them.

Q. 3. (B) **Attempt *any two* subquestions from the following :** **6**

Remember :
- In this question, 4 subquestions of 3 marks each will be asked.
- Students should solve any two of them.
- Answers with solution are expected.

Q. 4. Attempt *any two* subquestions from the following :   8

> **Remember :**
> - In this question, 3 subquestions of 4 marks each will be asked.
> - Students should solve any two of them.
> - These questions may be challenging.
> - These questions will not be from the textbook, but based on the syllabus.
> - Answers with solution are expected.

Q. 5. Attempt *any one* subquestion from the following :   3

> **Remember :**
> - In this question, 2 subquestions of 3 marks each will be asked.
> - Students should solve any one of them.
> - These questions may be open ended.
> - These questions will not be from the textbook, but based on the syllabus.
> - Answers with solution are expected.

QUESTION PAPERS FOR PRACTICE

MATHEMATICS (PART–I)
QUESTION PAPER 1

Time : 2 Hours]   **[Total Marks : 40**

Note : *(i)* ***All*** *questions are compulsory.*

  (ii) *Use of calculator is **not** allowed.*

  (iii) *The numbers to the right of the questions indicate full marks.*

  (iv) *In case of MCQ's [Q. No. **1(A)**], only the first attempt will be evaluated and will be given credit.*

  (v) *For every MCQ, the correct alternative (A), (B), (C) or (D) of answers with subquestion number is to be written as an answer.*

Q. 1. (A) For every subquestion 4 alternative answers are given. Choose the correct answer and write the letter of the alphabet of it :   **4**

  (i) To draw the graph of $4x + 5y = 19$, find y when $x = 1$.

    (A) 4   (B) 3   (C) 2   (D) -3

  (ii) Which of the following is the value of the discriminant for $\sqrt{2}x^2 - 5x + \sqrt{2} = 0$?

    (A) -5 (B) 17   (C) $\sqrt{2}$ (D) $2\sqrt{2} - 5$

  (iii) What is the sum of the first 20 terms of an A.P., if $a = 4$ and $t_{20} = 36$?

    (A) 40   (B) 200   (C) 400   (D) 800

  (iv) Which number cannot represent a probability?

    (A) 15%   (B) $\frac{2}{3}$ (C) 0.7   (D) 1.5

(B) Solve the following subquestions :   **4**

  (i) Write the equation $3x = 4y - 12$ in the general form.

  (ii) What are the roots of the quadratic equation $x^2 = 9$?

  (iii) Write the 100th term of the A.P. 2, 2, 2, ...

  (iv) If $P(A) = \frac{3}{4}$, $n(A) = 39$, find $n(S)$.

Q. 2. (A) Complete and write *any two* activities from the following : 4

(i) Complete the following activity to draw the graph of $2x - y = 4$.

x		3
y	6	
(x, y)		

(ii) Complete the following activity to find three-digit natural numbers divisible by 5.

Three-digit natural numbers divisible by 5 are 100, 105, 110, ..., 995.

Here, $a = 100$, $d = \boxed{}$, $t_n = 995$

$t_n = \boxed{}$ ... (Formula)

$\therefore 995 = 100 + (n - 1) \times 5$

$\therefore 995 = \boxed{}$

$\therefore n = \boxed{}$.

(iii) A die is rolled. A is an event of getting an even number on its upper face.

$S = \boxed{}$

$\therefore n(S) = \boxed{}$

A is the event of getting an even number.

$\therefore A = \boxed{}$

$\therefore n(A) = \boxed{}$

(B) Solve *any four* subquestions from the following : 8

(i) Determine the nature of the roots for the quadratic equation
$\sqrt{3}x^2 + \sqrt{2}x - 2\sqrt{3} = 0$.

(ii) A card is drawn from a well-shuffled pack of 52 playing cards. Find the probability of event A that the card drawn is a spade.

(iii) Solve : $2x - 3y = 9$; $2x + y = 13$.

(iv) How many natural numbers from 10 to 250 are divisible by 4?

(v) Find the value of k, if the roots of the quadratic equation $3x^2 - kx + 48 = 0$ are real and equal.

Q. 3. (A) Complete and write *any one* activity from the following : 3

(i) The sum of the first 41 terms of an A.P. is 5125. Complete the following activity to find the 21st term.

$S_n = S_{41} = 5125$,

Let the first term of the A.P. be a and the common difference d.

$$S_n = \frac{n}{2}\left[2a + \boxed{}\right] \qquad \text{... (Formula)}$$

$$\therefore S_{41} = \frac{41}{2}\left[2a + \boxed{}\right] \qquad \text{... (Substituting the values)}$$

$$\therefore 5125 = \frac{41}{2}(2a + 40d)$$

$$\therefore 5125 = 41 \times \boxed{}$$

$$\therefore a + 20d = \boxed{-}$$

$$\therefore a + 20\,d = 125 \qquad \text{... (1)}$$

Now, 21st term is t_{21}.

$$t_n = \boxed{} \qquad \text{... (Formula)}$$

$$\therefore t_{21} = a + (21 - 1)\,d$$

$$\therefore t_{21} = a + 20\,d$$

$$\therefore t_{21} = \boxed{} \qquad \text{... [From (1)]}$$

(ii) Complete the following activity to solve the simultaneous equations $3x - 2y = 3$ and $2x + y = 16$ by Cramer's rule.

$$D = \begin{vmatrix} 3 & -2 \\ 2 & 1 \end{vmatrix} = \boxed{}, \ D_x = \begin{vmatrix} 3 & -2 \\ 16 & 1 \end{vmatrix} = 35, \ D_y = \begin{vmatrix} & \\ & \end{vmatrix} = \boxed{},$$

$$x = \frac{D_x}{D} = \boxed{}, \ y = \boxed{-} = \boxed{}.$$

(B) Attempt *any two* subquestions from the following :   6

(i) In a factory, the ratio of salary of skilled and unskilled workers is 5 : 3. Total salary of one day of both of them is ₹ 720. Find the daily wages of skilled and unskilled workers.

(ii) If the speed of a car is decreased by 8 km/h, it takes 1 hour more to cover a distance of 240 km. Find the original speed of the car.

(iii) A card is drawn from a well-shuffled pack of 52 playing cards. Find the probability that the card drawn is (1) a diamond card (2) a face card (3) a black card.

(iv) The sum of three consecutive terms of an A.P. is 36 and their product is 1140. Find the terms. (Consider the terms to be in descending order.)

Q. 4. Attempt *any two* subquestions from the following :   **8**

(i) A cottage industry produces a certain number of potteries in a day. It was found that the cost of production of each article was ₹ 5 more than twice the number of potteries produced in a day. If the cost of production on that day was ₹ 168, find the number of potteries produced.

(ii) How many terms of the A.P. 16, 14, 12, ... are needed to give the sum 60 ? Explain why do we get two answers.

(iii) Draw the graph representing the equations $x - y = 1$ and $2x + 3y = 12$ on the same graph paper. Find the area of the triangles formed by these lines, the X-axis and the Y-axis.

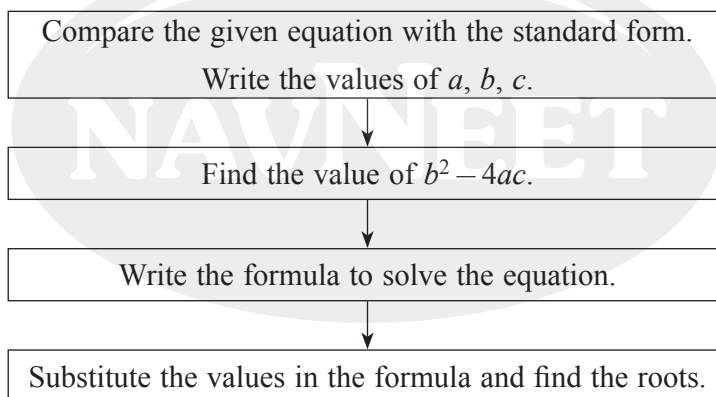**Q. 5. Attempt *any one* subquestion from the following :**   **3**

(i) Construct a word problem on simultaneous linear equations in two variables (on age, rupees, metres, speed, etc.), so that the value of one variable will be 18.

<div align="right">(OEQ)</div>

(ii) With the help of the flowchart given below, solve the equation $x^2 + 2\sqrt{2}x - 6 = 0$ using the formula method :

Solution :

```
┌─────────────────────────────────────────────────┐
│  Compare the given equation with the standard form. │
│         Write the values of a, b, c.              │
└─────────────────────────────────────────────────┘
                        │
                        ▼
┌─────────────────────────────────────────────────┐
│           Find the value of b² − 4ac.             │
└─────────────────────────────────────────────────┘
                        │
                        ▼
┌─────────────────────────────────────────────────┐
│      Write the formula to solve the equation.     │
└─────────────────────────────────────────────────┘
                        │
                        ▼
┌─────────────────────────────────────────────────┐
│  Substitute the values in the formula and find the roots. │
└─────────────────────────────────────────────────┘
```

Question Paper 1 (Page 424)

Q. 1. (A) (i) (B) (ii) (B) (iii) (C) (iv) (D).

Q. 1. (B) (i) $3x - 4y + 12 = 0$ (ii) $3, -3$ are the roots

(iii) 100th term is 2 (iv) $n(S) = 52$.

Q. 2. (A) (i)

x	5	3
y	6	2
(x, y)	(5, 6)	(3, 2)

(ii) $\boxed{5}$, $\boxed{a + (n - 1)\, d}$, $\boxed{95 + 5n}$, $\boxed{180}$

(iii) $\boxed{\{1, 2, 3, 4, 5, 6\}}$, $\boxed{6}$, $\boxed{\{2, 4, 6\}}$, $\boxed{3}$.

Q. 2. (B) (i) Real and unequal (ii) $\dfrac{1}{4}$ (iii) $x = 6, y = 1$ (iv) 60

(v) The value of k is 24 or -24.

Q. 3. (A) (i) $\boxed{(n - 1)d}$, $\boxed{(41 - 1)d}$, $\boxed{a + 20\, d}$, $\boxed{\dfrac{5125}{41}}$, $\boxed{a + (n - 1)\, d}$, $\boxed{125}$

(ii) $\boxed{7}$, $\boxed{\begin{matrix} 3 & 3 \\ 2 & 16 \end{matrix}}$, $\boxed{42}$, $\boxed{5}$, $\boxed{\dfrac{D_y}{D}}$, $\boxed{6}$.

Q. 3. (B) (i) Daily wages of skilled and unskilled workers are ₹ 450 and ₹ 270 respectively.

(ii) The original speed is 48 km/h (iii) (1) $\dfrac{1}{4}$ (2) $\dfrac{3}{13}$ (3) $\dfrac{1}{2}$.

(iv) The terms are 19, 12 and 5.

Q. 4. (i) 8 potteries (ii) 5 terms or 12 terms

(iii) A $(\triangle ABC) = 5$ sq units, A $(\triangle CDE) = 7.5$ sq units.

Q. 5. (ii) $\sqrt{2}, -3\sqrt{2}$ are the roots of the given quadratic equation.