SHRI JAIN PUBLIC SCHOOL, BIKANER

CLASS - X

HOLIDAY HOMEWORK 2023-24

ENGLISH

1. Using each letter given in this word – **Precautions (**Make atleast 50 words**)**
   - No proper nouns
   - No two letter words
   - Eg – Nonchalant – chant, ant, loan etc.
2. As a student researcher prepare a detailed case study on 'Operation Blue Star' OR 'Prime ministers of India showing graph' and article in 200 words
3. Creation with 'Proverb' word limit 200 words
   How to do : - Describe any 3 of the following proverb in your own words. You should also crate on inspirational story Proverbs are (a) The pen is mightier than the sword (b) No pain no gain (c) A journey of a thousand miles begin with a single step. (d) Absence makes a heart grow fond (e) Beauty lies in the eyes of beholder.
   Note : Summer vacation work must be done in English copy.

HINDI

❖ अनुच्छेद लेखन

1. मन के हारे हार है, मन के जीते जीत
2. अनुशासन का महत्त्व

❖ कहानी लेखन –

1. लालच बुरी बला
2. संगठन में शक्ति

❖ औपचारिक पत्र लेखन –

1. संपादक को पत्र
2. थानाध्यक्ष को पत्र

नोट : गृहकार्य हिंदी 'ब' की कॉपीप में किया जाए।

MATHEMATICS

Objective/Very Short Answer Type Questions [1 Mark]

1. If $p(x) = ax + b$, then zero of $p(x)$

   (a) a (b) b

   (c) $\frac{a}{b}$ (d) $\frac{b}{a}$

2. Graph of a quadratic polynomial is a

   (a) straight line (b) circle

   (c) parabola (d) ellipse

3. A quadratic polynomial whose one zero is 6 and sum of the zeroes is 0, is

   (a) $x^2 - 6x + 2$ (b) $x^2 - 36$

   (c) $x^2 - 6$ (d) $x^2 - 3$

4. A quadratic polynomial whose one zero is 5 and product of zeroes is 0, is

   (a) $x^2 - 5$ (b) $x^2 - 5x$

   (c) $5x^2 + 1$ (d) $x^2 + 5x$

5. A quadratic polynomial, the product and sum of whose zeroes are 5 and 8 respectively is

   (a) $k\,[x^2 - 8x + 5]$ (b) $k\,[x^2 + 8x + 5]$

   (c) $k\,[x^2 - 5x + 8]$ (d) $k\,[x^2 + 5x + 8]$

6. If $p(x) = g(x) \cdot q(x) + r(x)$, then degree of $p(x)$ is equal to

   (a) product of degrees of $g(x)$ and $q(x)$

   (b) product of degrees of $g(x)$ and $r(x)$

   (c) sum of degrees of $g(x)$ and $q(x)$

   (d) sum of degrees of $g(x)$ and $r(x)$

7. If $p(x)$ is a non zero polynomial and $p(k^2) = 0$, where k is a real number then what is the least degree of $p(x)$?

8. The graph of a polynomial $p(x)$ does not intersects the x-axis but intersects y-axis in one point. Find the number of zeroes of $p(x)$.

9. If α and β are the zeroes of the quadratic polynomial $f(x) = x^2 - px + q$, then find the value of $\alpha^2 + \beta^2$.

10. If α and β are the zeroes of the quadratic polynomial $f(x) = ax^2 + bx + c$, find the value of $\frac{1}{\alpha} + \frac{1}{\beta}$.

11. If α, β are the zeroes of the polynomial $p(x) = x^2 - p(x + 1) - c$ such that $(\alpha + 1)(\beta + 1) = 0$. What is the value of c ?

1. On MG road, three consecutive traffic lights change after 36, 42 and 72 seconds. If the lights are first switched on at 9.00 am, at what time will they change simultaneously?

(*a*) 9:08:04 (*b*) 9:08:24

(*c*) 9:08:44 (*d*) none of these

2. What is the smallest number which when increased by 6 becomes divisible by 36, 63 and 108?

(*a*) 750 (*b*) 752

(*c*) 754 (*d*) 756

3. When 2^{256} is divided by 17 the remainder would be

(*a*) 1 (*b*) 16

(*c*) 14 (*d*) none of these

4. If N is the sum of first 13986 prime numbers, then N is always divisible by

(*a*) 6 (*b*) 4

(*c*) 8 (*d*) none of these

5. If $(-1)^n + (-1)^{4n} = 0$, then n is

(*a*) any positive

(*b*) any negative integer

(*c*) any odd natural number

(*d*) any even natural number

6. The HCF of two numbers is 145 and their LCM is 2175. If one number is 725, find the other number.

Find HCF and LCM of following using Fundamental Theorem of Arithmetic method (Q.7 and Q.8)

7. 270, 405 and 315 **8.** 377, 435 and 667

9. Show that $3 + 5\sqrt{2}$ is an irrational number.

10. Prove that $2\sqrt{3} - 1$ is an irrational number.

11. Prove that $\frac{2\sqrt{3}}{5}$ is irrational.

12. Show that $\sqrt[3]{6}$ is an irrational number.

13. Prove that the product of two consecutive positive integers is divisible by 2.

14. Prove that if x and y are both odd positive integers, then $x^2 + y^2$ is even but not divisible by 4.

15. Two positive numbers M and N are both divisible by 3, 5, 15, 25 and 75. What is the HCF of M and N.

16. Find the number nearest to 100000 and greater than 100000 which is exactly divisible by each of 8, 15 and 21.

1. Cards bearing numbers 2, 3, 4, ..., 11 are kept in a bag. A card is drawn at random from the bag. The probability of getting a card with a prime number is **[AI 2012]**

(*a*) $\frac{1}{2}$ (*b*) $\frac{2}{5}$ (*c*) $\frac{3}{10}$ (*d*) $\frac{5}{9}$

2. There are 25 tickets bearing numbers from 1 to 25. One ticket is drawn at random. The probability that the number on it is a multiple of 5 or 6 is

(*a*) $\frac{7}{25}$ (*b*) $\frac{9}{25}$ (*c*) $\frac{11}{12}$ (*d*) $\frac{13}{25}$

3. The probability of getting a number between 1 and 100 which is divisible by 1 and itself only is

(*a*) $\frac{29}{98}$ (*b*) $\frac{1}{2}$ (*c*) $\frac{25}{98}$ (*d*) $\frac{23}{98}$

4. A single letter is selected at random from the word 'PROBABILITY'. The probability that it is a vowel is

(*a*) $\frac{3}{11}$ (*b*) $\frac{4}{11}$ (*c*) $\frac{2}{11}$ (*d*) $\frac{5}{11}$

5. Among 52 cards, there are 12 face cards. Probability that a card drawn at random is not a face card is

(*a*) $\frac{3}{13}$ (*b*) $\frac{9}{13}$ (*c*) $\frac{10}{13}$ (*d*) $\frac{3}{4}$

6. The probability expressed as a percentage of a particular occurrence can never be **[NCERT Exemplar Problem]**

(*a*) less than 100

(*b*) less than 0

(*c*) greater than 1

(*d*) anything but a whole number

7. If P(A) denotes the probability of an event A, then **[NCERT Exemplar Problem]**

(*a*) $P(A) < 0$ (*b*) $P(A) > 1$

(*c*) $0 \le P(A) \le 1$ (*d*) $-1 \le P(A) \le 1$

8. A box contains cards numbered 6 to 50. A card is drawn at random from the box. The probability that the drawn card has a number which is a perfect square, is _____. **[AI 2013]**

9. The king, queen and jack of clubs are removed from a deck of 52 playing cards and the well shuffled. One card is selected from the remaining cards. Find the probability of getting a heart.

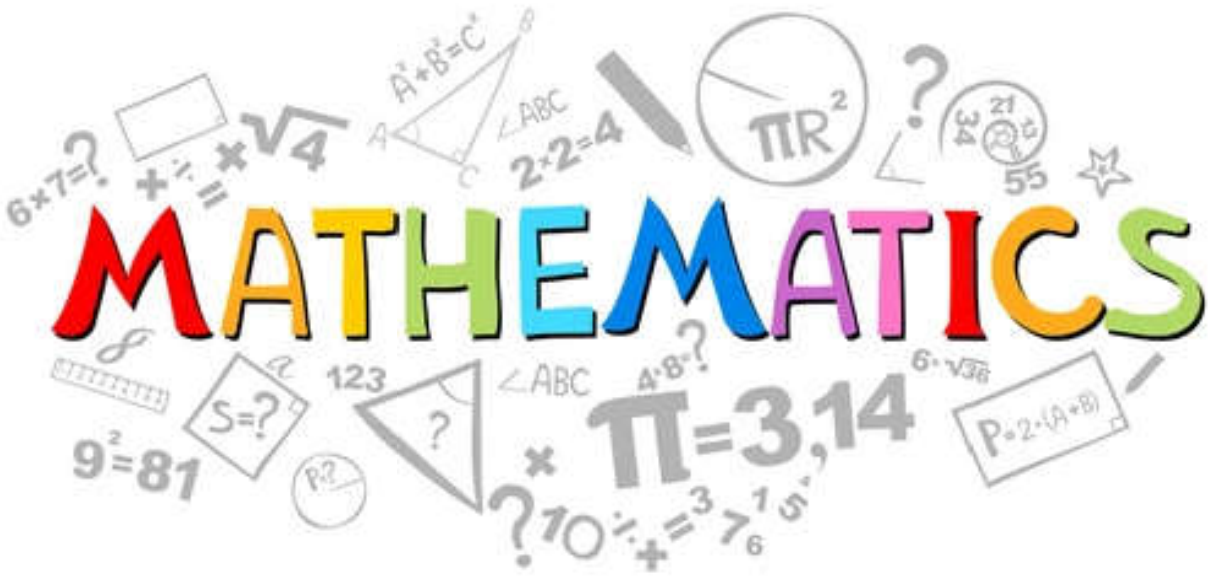
10. Two dice are thrown simultaneously. Find the probability that the sum of the two numbers appearing on the top is less than or equal to 10.

11. The king, queen and jack of diamonds are removed from a pack of 52 cards and then the pack is well-shuffled. A card is drawn from the remaining cards. Find the probability of getting a card of (*i*) diamonds, (*ii*) a jack.

12. A bag contains cards which are numbered from 2 to 90. A card is drawn at random from the bag. Find the probability that it bears

(*a*) a two digit number,

(*b*) a number which is a perfect square.



13. Card marked with numbers 1, 3, 5, ..., 101 are placed in a bag and mixed thoroughly. A card is then drawn at random from the bag. Find the probability that the number on the drawn card is (*i*) less than 19. (*ii*) a prime number less than 20. [Foreign 2012]

14. Three coins are tossed. Find the probability of

    (*i*) getting exactly one head

    (*ii*) getting at least one head and one tail.

15. A box contains cards numbered 3, 5, 7, 9, ..., 35, 37. A card is drawn at random from the box. Find the probability that the number on the drawn card is a prime number. [AI 2013]

16. If odds in favour of an event be 2 : 3, find the probability of non-occurrence of this event.

17. A box has cards numbered 114 to 199. Cards are mixed thoroughly and a card is drawn from the bag at random. Find the probability that the number on the card, drawn from the box is

    (*a*) an odd number (*b*) a perfect square number

18. If odds against an event be 3 : 4, find the probability of occurrence of this event.

19. Find the probability that the month of June has exactly 5 Tuesdays.

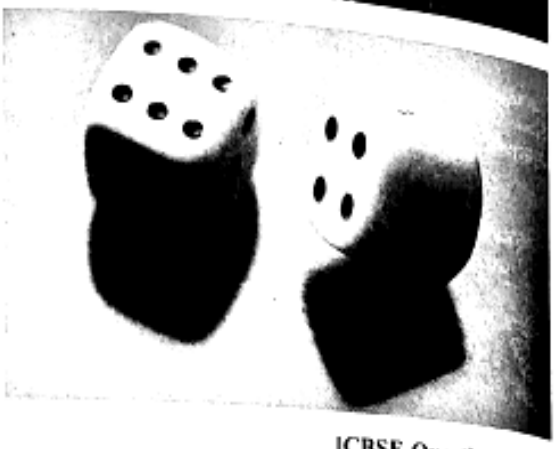
20. A bag contains 30 balls out of which x are black. If 10 more black balls are put in the box. The probability of drawing a black ball is double of what it was before. Find the value of x.

21. A bag contains 15 red balls and some green balls. If probability of drawing a green ball is three times that of a red ball, determine the number of green balls in the bag.

22. A box contains 40 balls out of which x are white. If one ball is drawn at random from the bag what is the probability it is white. If 20 more white balls are put in the box, the probability of drawing white ball is now same what it was before. Find x.

23. A box contains 50 marbles, some are red and others are green. If a marble is drawn from the box, the probability it is red is $\frac{2}{5}$. Find the number of green marbles is the box.

24. Rahul and Ravi planned to play Business (board game) in which they were supposed to use two dice.



[CBSE Question Bank]

(*a*) Ravi got first chance to roll the dice. What is the probability that he got the sum of the two numbers appearing on the top face of the dice is 8?

(*i*) $\frac{1}{26}$ (*ii*) $\frac{5}{36}$

(*iii*) $\frac{1}{18}$ (*iv*) 0

(*b*) Rahul got next chance. What is the probability that he got the sum of the two numbers appearing on the top face of the dice is 13?

(*i*) 1 (*ii*) $\frac{5}{36}$

(*iii*) $\frac{1}{18}$ (*iv*) 0

(*c*) Now it was Ravi's turn. He rolled the dice. What is the probability that he got the sum of the two numbers appearing on the top face of the dice is less than or equal to 12 ?

(*i*) 1 (*ii*) $\frac{5}{36}$

(*iii*) $\frac{1}{18}$ (*iv*) 0

(*d*) Rahul got next chance. What is the probability that he got the sum of the two numbers appearing on the top face of the dice is equal to 7 ?

(*i*) $\frac{5}{9}$ (*ii*) $\frac{5}{36}$

(*iii*) $\frac{1}{6}$ (*iv*) 0

SCIENCE

1. Solve question paper of periodic Test I in fair copy.
2. Draw any one labeled diagram on chart paper according toe the roll number written below:

S.no.	Topic	Roll no.
1	Human Digestive system (Chi Life Process)	1, 14, 27, 40
2	Respiratory system (Ch. Life process)	2, 15, 28, 41
3	Excretory system (Ch. Life process)	3, 16, 29, 42
4	Structure of Human Heart (Ch : Life process)	4, 17, 30
5	Human Brain (Ch : Control and Coordination)	5, 18, 31
6	Human Eye (Ch :Human eye and Colourful world)	6, 19, 32
7	Electrolysis of water (Ch: Che. Reactions and equation)	7, 20, 33
8	Longitudinal section of flower (structure of flower) (Ch: How do organism reproduce)	8, 21, 34
9	Reflex arc (Ch : Control and Coordination)	9, 22, 35
10	Nerve cell (Ch : Control and Coordination)	10, 23, 36
11	Germination of Pollen on stigma (Ch. How do organisms reproduce)	11, 24, 37
12	Cross-section of a leaf (Ch : Life process)	12, 25, 38
13	Structure of Stomata (open and close) (Ch. Life process)	13, 26, 39

SOCIAL SCIENCE

1. **Project File on**
   Social issues (unemployment, income inequalities, poverty, communalism and corruption)
   Images& detail of 2 pages each related to above mention topics.
2. Art Integration of Nagaland and Rajasthan (History, Natural Vegetation, culture & Tradition)
   Images & detail related to above mention topics.
3. **In a separate file**
   Importance of means of communication (Personal and Mass communication) **& Transportation**(like:- land, air, water)
   Images& detail related to above mention topics.