

KENDRIYA VIDYALAYA JAWAHARNAGAR

HOLIDAY HOMEWORK

CLASS IX (ENGLISH) :

1. Complete the exercise of chapters 1 to 50 from the book Honeydew.
2. Try to translate the following sentences into English —

CLASS IX (HINDI) :

1. क्षितिज भाग -1 के पहले दोनों पाठों के प्रश्न-उत्तर याद करो।
2. निम्नलिखित शब्दों के अर्थ, हिंदी शब्दकोश से देखकर लिखिए :-
(क) ज्ञापन (ख) क्षय (ग) श्रुत
3. संज्ञा, सर्वनाम और विशेषण की परिभाषाएं और उनके प्रकार (भेद) उदाहरणों सहित लिखिए?
4. उपसर्ग और प्रत्यय को उदाहरण के साथ परिभाषा लिखें।
5. कोरोना से बचने के बारे में अपने मित्र के साथ होने वाले संवाद को लिखिए।
6. पाँच-पाँच हिंदी समाचार पत्रों और पत्रिकाओं के नाम लिखिए ?
7. प्रेमचंद जी द्वारा लिखी गई कोई दो कहानियाँ पढ़िए।

नोट - ये गृहकार्य ए4 पेज पर लिखकर जमा करेंगे।

CLASS IX (MATHS) :

- (1) Do a mathematical project on any topic of your class
- (2) Memorize the formulae
- (3) Solve all questions given in the exercise once again by yourself.
- (4) Solve the questions given in the worksheets.

CLASS IX (PHYSICS) :

Part-A

1. Define the following terms with example- Motion, Rest, Distance, Displacement, Speed, Velocity, Uniform motion and non-uniform motion.

2. Define average speed and average velocity. A body travels from A to B at 40m/s and from B to A at 60m/s . Calculate the average speed and average velocity.

3. What do you mean by acceleration? Explain uniform and non-uniform acceleration.

4. (a) What is distance time graph? What is the nature of distance time graph for (i) An object moving under uniform motion (ii) An object moving under non-uniform motion.

(b) What is the significance of distance time graph?

5. What do you mean by velocity time graph? Draw the nature of velocity time graph for (i) Uniform motion of a body (ii)

uniformly accelerated motion of a body (iii) Non-uniformly accelerated motion of a body.

6.Explain the significance of velocity time graph for uniformly accelerated motion?

7.Derive following equations of motion by graphical method-

(i) $v = u + at$ (ii) $s = ut + \frac{1}{2}at^2$ (iii) $v^2 - u^2 = 2aS$

8. What do you mean by uniform circular motion? Define time period and frequency for a body under uniform circular motion.

9.An artificial satellite is moving in a circular orbit of radius 42250 km. Calculate its speed if it takes 24 hours to revolve around the earth.

10.An athlete completes one round of a circular track of diameter 200 m in 40 s. What will be the distance covered and the displacement at the end of 2 minutes 20 s.

11.A bus starting from rest moves with a uniform acceleration of 0.1 m s^{-2} for 2 minutes. Find (a) The speed acquired. (b) The distance travelled.

Part-B

- Intextquestions on page 100,102,103,107 and 109.*
- Questions of exercises of chapter motion.*

CLASS IX (SST) :

1. Solve exercise of civics chapter- 2 (Constitutional design.)

नागरिक शासन पाठ अध्याय 2 संविधान निर्माण के प्रश्नावली को हल कीजिए।

2. Go through textbook of Geography chapter - 2 (Physical features of India) and note down important points.

भूगोल अध्याय 2 के पाठ पुस्तक का अध्ययन कीजिए और महत्वपूर्ण बिंदुओं को लिखिए।

3. Do Map work of Geography chapter - 1 to chapter - 3 .

भूगोल के अध्याय 1 से 3 तक के मानचित्र कार्य को कीजिए।

4. Find out more about anyone of the revolutionary figures you have read About in the chapter History - 1.

इतिहास के अध्याय 1 में आपने जिन क्रांतिकारी व्यक्तियों के बारे में पढ़ा है उनमें से किसी एक के बारे में और जानकारियां इकट्ठा कीजिए।

5. Collect information about Mizoram for Ek Bharat Shreshtha Bharat competition.

एक भारत श्रेष्ठ भारत प्रतियोगिता के लिए मिजोरम के बारे में जानकारी एकत्र कीजिए।

6. Revise all the chapters you have done during online classes.

ऑनलाइन कक्षा में पढ़े गए सभी पाठों का पुनरावृत्ति कीजिए।

CLASS X (ENGLISH) :

1. To prepare 10 MCQ from first three lessons of First Flight and Footprints without Feet.
 2. Write articles on the following:
 - a) Corona Pandemic
 - b) Terrorism
 3. Write Stories related to the following:
 - a) Life during Lockdown
 - b) Online Classes
 4. Write one poem on corona virus.
 5. Learn all the questions and answers given to you during online classes.
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CLASS X (HINDI) :

1. कोरोना महामारी (COVID-19) का संक्रमण किस प्रकार फैलता है? इसके लक्षण तथा बचाव के उपायों को लिखें।
2. किसी भी उपभोक्ता उत्पाद का एक विज्ञापन तैयार करें।
3. 'नेताजी का चश्मा' पाठ के आधार पर लिखें कि देश के स्वतन्त्रता सेनानियों के प्रति आपके क्या कर्तव्य होने चाहिए?
4. रचना के आधार पर वाक्य के भेदों को लिखें और उसका मनन करें।
5. सभी 11 रस और उसके स्थायी भाव तथा सभी रसों के एक-एक उदाहरण लिखें और उन्हें याद करें।

नोट- ये सभी गृह-कार्य A4 आकार के पेज पर लिखकर एक फोल्डर फाइल में जमा करें।

CLASS X (MATHS) :

REAL NUMBERS

Chapter 1

- Q.1. Find the HCF of 128 and 240 using Euclid's division algorithm.
- Q.2. A number when divided by 61 gives 27 as quotient and 32 as remainder. Find the number.
- Q.3. Find the number by which 546 should be divided to get 7 as quotient and 7 as remainder.
- Q.N.4. Use Euclid's division Algorithm to show that the square of any positive integer is either of the form $3m$ or $3m+1$ for some integer m .
- Q.N.5. Use Euclid's division Algorithm to show that the cube of any positive integer is either of the form $9m$, $9m+1$ or $9m+8$.
- N.6. Show that only one of the numbers $(n+2)$, n or $(n+4)$ is divisible by 3.
- N.7. Show that $n^2 - n$ is divisible by 2 for every positive integer n .

- N.8. If $a = xq + ar$, $b = yq + br$, $c = zq + cr$, then show that the remainder of $\frac{a \times b \times c}{2}$ is same as the remainder of $\frac{ar \times br \times cr}{2}$. Also, find out the remainder of $\frac{3560}{8}$.
- Q.9. Is $7 \times 11 \times 13 + 11$ a composite number?
- Q.10. Write the prime factorisation of (i) 72 (ii) 5005
- Q.11. Find HCF and LCM of 45, 75 and 125
- Q.12. Given that $\text{HCF}(306, 657) = 9$, Find $\text{LCM}(306, 657)$
- Q.13. Prove that $\sqrt{2}$ is irrational.
- Q.14. Show that $5 - \sqrt{3}$ is not rational.
- Q.15. Prove that $\sqrt{3} + \sqrt{5}$ is an irrational.

POLYNOMIALS
CHAPTER 2

- Q1- Find the zeroes of the following polynomials and verify the relationship between the zeroes and the coefficients-
- (i) $x^2 - 2x - 8$ (ii) $6x^2 - 3$ (iii) $4u^2 + 8u$ (iv) $x^2 - 3$
- Q2- Find a quadratic polynomial, the sum and the product of whose zeroes are $\frac{1}{2}$ and -1 respectively.
- Q3- If α and β are the zeroes of the polynomial $p(x) = x^2 - 5x + k$ such that $\alpha - \beta = 1$. Find the value of k .
- Q4- Verify that the numbers 2, 1 and 1 are zeroes of $p(x) = x^3 - 4x^2 + 5x - 2$. Also, verify the relationship between zeroes and the coefficients.
- Q5- Apply the division algorithm to find the quotient and remainder on dividing $x^3 - 3x^2 + 5x - 3$ by $x^2 - 2$.

- Q6- Check whether $t^2 - 3$ is a factor of $2t^4 + 3t^3 - 2t^2 - 9t - 12$.
Applying division algorithm.
- Q7- If $(x-a)$ is a factor of $p(x) = x^3 - mx^2 - 2mx + na^2$, prove that $a = m + n$ and $a \neq 0$.
- Q8- What must be subtracted from $6x^4 + 7x^3 + 26x^2 - 25x + 25$ so that the resulting polynomial is exactly divisible by $3x^2 - x + 4$.
- Q9- What must be added to $4x^4 - 5x^3 - 39x^2 - 46x - 2$ so that the resulting polynomial is divisible by $4x^2 + 7x + 2$.
- Q10- If two zeroes of $x^4 - 6x^3 - 26x^2 + 138x - 35$ are $2 \pm \sqrt{3}$, find other zeroes.
- Q11- On dividing a polynomial $p(x) = x^3 - 3x^2 + x + 2$ by $g(x)$, the quotient and remainder are $x - 2$ and $-2x + 4$ respectively. Find $g(x)$.
- Q12- Find all the zeroes of $2x^4 - 3x^3 - 3x^2 + 6x - 2$, if two of its zeroes are $\sqrt{2}$ and $-\sqrt{2}$.

CLASS X (BIOLOGY) :

PLAN

6. Date of Commencement

H.W * Summer Vacation Home-work for Class X - A+B
BIOLOGY SECTION - A+B (By: R.S. Choudhary)

- Q1. What do you mean by life processes?
- Q2. Mention 4 major life processes occurring in Plant & Animals.
- Q3. What is photosynthesis? Write its 4 raw materials.
- Q4. Define - (a) Parasitism, (b) Saprophytism & Plasmogamy.
- Q5. Draw Digestive system of human. Write the steps of digestion and involved enzymes.
- Q6. Draw the Holozoic nutrition in Amoeba.
- Q7. What is respiration? Differentiate its two types (Aerobic & Anaerobic).
- Q8. Write 3 ways of conversion of glucose into Pyruvic Acid and the place in body, where occur.
- Q9. Draw respiratory system upto Alveoli.
- Q10. What is excretion? Draw excretory unit (Nephron). Also write its function.
- Q11. How does plants excrete waste materials?
- Q12. Write the differences between Artery, Vein and capillary.
- Q13. What do you mean by double circulation?
- Q14. Write the function of central nervous system and peripheral nervous system.
- Q15. Define Reflex action. Draw reflex arc.
- Q16. What do you mean by Endocrine glands.
- Q17. Name five endocrine glands & functions.
- Q18. What is plant hormone? Name them.
- Q19. Differentiate Tropic and Nastic movement.
- Q20. Draw an activity to show phototropic & geotropic movement in plants.

Principal

By R.S. Choudhary, PGT-Bio. D.A. 07/05/2020.

(ii) Brachydacty
(iii) Hunting ton

Principal

CLASS X (SST) :

1. Write at least one objective question with answer from each page of Chapter -1 (HISTORY), The Rise of Nationalism in Europe.
 2. Write at least one objective question with answer from each page of Chapter -1 (Geography), Resources And Development.
 3. Write at least one objective question with answer from each page of Chapter -1 (Economics), Development.
 4. Write few lines about the following.
 - a) Guiseppe Mazzini
 - b) Otto Van Bismarck
 - c) Romanticism
 - d) Nation State
 - e) Frankfurt Parliament
 - f) The Treaty of Vienna
 5. Make a project on the given topic : Forest And Wildlife resources in India (Geog. Ch2, Maximum pages-20)
 6. On full size chart paper draw an outline map of India shows the following.
 - a) The area where Red soil found.
 - b) The area where Black soil found.
 - c) The area where Alluvial soil found.
 - d) The area where Laterite soil found.
 7. Learn all the questions and answers given to you during online classes.
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CLASS XII (ENGLISH) :

1. To prepare 10 MCQ from first three lessons of Flamingo and Vistas.
 2. Write articles on the following:
 - a) Corona Pandemic
 - b) Terrorism
 3. Write Debates on the following:
 - a) Online classes good or bad
 - b) Lockdown is effective or not in controlling Corona Pandemic
 4. Write one poem on corona virus.
 5. Learn all the questions and answers given to you during online classes.
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CLASS XII (HINDI) :

1. कोरोना महामारी (COVID-19) का संक्रमण किस प्रकार फैलता है? इसके लक्षण तथा बचाव के उपायों को लिखें।
2. किसी एक साहित्यिक उपन्यास को पढ़ें और उसकी समीक्षा लिखें।
3. तुलसीदास की काव्यागत विशेषताओं को लिखें।

नोट- ये सभी गृह-कार्य A4 आकार के पेज पर लिखकर एक फोल्डर फाइल में जमा करें।

CLASS XII (MATHS) :

RELATIONS AND FUNCTIONS

Chapter1

MCOs

1. Let Z be the set of integers and R be the relation defined in Z such that aRb if $a - b$ is divisible by 3. Then R partitions the set Z into how many pairwise disjoint subsets?
A) 4 B) 3 C) 2 D) 0
2. Let T be the set of all triangles in the Euclidean plane, and let a relation R on T be defined as aRb if a is congruent to b . $a, b \in T$. Then R is
(A) reflexive but not transitive (B) transitive but not symmetric
(C) equivalence (D) none of these
3. Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be defined by $f(x) = 3x^2 - 5$ and $g: \mathbb{R} \rightarrow \mathbb{R}$ by $g(x) = \frac{x}{x^2+1}$, then $g \circ f$ is
A) $\frac{3x^2-5}{9x^4-30x^2+26}$ B) $\frac{3x^2-5}{9x^4-6x^2+26}$ C) $\frac{3x^2}{x^4+2x^2-4}$ D) $\frac{3x^2}{9x^4-30x^2-2}$
4. Let $f: \mathbb{N} \rightarrow \mathbb{R}$ be the function defined by $f(x) = \frac{2x-1}{2}$ and $g: \mathbb{Q} \rightarrow \mathbb{Q}$ be another function defined by $g(x) = x + 2$. Then $(g \circ f)\left(\frac{3}{2}\right)$
(A) 1 (B) -1 (C) $\frac{7}{2}$ (D) none of these
5. Let $f: \mathbb{R} \rightarrow \mathbb{Q}$ be defined by $f(x) = \begin{cases} 2x, & x > 3 \\ x^2, & 1 < x \leq 3 \\ 3x, & x \leq 1 \end{cases}$
Then $f(-1) + f(2) + f(4)$ is
(A) 9 (B) 14 (C) 5 (D) none of these
6. Let R be the relation on set of all straight lines in a plane such that $l_1 R l_2 \Leftrightarrow l_1 \perp l_2$. Then R is
(i) symmetric (ii) reflexive (iii) transitive (iv) an equivalence relation
7. If R is the largest equivalence relation on a set A and S be any relation on A , then
(i) $R \subset S$ (ii) $S \subset R$ (iii) $R = S$ (iv) none of these
8. Which of the following functions $f(x)$ from Z to itself are bijections?
(i) x^3 (ii) $x + 2$ (iii) $2x + 1$ (iv) $x^2 + x$
9. If $f: \mathbb{R} \rightarrow \mathbb{R}$ is given by $f(x) = 3x - 5$, then $f^{-1}(x)$ is
(i) $\frac{1}{3x-5}$ (ii) $\frac{x+5}{3}$ (iii) does not exist (iv) $3x + 5$
10. The number of binary operations that can be defined on a set of 2 elements is
(i) 8 (ii) 4 (iii) 16 (iv) 64

Very Short Answers (1 Mark)

1. Find $f \circ g$, if $f(x) = 8x^3$ and $g(x) = x^{1/3}$. Ans: $8x$
2. Show that binary operation $*$: $\mathbb{R} \times \mathbb{R} \rightarrow \mathbb{R}$ given by $a * b = (a+b)/2$, a, b belongs to \mathbb{R} is not associative.
3. Show that the function $f: \mathbb{N} \rightarrow \mathbb{N}$, given by $f(1) = f(2) = 1$ and $f(x) = x - 1$, for every $x > 2$, is onto but not one-one.
4. Let $f: \{1, 3, 4\} \rightarrow \{1, 2, 5\}$ and $g: \{1, 2, 5\} \rightarrow \{1, 3\}$ be given by $f = \{(1, 2), (3, 5), (4, 1)\}$ and $g = \{(1, 3), (2, 3), (5, 1)\}$. Write down $g \circ f$. Ans: $\{(1, 3), (3, 1), (4, 3)\}$
5. Write the conditions for symmetric Relations. Ans: if $(a, b) \in R$ then $(b, a) \in R$
6. If $f: \mathbb{R} \rightarrow \mathbb{R}$ be given by $f(x) = (3-x^3)^{1/3}$, find the value of $f \circ f(x)$. Ans: x
7. Let $*$ be a binary operation defined by $a * b = 2a + b - 3$. Find $(3 * 4) * 5$. Ans: 16
8. $f(x) = x + 7$ and $g(x) = x - 7$ where $x \in \mathbb{R}$ find $f \circ g(7)$. Ans: 7
9. Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be a function defined as $f(x) = 1 + x^2$, Is f one-one? Ans: No
10. Is function $f: \{1, 2, 3, 4\} \rightarrow \{2, 4, 5, 7\}$ given by $f = \{(1, 2), (2, 5), (3, 4), (4, 7)\}$ one-one? Ans: Yes
11. Let $*$ be a binary operation defined on \mathbb{Z} by $a * b = a - b$. Is $*$ commutative? Ans: No
12. Let L be the set of all straight lines in a given plane. Let R be a relation on L be defined as $xRy \Leftrightarrow x \perp y$ for $x, y \in L$. Is R transitive? ANS: No

Short Answers (4 Marks)

1. Let $f: \mathbb{R} - \{-3/5\} \rightarrow \mathbb{R}$ be a function defined as $f(x) = (5x + 3)^{-1}$, find f^{-1} . Ans: $f^{-1}(y) = \frac{1-3y}{5y}$
 2. Show that the function $f: \mathbb{R} \rightarrow \mathbb{R}$ define by $f(x) = (2x-1)/3$, $x \in \mathbb{R}$ is one-one and onto function. Also find the Inverse of the function f . Ans: $f^{-1}(y) = \frac{3y+1}{2}$
 3. Let $*$ be the operation on the set $\{1, 2, 3, 4, 5\}$ defined by $a * b = \text{H.C.F.}(a \& b)$. Form composition table & state whether $*$ is binary operation or not. Also, check for commutative & associative properties. Does identity element exist? Justify your answer.
 4. Check whether the relation R defined in the set $\{1, 2, 3, 4, 5, 6\}$ as $R = \{(a, b) : b = a + 1\}$ is reflexive, symmetric or transitive. Ans: none
 5. Consider $f: \mathbb{N} \rightarrow \mathbb{N}$, $g: \mathbb{N} \rightarrow \mathbb{N}$ and $h: \mathbb{N} \rightarrow \mathbb{R}$ defined as $f(x) = 2x$, $g(y) = 3y + 4$ and $h(z) = \sin z$, $\forall x, y$ and z in \mathbb{N} . Show that $h \circ (g \circ f) = (h \circ g) \circ f$.
 6. Show that the relation R in the set \mathbb{R} of real numbers, defined as $R = \{(a, b) : a \leq b^2\}$ is neither reflexive nor symmetric nor transitive.
 7. Let $*$ be a binary operation on the set \mathbb{Q} of rational numbers as follows : $a * b = a + ab$
 - (i) Is binary operations is commutative?
 - (ii) Is binary operation is associative?
-

Justify your answer.

Let 'T' be the set of all triangles in a plane with R a relation in T given by: $R = \{(T_1, T_2): T_1 \text{ is congruent to } T_2\}$. Show that T is equivalence relation.

9. Show that the relation R in the set $A = \{1,2,3,4,5\}$ given by $R = \{(a,b): a-b \text{ is even}\}$, is an equivalence relation.
10. Let $A = \mathbb{R} - \{3\}$ and $B = \mathbb{R} - \{1\}$. Consider the function $f: A \rightarrow B$ defined by $f(x) = \frac{x-2}{x-3}$. Is f one and onto? Justify your answer.
11. Show that $f: \mathbb{N} \rightarrow \mathbb{N}$, given by $f(x) = \begin{cases} x-1, & \text{if } x \text{ is even} \\ x+1, & \text{if } x \text{ is odd} \end{cases}$ is both one-one and onto?

Long Answers (6 Marks)

1. Consider $f: \mathbb{R}^+ \rightarrow [-5, \infty)$ given by $f(x) = x^2 - 5$. Show that f is invertible and $f^{-1}(y) = \sqrt{y+5}$, where \mathbb{R}^+ is the set of all non-neg. real numbers.
2. Consider $f: \mathbb{R}^+ \rightarrow [-5, \infty)$ given by $f(x) = 9x^2 + 6x - 5$. Show that f is invertible and $f^{-1}(y) = \frac{\sqrt{y+6}-1}{3}$, where \mathbb{R}^+ is the set of all non-neg. real numbers.
3. Binary operation * on Z is defined as $a * b = a+b+1$
Is * (i) commutative (ii) associative also find identity element and inverse element of 5.

Ans: (i) commutative (ii) associative, identity element -1 and inverse of 5 is -7

INVERSE TRIGONOMETRIC FUNCTIONS

CHAPTER 2

MCQs

1. The value of $\sin^{-1}\left(\cos\left(\frac{31\pi}{5}\right)\right)$
A) $\frac{3\pi}{5}$ B) $\frac{-7\pi}{5}$ C) $\frac{\pi}{10}$ D) $\frac{-\pi}{10}$
2. If $\tan^{-1}x + \tan^{-1}y = \frac{4\pi}{5}$, the value of $\cot^{-1}x + \cot^{-1}y$ is
A) $\frac{\pi}{5}$ B) $\frac{2\pi}{5}$ C) $\frac{3\pi}{5}$ D) π
3. If $3\tan^{-1}x + \cot^{-1}x = \pi$, then x equals to
(A) 0 (B) 1 (C) -1 (D) $\frac{1}{2}$
4. What is principal value branch of $\cos^{-1}x$?
A) $\left[\frac{-\pi}{2}, \frac{\pi}{2}\right]$ B) $(0, \pi)$ C) $[0, \pi]$ D) $(0, \pi) - \left\{\frac{\pi}{2}\right\}$
-
5. The value of $\cos^{-1}\left(\cos\left(\frac{7}{25}\right)\right)$
A) $\frac{25}{24}$ B) $\frac{25}{27}$ C) $\frac{24}{25}$ D) $\frac{7}{24}$
6. The value of $\tan\left(\cos^{-1}\frac{3}{5} + \tan^{-1}\frac{1}{4}\right)$ is
(i) $\frac{19}{8}$ (ii) $\frac{8}{19}$ (iii) $\frac{19}{12}$ (iv) $\frac{3}{4}$
7. If $4\cos^{-1}x + \sin^{-1}x = \pi$, then the value of x is
(i) $\frac{3}{2}$ (ii) $\frac{1}{\sqrt{2}}$ (iii) $\frac{\sqrt{3}}{2}$ (iv) $\frac{2}{\sqrt{3}}$
8. The value of $\sin^{-1}\left(\cos\frac{33\pi}{5}\right)$ is
(i) $\frac{3\pi}{5}$ (ii) $-\frac{\pi}{10}$ (iii) $\frac{\pi}{10}$ (iv) $\frac{7\pi}{5}$
9. The value of $\cot\left(\frac{\pi}{4} - 2\cot^{-1}3\right)$ is
(i) 7 (ii) 6 (iii) 5 (iv) none of these
10. The number of solutions of the equation $\tan^{-1}2x + \tan^{-1}3x = \frac{\pi}{4}$
(i) 0 (ii) 1 (iii) 3 (iv) none of these

Very Short Answers (1 Mark)

1. Write the domain of $\sec^{-1} x$ Ans: R- (-1,1)
2. What is the principal value of $\cos^{-1}(\cos 2\pi/3) + \sin^{-1}(\sin 2\pi/3)$? Ans: π
3. What is the principal value of $\cos^{-1}(\cos \frac{\pi}{7})$? Ans: $\pi/7$
4. Write the value of $\sin^{-1} x + \cos^{-1} x$ Ans: $\pi/2$
5. Find the principal value of $\sin^{-1}(-\frac{1}{2})$ Ans: $-\pi/6$
6. What is the principal value of $\cos^{-1}(\cos \frac{13\pi}{6})$? Ans: $\pi/6$
7. $\tan^{-1}\sqrt{3} - \sec^{-1}(-2)$. ANS: $-\pi/3$

Short Answers (4Marks)

1. Prove the following
$$\cot^{-1} \frac{\sqrt{1+\sin x} + \sqrt{1-\sin x}}{\sqrt{1+\sin x} - \sqrt{1-\sin x}} = \frac{x}{2}$$
 2. Solve for x
 $2 \tan^{-1}(\cos x) = \tan^{-1}(2 \operatorname{cosec} x)$ Ans: $\pi/4$
 3. Prove that
 $\tan^{-1}\frac{1}{5} + \tan^{-1}\frac{1}{7} + \tan^{-1}\frac{1}{3} + \tan^{-1}\frac{1}{8} = \frac{\pi}{4}$
 4. Prove that $\tan^{-1}(63/16) = \sin^{-1}(5/13) + \cos^{-1}(3/5)$
 5. Prove that $\tan^{-1} \left[\frac{\sqrt{1+x^2} + \sqrt{1-x^2}}{\sqrt{1+x^2} - \sqrt{1-x^2}} \right] = \frac{\pi}{4} + \frac{1}{2} \cos^{-1} x^2$
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6. Prove that: $\tan^{-1}\left(\frac{63}{16}\right) = \sin^{-1}\left(\frac{5}{13}\right) + \cos^{-1}\left(\frac{3}{5}\right)$.
 7. Solve : $\tan^{-1}2x + \tan^{-1}3x = \pi/4$ Ans: 1/6
 8. If $\tan^{-1} \frac{x-1}{x-2} + \tan^{-1} \frac{x+1}{x+2} = \frac{\pi}{4}$, then find the value of x. ANS: $\pm \frac{1}{\sqrt{2}}$
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CLASS XII (PHYSICS) :

- **Questions of exercises of NCERT text book of chapters**
 - 1. Electric charges and field.**
 - 2. Electric potential and capacitances.**
 - 3. Current electricity.**
- **Along with all questions/assignments given till the date.**

CLASS XII (BIOLOGY):

Vacation Home work given to Class XII
Biology-

16:04

Write short notes on the following-

1. Menstrual cycle.
2. Gestation.
3. Parturition.
4. Lactation.

16:04

Now Ans.

the following-

1. Write Botanical name of Pea.
2. Who is the father of Genetic?
- Q3. write 3 laws of Mendel.
- Q.5. Which term was applied by Mendel instead of Gene ?

16:04

2nd round

Q.1. What's Traits?

Q.2 What is the Numbers of Chromosome in pea cells

(in each body cell)

Q.3. Define Allel.

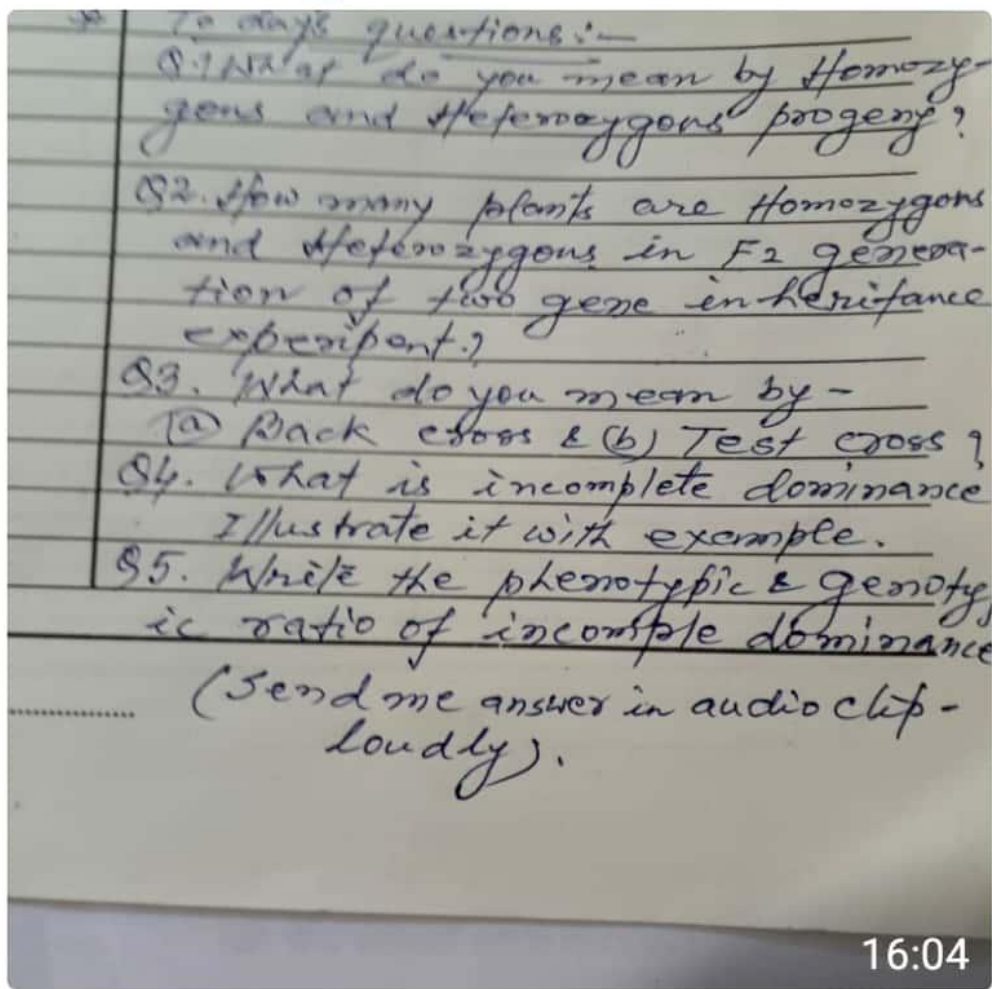
Q.4. What is Dominant & Recessive Gene?

Q.4. What is hybrid?

Q.5 Write phenotypic ratio of mono/
dihybrid cross.

16:04

Kv/Choudhary Sir



Q.1. what is Codominance? Put example.

Q2. If a man with Blood group A married with a woman having B.Gr. B, What is the Blood Group of offspring (child). Why is it happen?

Q3. Is B.Gr p i , without sugar dominant or recursive ?

Q.4. What is sex determination?

Q.5 If a Black fowl is mated with white fowl, what is the colour of progeny ?

16:04

Q.1. How can you depict the inheritance of two genes? Show

with sketch & make its checker Board.

Q.2. Tabulate the types of progeny with different Blood Group by taking blood Group of male & female parent such as A, B & O on their I gene.

16:04

Q.3. Sketch sex determination in Human & Drosophylla (fruit fly).

Q.4. Write 4 points about Chromosomal theory of inheritance. (see page 81, table 5.8-5.10).

Q.5. What do you mean by Sex linked disease or disorder.

Give few examples & their cause.

16:04

Office copy Home work submitted by
R.S.Chy, PGT(Bio)

16:06

CLASS XII (COMPUTER SCIENCE) :

Basic programs:

1. Write a program in python to ask the user to input distance and time as integer values and print the speed of vehicle.
2. Write a program in python that ask the users to input temperature in Celsius and print the temperature in Kelvin and Fahrenheit.
3. Write a program in python that ask the users to input the length, breadth and height of a Cuboid and display its surface area and volume.
4. Write a program in python that ask the user to input the marks in physics, chemistry and mathematics and display the percentage of the student. It should also display passed with distinction if the percentage is greater than or equal to 75.
5. Write a program in python that ask the user to input a number and display table of that number.
6. Write a program in python that ask the users to input a number and display all the numbers that are multiple of either 3 or 8 up to the given number.
7. Write a program in python to find the HCF and LCM of two numbers.
8. Write a program in python to find whether an entered number is prime or not.
9. Write a program in python to find prime numbers up to an entered number.
10. Write a program in python that generates a random number between 1 and 6 (simulates a dice).

List

11. Write a program in python that initializes an integer list of 10 elements and display all values on same line separated by “_”.
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12. Write a program in python that ask the users to input 10 elements. Store all the elements in a list and display the values in a single line separated by space. Also, print the minimum and maximum value entered.
13. Write a program in python that ask the users to input 20 numbers, store the numbers into two different lists, the first containing only even numbers and the second containing only odd numbers. Find the sum of numbers in each list.
14. Write a program in python to input ten numbers. If the sum of them is even, find the maximum out of three, otherwise, find the minimum out of three. Also, find the second largest number in the list.

User-defined Functions

15. Write a program to find the factorial of a number without using recursion.
16. Write a program find the n^{th} term of Fibonacci series without using recursion.
17. Write a program print the n terms of Fibonacci series when the number is passed as an argument to a user-defined function.
18. Write a program in python to print the reverse of a number passed as an argument to a user-defined function.
19. Write a program in python to print the sum of digits of a number passed as an argument to a user-defined function.
20. Write a program in python to find the GCD and LCM of two numbers when the numbers are passed as arguments to a user-defined function.

Recursion

21. Write a program find the factorial of a number when the number is passed as an argument to a user-defined recursive function.
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-

22. Write a program to print the n terms of Fibonacci series when the number is passed as an argument to a user-defined recursive function.
 23. Write a program in python to print the sum of digits using recursion.
 24. Write a program in python to find the sum of all elements in a list using recursion.
 25. Write a program in python to find whether a string is palindrome or not using recursion.
 26. Write a program in python to find the GCD and LCM of two numbers using recursion.
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