HOLIDAY HOMEWORK 2024-25

CLASS XI

ENGLISH CORE

1. Read the newspaper every day and collect one good article/feature each related to the Elderly, Adventure, problems faced due to construction activities in Delhi-NCR , Environmental hazards and paste them in your registers.

2. Make a project on any social issue.

NOTE

1. It should be of 20 pages. (A4 Size)
2. Handwritten on
3. Methodology should be followed

3. Watch Ted talks related to the Elderly, People with disabilities and Environment and express your opinion on the same in about 100 words each.

4. Your school is holding a poster making competition on “Children should not use mobile phones”. Draft a suitable poster as your entry for the competition.

5. Read any ONE of the novels suggested below:

a. YOU CAN WIN

b. THINK LIKE A MONK

6. REVISE YOUR P.A -1 SYLLABUS

MULTIPLE CHOICE QUESTIONS

CHAPTER – 1 SETS

Q1. Let A and B be two sets in the same universal set. Then, $A-B=$

(a) $A\cap B$ (b) $A^c\cap B$ (c) $A\cap B^c$ (d) none of these

Q2. The number of subsets of a set containing n elements is

(a) n (b) 2^n-1 (c) n^2 (d) 2^n

Q3. Let A and B be two sets in the same universal set. Then, $A\cap(A\cup B)=$

(a) A (b) B (c) ϕ (d) none of these

Q4. If A and B are two given sets, then $A\cap(A\cap B)^c$ is equal to

(a) A (b) B (c) ϕ (d) $A\cap B^c$

Q5. If $A=\{x:x \text{ is a multiple of } 3\}$ and $B=\{x:x \text{ is a multiple of } 5\}$, then $A-B$ is

(a) $A\cap B$ (b) $A\cap\overline{B}$ (c) $\overline{A}\cap\overline{B}$ (d) $(A\cap B)^c$

Q6. For any two sets A and B, $A\cap(A\cup B)^c$ is equal to

(a) A (b) B (c) ϕ (d) $A\cap B$

Q7. If $A=\{1,2,3,4,5\}$, then the number of proper subsets of A is

(a) 120 (b) 30 (c) 31 (d) 32

Q8. Which of the following is an empty set?

(a) $\{x:x\in R, x^2-1=0\}$ (b) $\{x:x\in R, x^2+1=0\}$

(c) $\{x:x\in R, x^2-4=0\}$ (d) $\{x:x\in R, x^2-x-2=0\}$

Q9. If $A=\{1,3,5,7,9,11,13,15,,17\}, B=\{2,4,6,...,18\}$ and N is the universal set, then $A^c\cup\left[(A\cup B)\cap B^c\right]$ is

(a) A (b) B (c) N (d) $A^c\cup B^c$

Q10. If A and B are two non empty sets, then $(A-B)\cup(B-A)$ equals

(a) $(A\cup B)-B$ (b) $A-(A\cap B)$ (c) $(A\cup B)-(A\cap B)$ (d) $(A\cap B)\cup(A\cup B)$

MULTIPLE CHOICE QUESTIONS

CHAPTER – 2 RELATIONS AND FUNCTIONS

Q1. If $A=\{1,2,4\}, B=\{2,4,5\}, C=\{2,5\}$, then $(A-B)\times(B-C)$ is

(a) $\{(1,2),(1,5),(2,5)\}$ (b) $\{(1,4)\}$ (c) $(1,4)$ (d) none of these

Q2. If R is a relation on the set $A=\{1,2,3,4,5,6,7,8,9\}$ given by $xRy \Leftrightarrow y=3x$, then R is

(a) $\{(3,1),(6,2),(8,2),(9,3)\}$ (b) $\{(3,1),(6,2),(9,3)\}$

(c) $\{(3,1),(2,6),(3,9)\}$ (d) none of these

Q3. Let $A=\{1,2,3\}, B=\{1,3,5\}$. If relation R from A to B is $R=\{(1,3),(2,5),(3,3)\}$. Then R^{-1} is

(a) $\{(3,3),(3,1),(5,2)\}$ (b) $\{(1,3),(2,5),(3,3)\}$ (c) $\{(1,3),(5,2)\}$ (d) none of these

Q4. If $A=\{1,2,3\}, B=\{1,4,6,9\}$ and R is a relation from A to B defined by 'x is greater than y'. The range of R is

(a) $\{1,4,6,9\}$ (b) $\{4,6,9\}$ (c) $\{1\}$ (d) none of these

Q5. If $R=\{(x,y):x,y\in Z, x^2+y^2\le 4\}$ is a relation on Z, then domain of R is

(a) $\{0,1,2\}$ (b) $\{0,-1,-2\}$ (c) $\{-2,-1,0,1,2\}$ (d) none of these

Q6. A relation R from $\{2,3,4,5\}$ to $\{3,6,7,10\}$ is defined as $xRy \Leftrightarrow x$ is relatively prime to y. Then domain of R is

(a) $\{2,3,5\}$ (b) $\{3,5\}$ (c) $\{2,3,4\}$ (d) $\{2,3,4,5\}$

Q7. Let R be a relation on N defined by $x+2y=8$, then domain of R is

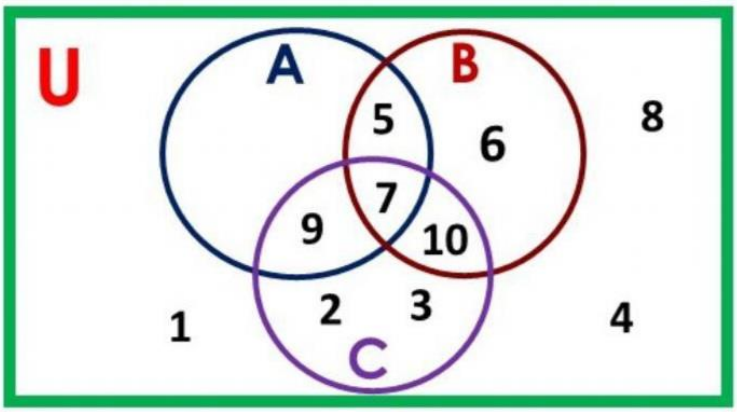
(a) $\{2,4,8\}$ (b) $\{2,4,6,8\}$ (c) $\{2,4,6\}$ (d) $\{1,2,3,4\}$

Q8. If R is a relation from a finite set A having m elements to a finite set B having n elements, then the number of relations from A to B is

(a) 2^{mn} (b) $2^{mn}-1$ (c) $2mn$ (d) m^n

Activity : Set Operations and Venn Diagrams

A. Given the Venn Diagram below, identify the elements for the indicated set. List your answers in least to greatest order of elements. (2 points)



a. A

b. B

c. C

d. U

e. A ∪ B

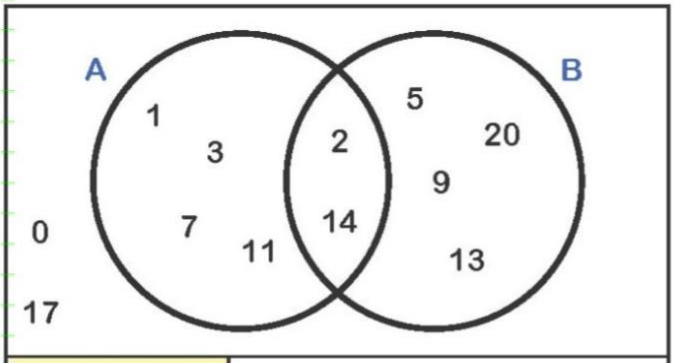
f. B ∪ C

h. A∪ B ∪ C

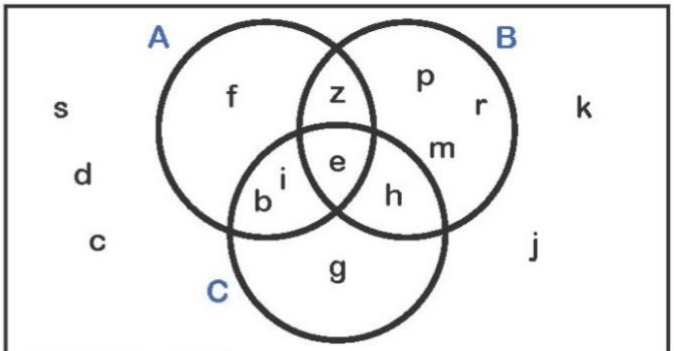
i. B ∩ C

j. A ∩ C

k. A ∩ B ∩ C



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

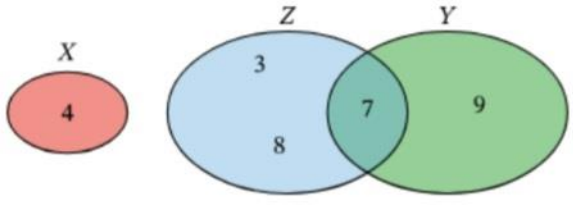


$A =$	
$B' =$	
$A \cap B \cap C =$	

CHAPTER-1: SETS

1MARK QUESTIONS

Q.NO.	QUESTIONS
1	The complement of the intersection of two sets is the union of their complements." This statement is called: (a) Complement Law (b) Associative Law (c) Idempotent Law (d) De Morgan's Law
2	If A={1,2,3,4,5}, then the number of proper subsets of A is (a) 120 (b) 30 (c) 31 (d)32
3	The set of circles passing through the origin (0,0) (a)Finite set (b) infinite set (c) Null set (d) none of these
4	The shaded part of a line is in given figure can also be described as  A. $(-\infty, 1) \cup (2, \infty)$ B. $(-\infty, 1] \cup [2, \infty)$ C.(1,2) D. [1,2]
5	**Roster for set C = {x : $x^2 + 7x - 8 = 0$, x ∈ R} is** (a) {– 8, 1} (b) [- 8, 1] (c) (- 8, 1) (d) {- 1, 8}

6	**The set builder form of interval [-4, 9) is:** (a) $\{x: x\in R, -4 \le x \le 9\}$ (b) $\{x: x\in R, -4 \le x < 9\}$ (c) $\{x: x\in R, -4 < x < 9\}$ (d) $\{x: x\in R, -4 < x \le 9\}$
7	**Let U = {1, 2, 3, 4, 5, 6}, A = {2, 3} and B = {3, 4, 5}.Then which one is correct** **(a)** $(A \cup B)' = A' \cup B'$**(b)** $(A \cap B)' = A' \cup B'$ **(c)** $(A \cap B)' = A' \cap B'$**(d)** $A' \cap B' = A' \cup B'$
8	For any two sets A and B, A∩ (A ∪ B) = (a)A (b) B (c) ∅ (d) none of these
9	Which of the following are examples of the singleton set? (a) $\{x: x \in Z, x^2 = 4\}$ (b) $\{x: x \in Z, x + 5 = 0\}$ (c) $\{x: x \in Z, x^2 = 16\}$ (d) $\{x: x \in Z, \lvert x\rvert = 1\}$
10	Let $A = \{1,2,\{3,4\},5\}$Which of the following are incorrect statement? (a) $\{3,4\} \subset A$ (b) $\{3,5\} \subset A$ (c) $\{\{3,4\}\} \subset A$ (d) $3,4 \in A$
11	If $A = \phi$ then n[P(A)] = (a) 1 (b) 2 (c) 0 (d) 3
12	If $A = (2,4), B = [3,5)$ then $A \cap B$ = **(a) (3 , 4) (b) [3, 4) (c) [2, 5) (d) (3, 5)**
13	Let A and B be two sets such that n(A)= 16, n(B)= 14, n(A∪B)=25 then n(A∩B) is equal to (a) 30 (b)50 (c) 5 (d)none of these
14	The set A∪ A' is (a) A (b) A' (c)∅ (d) U
15	Set A and B have 3 and 6 elements respectively. What can be the minimum number of elements in A∪B? (a) 3 (b) 6 (c) 9 (d) 8
16	For the Venn - diagram given below, the set $(Z - Y) \times (X \cup Y)$ is:  (a) {(3,4), (3,7), (3,9), (8,4), (8,7), (8,9)} (b) {(4,8), (9,8), (7,8), (4,3), (9,3), (7,3)} (c) {(8,4), (8,9), (8,7), (4,3), (9,3), (7,3)} (d) {(4,8), (9,8), (7,8), (3,4), (3,9), (3,7)}

2MARKS QUESTIONS

Q. NO	QUESTION
1	Write the set $A = \{x: x \in Z, x^2 < 20\}$ in roster form.
2	Which of the following sets are empty sets? (i) $A = \{x: x^2 - 3 = 0 \; and \; x \; is \; rational\}$ (ii) $\boldsymbol{B} = \{x \in R: 0 < x < 1\}$
3	Write down all possible subsets of each of the following sets: (i) $\{1, \{1\}\}$ (ii) $\{1,2,3\}$
4	Write the following as intervals: (i) $\{x: x \in R, -12 < x < -10\}$ (ii) $\{x: x \in R, 3 \leq x \leq 4\}$
5	What Universal Set would you propose for each of the following: (i) the set of isosceles triangle? (ii) the set of right triangle.

3 MARKS QUESTIONS

1	Let $U = \{1,2,3,4,5,6,7,8,9\}, A = \{2,4,6,8\} \; and \; B = \{2,3,5,7\}. Verify \; that,$ $(i)(A \cup B)' = A' \cap B' \; (ii)(A \cap B)' = A' \cup B'.$
2	Which of the following sets are finite and which are infinite: (i) A = $\{x: x\epsilon \; Z \; and \; x^2 - 5x + 6 = 0\}$ (ii) $B = \{x: x \; \epsilon \; Z \;\; and \; x^2 \; is \; even\}$ (iii) C = $\{x : x \; \epsilon \; Z \; and \; x > -10\}$
3	Let A and B be two sets. Prove that $(A - B) \cup B = A \; if \; and \; only \; if \; B \subset$ A.
4	Let $U = \{1,2,3,4,5,6,7,8,9\}$ $A = \{1,2,3,4\}$, B = $\{2,4,6,8\}$, C = $\{3,4,5,6\}$. Find (i) $(A \cap C)'(ii)(A')'(iii)(B - C)'$
5	Which of the following pairs of sets are equal? Justify your answer (i) $A = \{x: x \; is \; a \; letter \; of \; the \; word \; "LOYAL"\}$ B = $\{x: x \; is \; a \; letter \; of \; the \; word \; "ALLOY"\}$. (II) A = $\{x: x \; \epsilon \; Z \; and \; x^2 \leq 8 \}$ B = $\{x: x \; \epsilon \; R, and \; x^2 - 4x + 3 = 0\}$

4 MARKS QUESTIONS

1 Three friends were having get together. Suddenly they decided to play with their names using sets. Name of friends were AARTI, CHARVI and AYSHA. They asked each other the following questions.

(i) How letters used for AARTI are written in roster form as a set?
(a) $\{A, R, T, I\}$ (b) $\{x: x \text{ is a letter of the word } AARTI\}$
(c) {A,T,I} (d) none of these

(ii) What is the difference of set of letters of CHARVI and AYSHA?
(a) $\{C, R, V, I\}$ (b) {C,S,V,I} (c) {C,T,V,I} (d) {C,V,I}

(iii) Form a union of sets taking the letters of names of friends.

$(a)\{A, R, T, I, C, H, V, Y, S\}$ (b) {A,R,T,I,C,H,V,}

(c) {A,R,C,H,V,Y,S} (d) none of these

(iv) Form a set of intersection of sets taking the letters of names of friends.
(a) {A} (b) {A,R,T,I,C,H,V} (c) {A,R,C,H,V,Y,S} (d) none of these

2 After explaining operation on sets, Mathematics teacher in class wrote there sets as $A = \{2, 3, 4, 5\}$, $B = \{6, 7, 8\}$, $C = \{x: x \text{ is prime number less than } 10\}$. She asked the students that the following questions will judge how much you have understood. She asked the students to write down the answers and later they can check from the answers written by teacher and give marks.

(i) AU B =
(a) {2,3,4,5,6,7,8} (b) {2,3,4,5} (c) {6,7,8} (d) none of these

(ii) $(AUB) \cap C =$

(a) {2,3,5,7} (b) {2,3} (c) {5,7} (d) none of these

(iii) $(C - B) =$

(a) {2,3,5} (b) {2,3,5,7} (c) {3,5,7} (d) none of these

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

(a) {2,3,5} (b) {2,3} (c) {3,5} (d) none of these

3 **Case-Study: Passage-based question: Study the passage and table given below and answer the questions (i) and (ii) given below:**

The intervals are defined as the set of all real numbers lying between two given real numbers (end points / boundary points). It is a way of writing subsets of the set of all real numbers. Based on the inclusion / exclusion of end points the intervals are classified as – closed, open and semi closed / semi open intervals as shown in the following table.

Intervals

Intervals	Notations	inequalities	Number line representation
Closed	[a, b]	$a \leq x \leq b$	
Open	(a, b)	$a < x < b$	
Closed-Open	[a, b)	$a \leq x < b$	
Open - Closed	(a, b]	$a < x \leq b$	

Intervals are sets so we can combine two or more intervals using

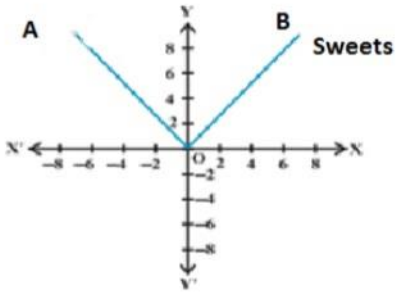
3(i)	To join the Indian Army under technical entry scheme the age of a candidate must be more than 16½ years and not above 19½ years. Represent the age limit using the interval.
3(ii)	According to weather report of Meteorological department the hottest month in Srinagar is July (minimum temperature 6°C, maximum temperature 32°C) and the coldest are December – January (temperature is between −15°C and 0°C). Represent the range of temperature in both the seasons as a single interval using the set

4	Sneha and Maria are best friends. Sneha likes Mathematics while Maria likes Statistics. They have created two non-empty sets A and B given by A = {x : x is a letter in 'I LOVE MATHEMATICS'} and B = {x : x is a letter in 'I LOVE STATISTICS'} Based on this information, answer the following questions.
4(i)	Which of the following is True? (a) A = B (b) A ⊂ B (c) B ⊂ A (d) All of the above
4(ii)	A ∩ B is equal to (a) A (b) B (c) A ∪ B (d) ϕ
4(iii)	If number of proper subsets of A is n- more than number of proper subsets of B. Then find the value of n.

CHAPTER-2: RELATIONS AND FUNCTIONS

Q. NO	QUESTION
1	If AXA has 9 elements two of which are (-1, 0) and (0, 1), find the set A and the remaining elements of AXA.
2	**If A=$\{a, b\}$, find AXA.**
3	**If A × B = $\{(p, q), (p, r), (m, q), (m, r)\}$, find A and B**
4	Write the relation R = $\{(x, x^3)$: x is a prime number less than 10$\}$ in roster form.
5	Find the values of a and b, when (a+3,b+2) =(5,1)
6	Find the domain and the range of the real function f(x) =$\sqrt{9 - x^2}$.
7	Let f, g: R→R be defined by f(x) = x + 1 and g(x) = 2x – 3. Find f – g, f. g and $\frac{f}{g}$.
8	Find the domain and the range of the real function f(x) =$\sqrt{(5 - x)}$.
9	Let f be the subset of Z x Z, defined by f = {(ab, a + b): a, b∈ Z}. Is f a function from Z to Z?Justify Your answer.
10	The function't' which maps temperature in degree Celsius in to temperature in degree Fahrenheit is defined by t(C) = $\frac{9C}{5}$+ 32. Find t (0), t (- 10) and the value of C, when t (C) = 212
11	In a school at Chandigarh, students of class XI were discussing about the relations and functions. Two StudentsAnkita and Babita form two sets A = {1, 2, 3, 4, 5} and B = {2, 4, 6}.  Based on the above information answer the following:

	(1)Find n(A×B) (2)A correspondence of elements from A to B given as {(1, 2), (2, 2), (3, 4), (3, 6), (4, 4), (5, 6)}.Is it a function? Justify your answer. (3)If the function f: A⟶B such that (a, b)∈ f and a < b, defined by f = {(1, 2), (x, 4), (2, 4), (4, y), (5, 6)}, then find x and y.

12	A is the anthills of an ant, at B some sweets are there and ant wants to reach at B. The path traced by an ant is shown in the following graph:  On the basis of the above graph find the following: (1)When ordinate is 6 then find abscissa (2)Which axis is line of symmetry for the graph? (3)Write the function for the graph along with domain and range.

Physics Holiday Homework

NOTES AND ASSIGNMENTS TO BE DONE IN NOTEBOOK

MATHEMATICAL TOOLS

Physical constants:-

1. Mass of an electron (M_e) = 9.1×10^{-31}kg.
2. Mass of a proton (M_p) = 1.6725×10^{-27}kg.
3. Mass of a neutron (M_n) = 1.6746×10^{-27}kg.
4. Charge of an electron (e) = -1.6×10^{-19}c
5. Speed of light in vacuum (c) = 3×10^{8} m/sec.
6. Planck Constant (h) = 6.6256×10^{-34} J x sec .
7. Universal Gravitation constant (G) = 6.67×10^{-11} Nm^2/ kg^2.
8. Avogadro Number (N_A) = 6.023×10^{23} mol^{-1}.
9. Boltzmann constant (K) = 1.38×10^{-23} J/K
10. Stefan Constant (σ) = 5.67×10^{-8} W m^{-2} K^{-4}.
11. Wien Displacement Constant (b) = 2.898×10^{-3} m K
12. Solar Constant (S) = 1.388×10^{3} W m^{-2}
13. Mass of the sun (M_S) = 2×10^{30}kg.
14. Mass of the earth (M_E) = 5.98×10^{24}kg
15. Radius of the earth (R_e) = 6400 Km. = 6.4×10^{6}m.
16. Density of earth 5.522×10^{3}kg/m^3.
17. Average angular velocity of the earth = 7.29×10^{-5}rad./sec
18. Average distance between the sun and earth = 1.5×10^{11}m.
19. Average distance between moon and the earth =3.84×10^{8}m.
20. Magnetic Moment of the earth = 6.4×10^{21} Amp. X m^2.

Conversion Coefficients

1. 1Light year = 9.46×10^{15}m.
2. 1 A.U. = 1.496×10^{11}m.
3. 1Å = 10^{-10}m.
4. 1 Pound = 0.4536kg = 453.6 gm
5. 1 Fermi = 10^{-15}m.
6. 1 C.S.L.= 1.4 x Mass of the sun.
7. 1 Shake = 10^{-8}sec
8. 1ev = 1.6×10^{-19} Joule.
9. 1 Horse Power = 746 Watt.

Quadratic Equation

An equation of second degree is called a quadratic equation. It is of the form :-

$$ax^2 + bx + c = 0$$

The roots of a quadratic equation are

$$X = \frac{-b \pm (b^2 + 4ac)^{1/2}}{2a}$$

Binomial Theorem

If n is any integer, positive or negative or a fraction and x is any real number, then

$$(1+x)^n = 1 + nx + \frac{n(n-1)x^2}{!2} + \ldots$$

If $|x| << 1$, then $(1+x)^n = 1 + nx$.

Mensuration :-

1. Area of a circle = $\pi r^2 = \pi D^2/4$
2. Surface area of a sphere = $4\pi r^2 = \pi D^2$
3. Volume of a sphere = $4/3\ \pi r^3$
4. Surface area of a cylinder = $2\pi r(r+l)$
5. Volume of a cylinder = $\pi r^2 l$
6. Curved surface area of a cone = πrl
7. Volume of a cone = $1/3\pi r^2 h$
8. Surface area of a cube = $6x(side)^2$
9. Volume of a cube = $(side)^3$

Fundamental Trigonometric relations

$$\text{Cosec}\theta = \frac{1}{\text{Sin}\theta}$$

$$\text{Sec}\theta = \frac{1}{\text{Cos}\theta}$$

$$\text{Cot}\theta = \frac{\text{Cos}\theta}{\text{Sin}\theta} = \frac{1}{\text{Tan}\theta}$$

$$\text{Tan}\theta = \frac{\text{Sin}\theta}{\text{Cos}\theta}$$

$$\text{Sin}^2\theta + \text{Cos}^2\theta = 1$$

$$1 + \tan^2\theta = \text{Sec}^2\theta$$

$$1 + \text{Cot}^2\theta = \text{Cosec}^2\theta$$

$$\text{Sin}(A+B) = \text{SinACosB} + \text{CosASinB}$$

Cos (A + B) = CosACosB – SinASinB

Sin (A – B) = SinACosB – CosASinB

Cos (A – B) = CosACosB + SinASinB

$$\mathrm{Tan(A+B)} = \frac{\mathrm{TanA+TanB}}{\mathrm{1-TanATanB}}$$

Sin 2A = 2SinACosA

Cos 2A = $2Cos^2A - 1 = 1 - 2Sin^2A = Cos^2A - Sin^2A$

Sin (A+B) + Sin(A-B) = 2 SinACosB

Cos(A+B) + Cos (A-B) = 2CosACosB

$$\mathrm{CosC + CosD} = 2\mathrm{Cos}\frac{(\mathrm{C+D})}{2}\mathrm{Cos}\frac{(\mathrm{C-D})}{2})$$

Logarithms

$Log_amn = Log_am + Log_an$

$Log_a(\frac{m}{n}) = Log_am - Log_an$

$Log_am = Log_bm \times Log_ab$

$Log_{10}10^3 = Log_{10}1000 = 3$

$Log_a1 = 0$

$Log_aa = 1$

Average Values

$< \mathrm{Sin}\theta > = 0$, $< \mathrm{Cos}\theta > = 0$

$< Sin^2\theta >= ½$

$< Cos^2\theta > = ½$

Approximate Values

If angle (θ) small then $\theta \longrightarrow 0$

$\mathrm{Sin}\theta \cong \theta$

$\mathrm{Cos}\theta \cong 1$

$\mathrm{Tan}\theta \cong \theta$

Differential Formulae

1. Differentiation of a constant© is zero

$$\frac{dc}{dx} = 0$$

2. $\frac{\mathrm{d(cy)}}{\mathrm{dx}} = \mathrm{c}\frac{\mathrm{dy}}{\mathrm{dx}}$

3. $\frac{d(x^n)}{dx} = nx^{n-1}$

4. $\frac{d[f(x)\pm g(x)]}{dx} = \frac{df(x)}{dx} \pm \frac{dg(x)}{dx}$

5. $\frac{d\{f(x)g(x)\}}{dx} = \frac{f(x)dg(x)}{dx} + \frac{g(x)df(x)}{dx}$

6. $\frac{d}{dx}\left\{\frac{f(x)}{g(x)}\right\} = \frac{g(x)\frac{df(x)}{dx} - f(x)\frac{dg(x)}{dx}}{\{g(x)\}^2}$

7. $\frac{dy}{dx} = \frac{dy}{du}\frac{du}{dx}$

8. $\frac{de^x}{dx} = e^x$

9. $\frac{du^n}{dx} = nu^{n-1}\frac{du}{dx}$

10. $\frac{dlog_e x}{dx} = \frac{1}{x}$

11. $\frac{d(a^x)}{dx} = a^x log_e a$

12. $\frac{dlog_a x}{dx} = \frac{1}{x} log_e a$

13. $\frac{d(\sin x)}{dx} = \cos x$

14. $\frac{d(\cos x)}{dx} = -\sin x$

15. $\frac{d(\tan x)}{dx} = sec^2 x$

16. $\frac{d(\cot x)}{dx} = -cosec^2 x$

17. $\frac{d(cosecx)}{dx} = -\text{cosec}\, x\, cot\, x$

18. $\frac{d(secx)}{dx} = \sec x\, tan\, x$

Integral Formulae

1. $\int dx = x + c$ Where c = constant
2. $\int x^{n+1} dx = \frac{x^{n+1}}{n+1} + C$
3. $\int dx/x = \log_e x + c$
4. $\int \text{Sin}x\, dx = -\text{Cos}x + c$

5. $\int \text{Sin } ax\, dx = -\frac{\text{Cos } ax}{a}$
6. $\int \text{Cos } x\, dx = \text{Sin } x + c$
7. $\int \text{Sec}^2 x\, dx = \tan x + c$
8. $\int \text{Cosec}^2 x\, dx = -\text{Cot } x + c$
9. $\int \text{Sec } x \tan x\, dx = \text{Sec } x + c$
10. $\int \text{Cosec } x \text{ Cot } x\, dx = -\text{ Cosec } x + c$
11. $\int e^x\, dx = e^x + c$

Physical World And Measurement

There are four fundamental forces which govern both macroscopic and microscopic phenomena. There are

(i) Gravitational force (iii) Electromagnetic force

(ii) Nuclear force (iv) Weak force

The relative strengths of these forces are

$$Fg : Fw : Fe : Fs = 1 : 10^{25} : 10^{36} : 10^{38} .$$

All those quantities which can be measured directly or indirectly and in terms of which the laws of physics can be expressed are called physical quantities.

(a) Fundamental quantities (b) Derived quantities.

The units of the fundamental quantities called fundamental units , and the units of derived quantities called derived units.

System of units:-

(a) MKS (b) CGS (c) FPS (d) SI

- *The dimensions of a physical quantity are the powers to which the fundamental quantities are raised to represent that physical quantity.*

- The equation which expresses a physical quantity in terms of the fundamental units of mass, length and time, is called dimensional equation.
- According to this principle of homogeneity a physical equation will be dimensionally correct if the dimensions of all the terms in the all the terms occurring on both sides of the equation are the same.
- If any equation is dimensionally correct it is not necessary that must be mathematically correct too.

- There are three main uses of the dimensional analysis-

(a) To convert a unit of given physical quantities from one system of units to another system for which we use

$$n_2 = n_1[M_1/M_2]^a[L_1/L_2]^b[T_1/T_2]^c$$

(b) To check the correctness of a given physical relation.

(c) To derive a relationship between different physical quantities.

- Significant figures: - The significant figures are normally those digits in a measured quantity which are known reliably plus one additional digit that is uncertain.

For counting of the significant figure rule are as:

(i) All non- zero digits are significant figure.

(ii) All zero between two non-zero digits are significant figure.

(iii) All zeros to the right of a non-zero digit but to the left of an understood decimal point are not significant. But such zeros are significant if they come from a measurement.

(iv) All zeros to the right of a non-zero digit but to the left of a decimal point are significant.

(v) All zeros to the right of a decimal point are significant.

(vi) All zeros to the right of a decimal point but to the left of a non-zero digit are not significant. Single zero conventionally placed to the left of the decimal point is not significant.

(vii) The number of significant figures does not depend on the system of units.

- In addition or subtraction, the result should be reported to the same number of decimal places as that of the number with minimum number of decimal places.
- In multiplication or division, the result should be reported to the same number of significant figures as that of the number with minimum of significant figures.
- Accuracy refers to the closeness of a measurement to the true value of the physical quantity and precision refers to the resolution or the limit to which the quantity is measured.

- Difference between measured value and true value of a quantity represents error of measurement.

  It gives an indication of the limits within which the true value may lie.

  Mean of n measurements

$$a_{mean} = \frac{a_1 + a_2 + a_3 + \cdots \ldots + a_n}{n}$$

Absolute error (Δa) = a_{mean} - a_i Where a_i = measured value

It may be - positive, negative or zero.

(i) Mean absolute error

(ii) Relative error - it is the ratio of the mean absolute error to the true value.

$$\delta a = | \Delta a | / a_{mean}$$

(iii) The relative error expressed in percent is called percentage error.

The error is communicated in different mathematical operations as detailed below:

(i) For $x = (a \pm b)$, $\Delta x = \pm (\Delta a + \Delta b)$

(ii) For $x = a \times b$, $\Delta x/x = \pm (\Delta a/a + \Delta b/b)$

(iii) For $x = a/b$, $\Delta x/x = \pm (\Delta a/a + \Delta b/b)$

(iv) For $x= a^n b^m /c^p$ $\Delta x/x = \pm (n\Delta a/a + m \Delta b/b + p\Delta c/c$

Very short answer type questions, (1 mark question)

Q1. State one law that holds good in all natural processes.

Ans. One such laws is the Newton's gravitation law, According to this law everybody in this nature are attracts with other body with a force of attraction which is directly proportional to the product of their masses and inversely proportionally To the square of the distance between them.

Q2: Among which type of elementary particles does the electromagnetic force act?

Ans : Electromagnetic force acts between on all electrically charged particles.

Q3. Name the forces having the longest and shortest range of operation.

Ans : longest range force is gravitational force and nuclear force is shortest range force.

Q4. If 'slap' times speed equals power, what will be the dimensional equation for 'slap'?

Ans . Slap x speed = power

Or slap = power/speed = $[MLT^{-2}]$

Q5. If the units of force and length each are doubled, then how many times the unit of energy would be affected?

Ans : Energy = Work done = Force x length

So when the units are doubled, then the unit of energy will increase four times.

Q6. Can a quantity has dimensions but still has no units?

Ans : No, a quantity having dimension must have some units of its measurement.

Q7. Justify L +L = L and L – L =L.

Ans: When we add or subtract a length from length we get length, So L +L =L AND L – L =L, justify.

Q8. Can there be a physical quantity that has no unit and no dimensions?

Ans : yes, like strain.

Q9. Given relative error in the measurement of length is 0.02, what is the percentage error?

Ans: percentage error = 2 %

Q10. If g is the acceleration due to gravity and λ is wavelength, then which physical quantity does represented by $\sqrt{g\lambda}$.

Ans. Speed or velocity.

Short answer type questions (2 marks)

Q1.If heat dissipated in a resistance can be determined from the relation:

$H = I^2Rt$ joule , If the maximum error in the measurement of current, resistance and time are 2% ,1% , and 1% respectively, What would be the maximum error in the dissipated heat?

Ans: % error in heat dissipated is ±6 %.

Q2. Name any three physical quantities having the same dimensions and also give their dimensions.

Ans : Any group of physical quantities, like work , energy and torque and their dimensions [$ML^2 T^{-2}$].

Q3. In Van der Wall's equation ($P + a/V^2$)($V – b$) = RT, Determine the dimensions of a and b.

Ans : [a] = [$ML^5 T^{-2}$] and [b] = [$M^0L^3T^0$].

Q4. Give the limitations of dimensional analysis.

Ans ……

Q5. If $X= a+ bt^2$, where X is in meter and t is in second . find the unit of a and b?

Ans : unit of a is meter and unit of b is $m/sec^{2.}$

Q6. What is meant by significant figures ? State the rules for counting the number of significant figures in a measured quantity?

Ans. ……

Q7. Show that the maximum error in the quotient of two quantities is equal to the sum of their individual relative errors.

Ans : For $x = a/b$, $\Delta x/x = \pm (\Delta a/a + \Delta b/b)$

Q8. Deduce the dimensional formulae for the following physical quantities.

A) Gravitational constant.

B) Power

C) coefficient of viscosity

D) Surface tension.

Ans: (A) gravitational constant = [$M^{-1} L^3 T^{-2}$],

B) Power = [ML^2T^{-3}]

C) Coefficient of viscosity = [$ML^{-1} T^{-1}$]

D) Surface tension = [ML^0T^{-2}]

Q9. Name the four basic forces in nature. Arrange them in the order of their increasing strengths.

Ans : (i) Gravitational force (ii) Electromagnetic force

(iii) nuclear force (iv) Weak force

The relative strengths of these forces are

$Fg :Fw:Fe:Fs=1:10^{25}:10^{36}:10^{38}$.

Q10. Convert 1 Newton force in to Dyne.

Ans : $1N = 10^5$ Dyne.

Short answer type questions (3marks)

Q1. If E,M,J and G respectively denote energy, mass, angular momentum and gravitational constant, Calculate the dimensions of EJ^2/M^5G^2

Q2. The frequency ν of vibration of stretched string depends on its length L its mass per unit length m and the tension T in the string obtain dimensionally an expression for frequency ν.

Q3. What is meant by significant figures .State the rules for counting the number of significant figures in a measured quantity?

Q4. A physical quantity X is given by $X = A^2B^3/C\sqrt{D}$, If the percentage errors of measurement in A,B,C and D are 4%,2%,3% and 1% respectively, then calculate the % error in X.

Q5. If two resistors of resistance $R_1=(4 \pm 0.5)\Omega$ and $R_2=(16 \pm 0.5)\Omega$ are connected (1) In series and (2) Parallel . Find the equivalent resistance in each case with limits of % error.

Q6. The length of a rod measured in an experiment was found to be 2.48m, 2.46, 2.50m and 2.48m and 2.49m, Find the average length , the absolute error in each observation and % error.

Q7. A famous relation in physics relates moving mass m to the rest mass m_0 of a particle in terms of its speed v and the speed of the light c. A boy recalls the relation almost correctly but forgets where to put the constant c. He writes:

$$m = m_o / (1 – v^2)^{1/2}$$

Guess where to put the missing c.

Q8. A calorie is a unit of heat energy and it equals about 4.2 J, where 1 J = 4.2 kgm^2s^{-2}. Suppose we employ a system of units in which the unit of mass equals α kg, the unit of length equals β m, the units of time is Υ sec. show that a calorie has a magnitude $4.2\ \alpha^{-1}\ \beta^{-2}\ \Upsilon^2$ in terms of the new units.

Q9. In the formula $X = 3YZ^2$, X and Z have dimensions of capacitance and magnetic induction respectively, what are the dimensions of Y in MKS system?

Q10. In an experiment, on the measurement of g using a simple pendulum the time period was measured with an accuracy of 0.2 % while the length was measured with accuracy of 0.5%. Calculate the percentage error in the value of g.

Long answer question (5 marks)

Q1. Explain:

(i) Absolute error (iii) Mean absolute error

(ii) Relative error (iv) percentage error

(v) Random error

Q2. Convert:

(i) Gravitational constant (G) = 6.67×10^{-11} $Nm^2 kg^{-2}$ to $cm^3 g^{-1} s^{-2}$ (ii) The escape velocity v of a body depends on, the acceleration due to gravity 'g' of the planet and the radius R of the planet, Establish dimensionally for relation for the escape velocity.

Q3. Name the four basic forces in nature. Write a brief note of each, hence compare their strengths and ranges.

HOTs

Q1. What are the dimensions of $^1/u_0\epsilon_0$, where symbols have their usual meaning.

Ans : [$M^0 L^2 T^{-2}$]

Q2.What is the dimensions of $(^1/_2)\epsilon_0 E^2$, Where E electric field and ϵ_0 permittivity of free space.

Ans : [$M^1 L^{-1} T^{-2}$]

Q3. The pairs of physical quantities that have the same dimensions are:

(a) Reynolds's number and coefficient of friction,
(b) Curie and frequency of a light wave
(c) Latent heat and gravitational potential
(d) Planck's constant and torque.

Ans : (a), (b).

Q4. If L,C,R represent inductance , capacitance and resistance respectively, the combinations having dimensions of frequency are

(a) $^1/\sqrt{CL}$ (b) L/C (c) R/L (d) R/C

Ans : (a) and (c).

Q5. If the error in radius is 3%, what is error in volume of sphere?

(a) 3 % (b) 27 % (c) 9 % (d) 6 %

Ans : (c) 9%.

KINEMATICS

*rest and Motion are relative terms, nobody can exist in a state of absolute rest or of absolute motion.

*One dimensional motion:- The motion of an object is said to be one dimensional motion if only one out of three coordinates specifying the position of the object change with time. In such a motion an object move along a straight line path.

*Two dimensional motion:- The motion of an object is said to be two dimensional motion if two out of three coordinates specifying the position of the object change with time. In such motion the object moves in a plane.

*Three dimensional motion:- The motion is said to be three dimensional motion if all the three coordinates specifying the position of an object change with respect to time ,in such a motion an object moves in space.

*The magnitude of displacement is less than or equal to the actual distance travelled by the object in the given time interval.

Displacement ≤ Actual distance

*Speed:- It is rate of change of distance covered by the body with respect to time.

Speed = Distance travelled /time taken

Speed is a scalar quantity .Its unit is meter /sec. and dimensional formula is $[M^0L^1T^{-1}]$ .It is positive or zero but never negative.

*Uniform Speed:- If an object covers equal distances in equal intervals of time than the speed of the moving object is called uniform speed. In this type of motion, position – time graph is always a straight line.

*Instantaneous speed:-The speed of an object at any particular instant of time is called instantaneous speed. In this measurement, the time $\Delta t \rightarrow 0$.

When a body is moving with uniform speed its instantaneous speed = Average speed = uniform speed.

*Velocity:- The rate of change of position of an object in a particular direction with respect to time is called velocity. It is equal to the displacement covered by an object per unit time.

Velocity =Displacement /Time

Velocity is a vector quantity, its SI unit is meter per sec. Its dimensional formula is $[M^0L^1T^{-1}]$. It may be negative, positive or zero.

*When a body moves in a straight line then the average speed and average velocity are equal.

*Acceleration:- The rate of change of velocity of an object with respect to time is called its acceleration.

Acceleration = Change in velocity /time taken

It is a vector quantity, Its SI unit is meter/ $sec.^2$ and dimension is $[M^0L^1T^{-2}]$, It may be positive ,negative or zero.

*Positive Acceleration:- If the velocity of an object increases with time, its acceleration is positive .

*Negative Acceleration :-If the velocity of an object decreases with time, its acceleration is negative . The negative acceleration is also called retardation or deacceleration.

*Formulas of uniformly accelerated motion along straight line:-

For accelerated motion,	For deceleration motion
$V = u + at$	$v = u - at$
$S = ut + {}^1/_2\ at^2$	$S = ut - {}^1/_2\ at^2$
$V^2 = u^2 + 2as$	$V^2 = u^2 - 2as$
$Sn = u + {}^a/_2(2n- 1)$	$Sn = u - {}^a/_2(2n- 1)$

*Free fall :- In the absence of the air resistance all bodies fall with the same acceleration towards earth from a small height. This is called free fall. The acceleration with which a body falls is called gravitational acceleration (g).Its value is 9.8 m/sec^2.

*Relative Motion:- The rate of change of distance of one object with respect to the other is called relative velocity. The relative velocity of an object B with respect to the object A when both are in motion is the rate of change of position of object B with respect to the object A.

*Relative velocity of object A with respect to object B

$$\vec{V}_{AB} = \vec{V}_A - \vec{V}_B$$

When both objects are move in same direction, then the relative velocity of object B with respect to the object A

$$\vec{V}_{BA} = \vec{V}_B - \vec{V}_A$$

When the object B moves in opposite direction of object A .

$$\vec{V}_{BA} = \vec{V}_B + \vec{V}_A$$

When V_A and V_B are incident to each other at angle Θ

$$V_{AB} = (V^2_A + V^2_B - 2V_AV_BCos\ \Theta)^{1/2}$$

*Scalars :- The quantities which have magnitude only but no direction. For example : mass, length, time, speed , temperature etc.

*Vectors :- The quantities which have magnitude as well as direction and obeys vector laws of addition, multiplication etc.

For examples : Displacement, velocity, acceleration, force , momentum etc.

PHYSICS:

SECTION 1

Q.1. What is the dimensional formula of gravitational constant?
Q.2. Write down the limitations of dimensional analysis.
Q.3. Which of the following is the most precise device for measuring length :-
(a) a vernier calipers with 20 divisions on sliding scale. (b) a screw gauge of pitch 1 mm & 100 divisions on circular scale.(c) an optical instrument that can measure length to within a wavelength of light ?
Q.4. Subtract 0.2 kg from 34 kg with due regard to significant figures.
Q.5. Name same physical quantities that have same dimension.
Q.6. Name the physical quantities that have dimensional formula $[ML^{-1} T^{-2}]$
Q.7. Give two examples of dimension less variables.
Q.8. Given relative error in the measurement of length is .02, what is the percentage error?

SECTION 2

Q.1. Differentiate between fundamental and derived units. Give examples also.
Q.2. Ultrasonic sent by a SONAR return back to it after reflection from a rock under water after a time lapse of 2.2 second. If the velocity of ultrasonic in water is 1450 m/s, find the depth below the water surface.

Q.3. The length of a rod as measured in an experiment was found to be 2.48m,2.46m, 2.49m, 2.50m and 2.48m. Find the average length, absolute error and percentage error. Express the result with error limit.

Q.4. Write the dimensions of a and b in the relation: - $E = \frac{b-x^2}{at}$ Where E, x & t represent energy, distance &time respectively.
Q.5. Write the dimensions of a/b in the relation $F = ax + bt^2$ Where F is force, x is distance and t is time.
Q.6. Check the corrections of the relation. $P = hdg$ Where the letters have their usual meaning.
Q.7. Wavelength λ associated with a moving particle depends upon its mass m, its velocity v and Planck's constant. h. Find dimensionally the relation between these quantities.
Q.8. Derive by the method of dimensions, an expression for the energy of a body executing S.H.M., assuming that this energy depends upon; the mass (m), the frequency (v) and the amplitude of vibration (r).
Q.9. Consider a simple pendulum. The period of oscillation of simple pendulum depends on its length and acceleration due to gravity. Derive the expression for its time period.
Q.10. What is meant by significant figures? How are these counted?
Q.11. Define the terms (i) mean absolute error. (ii) Relative error and (iii) percentage error. How are they calculated?
Q.12. A physical quantity P is related to four observables a, b, c and d as follows:- $P = \frac{a^3b^2}{cd}$ The percentage errors of measurement in a, b, c and d are 1%, 3%, 4% and 2% resp. What is the percentage error in measurement of P?
Q.13. State the number of significant figures in
(i) 0.007 (ii) 2.64×10^{24} kg(iii) 0.2370 g (iv) 0.2300m(v) 86400 m
Q.14. Using dimensions convert (a) 1 newton into dynes (b) 1 erg into joules.
Q.15. Magnitude of force experienced by an object moving with speed v is given by $F = kv^2$. Find dimensions of k.

Q.16. The sides of a rectangle are (10.5 ± 0.2) cm and (5.2 ± 0.1) cm. Calculate its perimeter with error limits.
Q.17. The mass of a box measured by a grocer's balance is 2.3 kg. Two gold pieces 20.15 g and 20.17 g are added to the box.(i) What is the total mass of the box?(ii) The difference in masses of the pieces to correct significant figures.
Q.18. 5.74 g of a substance occupies 1.2 cm3. Express its density to correctsignificant figures.
Q.19. If displacement of a body $s = (200 \pm 5)$ m and time taken by it $t = (20 + 0.2)$ s, then find the percentage error in the calculation of velocity.
Q.20. If the error in measurement of mass of a body be 3% and in the measurement of velocity be 2%. What will be maximum possible error in calculation of kinetic energy.

BIOLOGY HOLIDAY HOMEWORK

CLASS XI

2024-2025

1. Complete Assignments of Chap-4 and Chap-14 (given) below in your Biology Notebook.

ASSIGNMENT I

CLASS:XI

SUBJECT:BIOLOGY

ANIMAL KINGDOM

Time: 50 minutes **M.M.:25**

1. Name the phylum in which the animals have incomplete digestive system i.e. have only a single opening to the outside of the body that serves as both mouthand anus. 1

2. Name the phylum in which the adults exhibit radial symmetry but larvae are bilaterally symmetrical. 1

3. An undifferentiated layer is present in between the ectoderm and endoderm of some animals. Name the layer and term used for organisation of such animals. 1

4. Define the phenomenon ‗metamerism'. 1

5. Givetwocharacteristicfeaturesofnotochordformedinsomeanimals. 1

6. Give two unique features found in animals which belong to phylum porifera. ½+½=1

7. Cnidarians exhibit two basic body forms called polyp and medusa. Write one characteristic of each form. Also give example of one animal which exhibit these forms. 1

8. Fill in the blanks spaces with appropriate words/terms. 1

S.No.	Phylum/Class	Excretory organ	Circulatory organ
1.	Arthropoda	(A) _____	Open
2.	Annelida	Nephridia	(B) _____
3.	(C) _____	Metanephridia	Open
4.	Amphibia	(D) _____	Closed

9. Differentiate between the following by giving characteristic feature of each: ½x4=2

   i. Urochordataand cephalochordate

   ii. Direct and indirect development

10. Give an example of each :

i. An animal with cnidoblasts

ii. An animal having canal system and spicules

iii. An animal having dry and cornified skin

iv. An animal with bioluminescence ½x4=2

11. Name the:

i. Excretory organs of animals of Phylum Arthropoda

ii. Second largest phylum

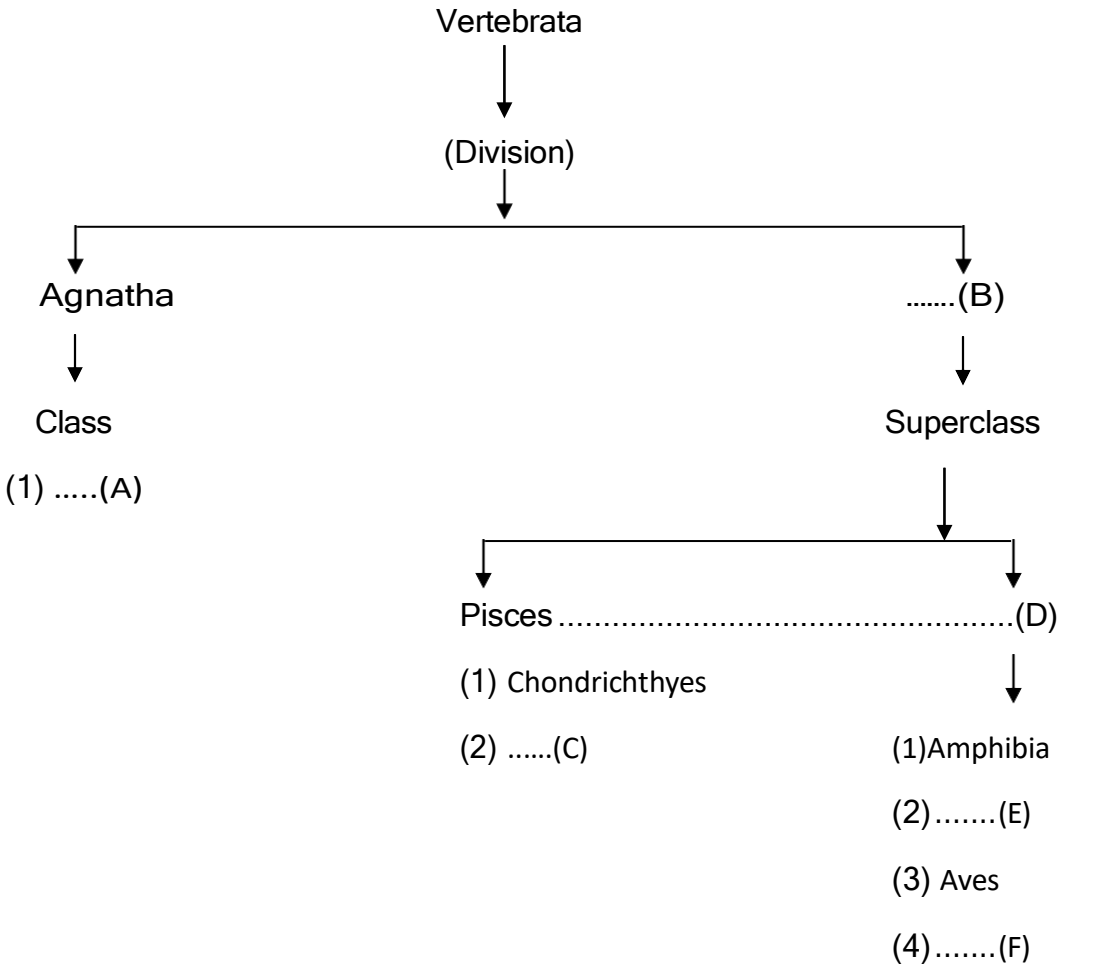
iii. Term used for warm blooded animals

iv. Additional chambers found in the digestive tract of aves.

12. List 6 characteristic features of animals belong to class mammalian. ½x6=3

13. Give three points of difference between chordate and non-chordata.

14. Complete the following flowchart with appropriate words:



½x6=3

ASSIGNMENT II
BREATHING AND EXCHANGE OF GASES

1. a)Namethe common passageforairandfood.

   b)Which organ prevent entering of food in trachea during swallowing of food?

2 Complete the analogy:

   Heart : Pericardium :: Lungs : _____

3. Blood analysis of a patient reveals on unusually high quantity of carboxyhaemoglobin content. The patient has been inhaling polluted air. Name the gas present in polluted air causing this problem

4. Name an instrument used to estimate volume of air in clinical assessment of pulmonary function.

5. Whichpart/organ of our body is called voice box?

6. A respiratory disorders named emphysema, in which alveolar walls are damaged. What is the major cause of the disease?

7. Complete the equations for the various pulmonary capacities:

   a) Expiratory capacity =+

   b) Vital capacity= + total volume+

8. What do you understand by partial pressure of gases? What type of blood contains PO_2 = 95 mmHg and pCO_2 = 40 mmHg. How it help in exchange of gases with tissues.

9. Explain the process of inspiration under normal conditions.

10. Name the stage of breathing in which relaxation of diaphragm occurs. Explain the others events occurring at this stage of breathing.

11. Name the respiratory organ in following organism:

   i. sponges and coelenterates

   ii. Earthworm

   iii. Frog

   iv. Most of aquatic arthropods and mollusks

12. Human beings have significant ability to maintain and moderate the respiratory rhythm to suit demand of body tissues. How is this process regulated?

13. What is oxygen dissociation curve? Mention four factors which causes shifting of this curve towards right side.

14. Oxygen and CO_2 are respiratory gases transported through blood. Explain transport of these gases in human beings.

Chemistry Holiday Homework

Class- XI

Solve NCERT questions in your chemistry notebook of the following chapters:

- Some Basic Concepts of Chemistry
- Chemical Bonding and Molecular Structure

HOLIDAY HOMEWORK

INFORMATICS PRACTICES (065)

Class – XI

(2024-25)

- Prepare a Power-Point Presentation (PPT) of 5-10 slides on the given topics.

Roll Number	Topic
1 – 6	Topic 1: Generation of Computers Topic 2: Artificial Intelligence
7 - 12	Topic 1: Von-Neumann Architecture of Computer Topic 2: Machine Learning
13 – 18	Topic 1: Types of input devices Topic 2: Natural Language Processing
19 – 24	Topic 1: Types of Output Devices Topic 2: Immersive Experience (AR, VR)
25– 30	Topic 1: Types of memory Topic 2: Robotics
31 - 36	Topic 1: Types of secondary storage devices Topic 2: Big data and its characteristics
37 – 42	Topic 1: Types of language translators Topic 2: Cloud computing and its services(SaaS, IaaS, PaaS)
43 - 48	Topic 1: Operating System and its function Topic 2: Internet of things(IoT)
49 – 54	Topic 1: System and Application Software Topic 2: Grid Computing
55 – 57 and New Students	Topic 1: Smart Cities Topic 2: Block Chain Technology

HOLIDAY HOMEWORK

COMPUTER SCIENCE (083)

Class – XI

(2024-25)

- Prepare a Power-Point Presentation (PPT) of 5-10 slides on the given topic.

Roll Number	Topic
1 - 5	Digital Footprint: Introduction and types.
6 - 10	Digital Society and Netizen: Netiquettes, communication Etiquettes, Social media etiquettes.
11 – 15	Data protection: Intellectual Property Right (copyright, Patent, trademark), violation of IPR (plagiarism, copyright infringement, trademark infringement).
16 - 20	Open source software and licensing (Creative Commons, GPL and Apache).
21 – 25	Cyber-crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, preventing cybercrime.
26 - 30	Malware: viruses, Trojans, adware.
31 – 35	Types of memory (primary, cache and secondary).
36 - 40	E-waste: hazards and management, Awareness about health concerns related to the usage of technology.
41 - 45	Technology and society: Gender and disability issues while teaching and using computers

- Do research and prepare a report of 1-2 pages on any one Python module/library used in gaming.

ECONOMICS
Class XI
Holiday Homework (2024-25)

CHAPTER:- 1 (INTRODUCTION)

Answer the following questions

Q1. ……. is the process through which consumers satisfy their wants by the use of goods & services.

a. Consumption b. Production
c. Distribution d. None of these

Q2. In …….. Sense, statistics means a collection of numerical facts.

a. Plural b. Qualitative
c. Singular d. None of these

Q3. ……is the root of all Economic Problems.

a. Consumption b. Distribution
c. Scarcity d. All of these

Q4. Which of the following is/are limitations of Statistics?

a. Statistics can lead to misleading conclusion b. Statistical data should be homogeneous
c. Both d. None of these

Q5. Statistics facilitates:

a. Comparison of Data b. Disposal of Data
c. Both d. None of these

Q6. A …… is a person who buys goods to satisfy his/her wants.

Q7. Read the following statement Assertion (A) and Reason (R). Choose one of the correct alternatives given below:

Assertion (A): Statistical results are correct only on an average due to the presence of personal bias.

Reason (R): Statistics helps in enhancing human knowledge by using its method of interpretation of Primary data.

a. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A)
b. Both Assertion (A) and Reason (R) are true, but Reason (R) is the correct explanation of Assertion (A)
c. Assertion(A) is true, but Reason (R) is false
d. Assertion (A) is false, but Reason (R) is true

Q8. Case based questions

Read the following case study paragraph carefully & answer the questions on the basis of the same.

Statistics in Plural sense refers to collection of numerical facts where as in singular sense, it refers to all Statistical methods. Statistics plays an important role in

economic policies as well as in economics laws like law of demand, law of supply. Government uses various statistical information related to macroeconomics issues like poverty, unemployment, etc. However it is open to criticism as it does not deal with individual facts and results are true only on an average. Various tools are used to analyse their different components like central tendency, measures of variations , correlations an index number.

i. Arrange the following stage of Statistics-

i. Organisation ii. Collection iii. Interpretation iv. Presentation

Choose from the options below

a. i., ii., iv., and iii. b. ii., i., iv. and iii.

c. Both d. None of these

ii. Which of the following is/are known as positional averages?

a. Mean b. Median

c. Mode d. Both b. and c.

iii. …… tool is used to calculate Mode graphically.

a. Histogram b. More than Ogive

c. Pie chart d. None of these

CHAPTER:- 2 (COLLECTION OF DATA)

Answer the following questions

Q1. Primary data are

a. Original data b. Already collected

c. Organished data d. None of these

Q2. Data collected on religion from the census reports are:

a. Secondary Data b. Primary Data

c. Sample Data d. Either (a) or (b)

Q3 Census method is

a. Economical

b. Suitable where the area of enquiry is wide

c. Suitable where units of the universe are homogeneous

d. Suitable where all units of the universe are not homogeneous

Q4. Data collected from 'The Times of India' is an example of:

a. Primary Data b. Secondary Data

c. Census d. None of these

Q5. The data collected on the height of a group of students after recording their heights with measuring tape are:

a. Primary Data b. Continuous Data

c. Discrete Data d. Secondary Data

Q6. From the following statement given in column I and column II, Choose the correct pair of Statement:

Column I	Column II
A. Census method	**1. 2011**
B. Sampling method	**2. 1950**
C. NSSO	**3. Covers every individual unit of the universe**
D. Latest Population census in India	**4. Selection of a representative sample**

A B C D
a. 3 4 2 1
c. 3 1 4 2

A B C D
b. 4 2 3 1
d. 2 1 3 4

CHAPTER:- 3 (ORGANISATION OF DATA)

Answer the following questions

Q1. Annual income of person is:
a. A continuous variable b. A discrete variable
c. An attribute d. Either (b) or (c)

Q2. Tally marks determine:
a. Class width b. Class boundary
c. Class limit d. Class frequency

Q3. The class interval of the continuous grouped data: 0-5; 6-10; 11-15; 16-20; 21-25 is:
a. 4 b. 5
c. 4.5 d. None of these

Q4. Choose the incorrect statement from the given below
a. In a continuous frequency distribution , class interval should be equal
b. In an exclusive continuous frequency distribution, upper limit of the class is excluded from the class
c. In an inclusive continuous frequency distribution, upper limit of the class is excluded from the class
d. In an open-ended continuous frequency distribution, extreme class limits are missing

Q5. The class Mark's of a distribution are 26,31,36,41,46 and 51. Then the first class-interval is:
a. 23.5-28.5 b. 23-28
c. 22.5-27.5 d. None of these

Q6. Drinking habit of a person is:
a. An attribute b. A discrete variable
c. A variable d. None of these

Q7. Frequency of a variable is always:
a. A fraction b. In percentage
c. An integer d. None of these

Q8. The value exactly at the middle of a class interval is called:
a. Class marks b. Mid-value

c. Class limit d. None of these

Q9. A continuous variable can take:

a. Integral values b. Discrete values

c. Both d. None of these

Q10. A…….. shows the distribution of different values of a variable in different classes along with their corresponding frequencies.

Q11. The classification of data for a discrete variable is known as…… .

Q12. Read the following statements Assertion (A) and Reason (R) Choose one of the correct alternatives given below:

Assertion (A): Classification facilitates grouping of data based upon similarities and dissimilarities

Reason (R): Classification enables a person to compare various forms of data.

a. Both Assertion (A) & Reason (R) are true and Reason (R) is the correct explanation of Assertion.

b. Both Assertion (A) & Reason (R) are true, but Reason (R) is not the correct explanation of Assertion.

c. Assertion (A) is true, but Reason (R) is false

d. Assertion (A) is false, but Reason (R) is true

Q13. Thirty students in an examination obtained marks as under. Prepare a discrete frequency distribution. (Use tally bars also)

15	**16**	**20**	**16**	**15**	**18**	**19**	**13**	**14**	**19**
13	**17**	**18**	**16**	**17**	**19**	**18**	**15**	**14**	**13**
16	**18**	**13**	**14**	**15**	**14**	**15**	**13**	**17**	**14**

Q14. Construct a frequency table of inclusive series with a class interval of 4.

20	**25**	**24**	**23**	**48**	**35**	**37**	**38**	**24**	**21**
23	**33**	**43**	**46**	**32**	**31**	**29**	**37**	**25**	**22**
38	**37**	**36**	**32**	**21**	**22**	**45**	**29**	**26**	**31**

Q15. Convert the following simple frequency distribution into cumulative frequency distribution by using ‘less than ‘as well as ‘more than’ method.

Marks	**0-10**	**10-20**	**20-30**	**30-40**	**40-50**	**50-60**
No. of students	**11**	**15**	**20**	**25**	**15**	**10**

Business Studies Holidays Homework

Std. 11th

1. Learn chapter 1 and chapter 2 till cooperative organisation

2. Do competency based questions and case studies questions from back exercise in fair copy.

HOLIDAY HOMEWORK

PHYSICAL EDUCATION CLASS –XI

PROJECT FILE

Select any one game from followings (Student Choice): -

Anyone one IOA recognized Sport/Game of choice.

The Content of the File as follows: -

1. Fitness tests administration. (SAI Khelo India Test)
2. Procedure for Asanas, Benefits & Contraindication for any two Asanas for each lifestyle disease.
3. Anyone one IOA recognized Sport/Game of choice. Labelled diagram of Field & Equipment. Also mention its Rules, Terminologies & Skills.