S.R.D.A.V PUBLIC SCHOOL SAHARANPUR(2020-21)

ASSIGNMENT CLASS XI SCIENCE

PHYSICS

Do the holiday home work in separate note book

- 1. Why the SI system be rational in nature ?
- 2. Name the unit used for measuring nuclear cross section area.
- 3. How is science different from technology?
- 4. Why was science called natural philosophy in earlier days ?
- 5. What are the similarities between science and arts ?
- 6. Name the Indian physicist , who was first awarded the Noble prize .
- 7. With which field work was the famous Indian physicist H.J. Bhabha associated ?
- 8. Who first discovered radioactivity?
- 9. What does the word LASER stand for ?
- 10. Name the physicist who first unified the electric and magnetic phenomena.
- 11. Name the scientist who received Noble Prize twice in physics.
- 12. Who first discovered neutrons?
- 13. Name the scientist who replaced circular orbits by elliptical orbits in the heliocentric theory of the sun.
- 14. State the law of conservation of linear momentum. Give an example for it.
- 15. X-ray were discovered by (a). Coolidge (b). Roentgen (c). Maxwell (d). Fermi
- 16. The man who is known as the Father of Experimental Physics is (a). Newton (b). Albert Einstein (c). Galileo (d). Rutherford.
- 17. Chander Shekher, an America based Indian scientist was awarded Noble Prize in physics on the subject concerning (a). Geophysics (b). Astronomy (c). Superconductivity (d). Laser Technology
- 18. The value of universal gravitational constant G was first experimentally determined by(a). Newton (b). Galileo (c). Kelvin (d). Cavendish
- 19. Charge on an electron was first determined by : (a). Millikan (b) Bohr (c) Thomson(d).Rutherford
- 20. Which of the following is wrongly matched ? (a). Barometer- Pressure (b). Lactometer- Milk(c). Coulomb"s law charges (d). Humidity- Calorimeter
- 21. C.V.Raman got Noble prize for his experiment on (a). dispersion of light (b). reflection of light (c). deflection of light (d). scattering of light.
- 22. The idea of calculus was given by (a). Newton (b). Galileo (c). Kelvin (d). Marconi
- 23. The book "Pisces of Physics" has been written by (a) Newton (b)Galileo(c) Einstein(d) Cavendish
- 24. The country which awards the prestigious Noble prize (a). U.S.A (b).U.K (c). Sweden(d). France
- 25. A supposition that is put forward as a probable solution to a natural phenomenon is called a(a). law(b). theory(c). relief(d). hypothesis
- 26. Which of the following represent the correct dimensions of the coefficient of viscosity ? (a). $[M^1L^{-1}T^{-2}]$ (b). $[M^1L^{-2}T^{-2}]$ (c). $[M^1L^{-1}T^{-1}]$ (d). $[M^1L^1T^{-1}]$
- 27. Identify the pair whose dimensions are equal. (a). torque and work (b). stress and energy (c). force and stress (d). force and work.
- 28. Dimensions of bulk modulus are (a). $[M^{1}L^{-1}T^{-2}]$ (b). $[M^{1}L^{-1}T^{-2}]$ (c). $[M^{1}L^{-1}T^{-1}]$ (d). $[M^{1}L^{2}T^{-2}]$
- 29. The dimensions of strain are (a). [L] (b). $[L^2]$ (c). Dimensionless (d). $[M^1L^{-1}T^{-2}]$

30. The dimensions of Planck''s constant are (a). $[M^2L^1T^{-2}]$ (b). $[M^1L^{-2}T^{-2}]$ (c). $[M^1L^{-1}T^{-1}]$ (d). $[M^1L^2T^{-1}]$

- (a). $[M^1 L^2 T^{-3} A^{-1}]$ (b). $[M^1 L^2 T^{-3} A^{-2}]$ 31. The dimension of electrical resistance are (c). $[M^1L^3T^3A^{-2}]$ (d). $[M^1L^{-1}T^3A^2]$
- 32. The displacement x of a particle at time t along a straight line is given by $x = \alpha \beta t + \gamma t^2$. Find the acceleration of the particle.
- 33. A jet plane starts from rest with an acceleration of 3 m/s² and makes a run for 35 s before taking off. What is the minimum length of the runway and what is the velocity of the jet at take off?
- 34. A body covers 12 m in 2nd second and 20 m in 4th second. How much distance will it cover in 4 seconds after the 5th second ?
- 35. A bullet travelling with a velocity of 16 m/s penetrates a tree trunk and comes to rest in 0.4 m. find the time taken during the retardation.
- 36. A ball thrown vertically upwards with a speed of 19.6 m/s from the top of tower returns to the earth in 6 s. Find the height of the tower.
- 37. A stone falls from a cliff and travels 24.5 m in the last second before it reaches the ground at the foot of the cliff. Find the height of the cliff.
- 38. If the value of atmospheric pressure is 10⁶ dyne/cm², find its value in si units.
- 39. Find the value of 100 J on a system which has 20 cm , 250 g and half minute as fundamental units of length, mass and time.
- 40. Check the dimensional consistency of the following equations :
 - (a). de –Broglie wavelength, $\lambda = \frac{h}{mv}$ (b). Escape velocity, $v = \sqrt{\frac{2GM}{R}}$
- 41. Time period of an oscillating drop of radius r , density ρ and surface tension S is : T = K $\sqrt{\frac{\rho r^3}{s}}$ check the correctness of the relation.
- 42. The frequency v of an oscillating drop may depend upon radius r of the drop, density ρ of the liquid and surface tension S of the liquid. Establish an expression for v dimensionally.
- 43. A body of mass m hung at one end of the spring executes SHM. Prove that the relation T = $2\pi m/k$ is incorrect, where k is the force constant of the spring. Also derive the correct relation.
- 44. A body of mass m is moving in a circle of radius r with angular velocity ω . Find expression for centripetal force acting on it by the method of dimensions.
- 45. 5.74 g of a substance occupies 1.2 cm³. Express its density keeping significant figures in view.
- 46. The length of a rod as measured in an experiment was found to be 2.48 m , 2.46m , 2.49 m , 2.50 m , and 2.48 m. find the average length , the absolute error in each observation and the percentage error.
- 47. The length, breadth and height of a rectangular block of wood were measured to be : I = $12.13 \pm 0.02 \ cm, \ b = 8.16 \pm 0.01 \ cm$, h = $3.46 \pm 0.01 \ cm$. Determine the percentage error in the volume of the block.
- 48. Derive equation of motion by calculus and graphical method.

HOLIDAYS ASSIGNMENT(CLASS XI)

SUBJECT – CHEMISTRY , SUBJECT TEACHER – SACHIN JAIN

Q1:-state law of multiple proportion.

Q2:- What is the difference between Molarity & molality? Out of molality & molarity which is preffered & why?

Q3:-Define limiting reagent & 1 mole.

Q4:- Calculate the total number of electrons present in 1.4gm of nitrogen gas. (ans= 4.21 X 10²³ electrons)

Q5:- A chemical compound is found to have the following composition:

C = 19.57%, Fe = 15.2%, N= 22.83%, K= 42.39%

Calculate Empirical formula & molecular formula of the compound, if its molecular mass is 368. (Ans:K4FeC6N6)

Q6:- CaCO3 reacts with Aq. HCl according to the following reaction:

 $CaCO3 + 2HCI \rightarrow CaCl2 + H2O + CO2$

What mass of CaCO3 is required to react completely with 25 ml of 0.75M HCl? ANS:- 0.938gm

Q7:- The density of 3 molal solution of NaOH is 1.10 gm/ml. Calculate the molarity of solution. **(Ans:-2.97M)**

Q8:- In the reaction 2A +4B \rightarrow 3C +4D,

When 5 moles of A react with 6 moles of B, then

(i)Which is the limiting reagent? (ii) Calculate the amount of C formed. (Ans:- (i) B (ii)4.5moles)

Q9:- Define the following terms(i) photoelectric effect (ii) threshold frequency (iii) work function .

Q10:- A 100watt bulb emits monochromatic light of wavelength 400nm. Calculate the number of photons emitted per second by the bulb.(Ans= 2.012 X10²⁰)

Q11:-Give the difference between emission spectrum & absorption spectrum.

Q12:-Calculate the wavelength of the spectral line in Lyman series corresponding to n_2 =3. (ans=102.6 nm)

Q13:- Give the postulates of Bohr's model & its limitations.

Q14:-Give the difference between Electromagnetic waves & matter waves.

Calculate de Broglie wavelength of an electron moving with 1% of the speed of light.(Ans:-2.4 A⁰)

Summer vacation assignment

Class -XI

Subject-Biology

Write a short note on the following-

- 1.Coronavirus
- 2. COVID-19
- 3. Pandemic
- 4. Epidemic
- 5. Endemic
- 6. Quarantine
- 7. Isolation
- 8. Incubation period
- 9. Communicability of disease
- 10. Hand washing technique
- 11. Importance of sanitation
- 12. Role of wearing Mask, Gloves, PPE kit in Covid-19
- 13. Social distancing
- 14. Community spread

Please include recent facts and updates from reliable source.

CLASS XI

MATHS

1.	Find the sum to n terms of the following series:			
	$\frac{1}{1 \times 2} + \frac{1}{2 \times 3} + \frac{1}{3 \times 4} + \dots$ [NCT 2	012, 201,		
2.	If the sum of n terms of an A.P. is $3n^2 + 5n$ and its mth term is 164, fir	the		
3.	This the sum of the sequence, (, (), (), ((), ()), () ()	NCT 201 NCT 201		
4.	The sum of first three terms of a G.P. is $\frac{39}{10}$ and their product is 1. Find the c			
	ratio and the terms.	LW(
5.	If $\frac{a^{n+1}+b^{n+1}}{a^n+b^n}$ is the A.M. between a and b, find the value of n.	(M		
6.	they form a C.P. Find the numbers			
7.	Insert five numbers between 8 and 26 such that the resulting seque	D		
8.	The difference between any two consecutive interior angles of a po smallest angle is 120°, find number of sides of the polygon.	lygon is [N		
9.	Let S be the sum, P the product and R the sum of reciprocals of n ter that $P^2R^n = S^n$.	ms of a ([N		
10.	If a, b, c, d are in G.P., prove that $a^n + b^n$, $b^n + c^n$, $c^n + d^n$ are in G.I.			
11.	If pth, qth and rth terms of a G.P. are a, b and c respectively, prove			
	a^{q-r} . b^{r-p} . $c^{p-q} = 1$.	[2		
12.	Find the sum to n terms of the sequence 8, 88, 888, 8888,	(7		
13.	Find the sum to n terms of the series: $0.5 + 0.55 + 0.555 + \dots$	[7		
14.	Find the sum to n terms of the following series: $3 \times 8 + 6 \times 11 + 9 \times 14 + \cdots$	L		
	0 × 0 + 0 × 11 + 9 × 14 +	14		

nots and Series 261 If a, b, c and d are in G.P., show that $(a^2 + b^2 + c^2)(b^2 + c^2 + d^2) = (ab + bc + cd)^2$. INCT 2015] show that $\frac{1 \times 2^2 + 2 \times 3^2 + \dots + n \times (n+1)^2}{1^2 \times 2 + 2^2 \times 3 + \dots + n^2 \times (n+1)} = \frac{3n+5}{3n+1}$ [NCT 2010, 2015] If a and b are the roots of the equation $x^2 - 3x + p = 0$ and c and d are the roots of 5. If a and q = 0, where a, b, c, d form a G.P., prove that (q + p) : (q - p) = 17 : 15. [NCT 2014] 5. If $|a|, |b| < 1, x = 1 + a + a^2 + a^3 + \dots \infty$ and $y = 1 + b + b^2 + b^3 + \dots \infty$, then show that $1 + ab + a^2b^2 + \dots = \frac{xy}{x + y - 1}$ [NCT 2014] 8. The ratio of the A.M. and G.M. of two positive numbers a and b, is m : n. Show that $a:b=(m+\sqrt{m^2-n^2}):(m-\sqrt{m^2-n^2})$ [KVS 2008, NCT 2009, 2013] f_r If p, q, r are in G.P. and the equation $px^2 + 2qx + r = 0$ and $dx^2 + 2ex + f = 0$ have a common root, then show that $\frac{d}{p}, \frac{e}{q}, \frac{f}{r}$ are in A.P. [KVS 2009]

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In an increasing G.P, the sum of the first and last terms is 66 and the product of the second and second last terms is 128. If the sum of the series is 126, find the number of 8. [KVS 2009] terms of the series.

SET-II

IMPORTANT QUESTIONS

Very Short Answers/Short Answer Type Questions (1 Mark/2 Marks)

- Write the value of the tenth term of the sequence: 1(1)+2(1+2)+3(1+2+3)+...
- Find the first three terms of the sequence whose n^{th} term is $a_n = \frac{n}{n^2 + 1}$. 2.
- Find the sixth term of the sequence whose first three terms are 3, 3, 6 and each term 3. after the second is the sum of the two terms preceeding it.
- How many terms are there in the A.P. 10, 13, 16, ..., 49? 4.
- The n^{th} term of A.P. is 3n + 1. Find the 6^{th} term. 5.
- Find the sum of 20 terms of the sequence 1, 3, 5,
- Which term of the series 4 + 11 + 18 + … is 158?
- How many two-digit numbers are divisible by 7?
- Find the sum of 23 terms of the sequence 5, 9, 13, 17, 9.
- Find the A.M. between 5 and 21. 10.
- Three numbers x, y, z are in A.P. as well as in G.P. What can you say about the numbers? 11.
- Find the ninth term of the sequence $1, -\frac{1}{2}, \frac{1}{4}, -\frac{1}{8}$ 12.
- Find sum of first 100 natural numbers.
- Find the sum: 3² + 6² + 9² + ... + 30². The G.M. between two positive numbers is 16. If one number is 32, find the other 15. number.

Long Answer-I Type Questions (4 Marks)

The fourth term of an A.P. is equal to three times the first term and the seventh I. exceeds twice the third term by 1, Find the first term and the common difference

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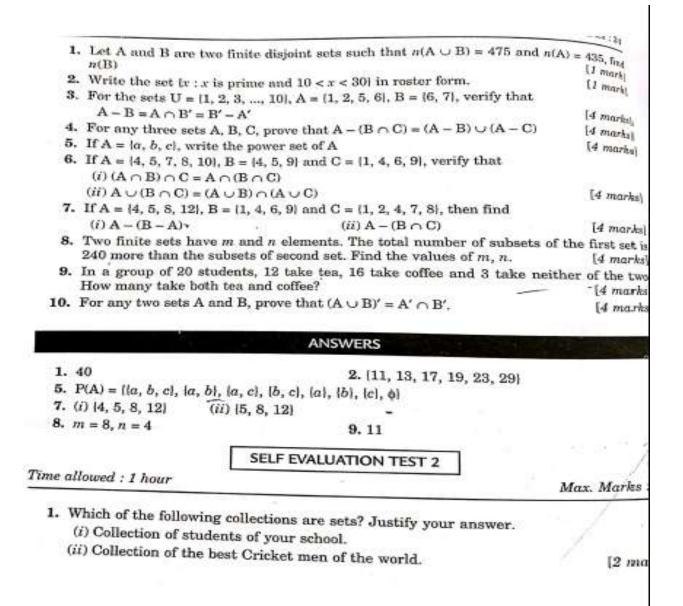
- The 9th term of an A.P. is zero. Prove that 29th term is twice the 19th term, 2.
- In an A.P., it is given that $a_{p+1} = 2a_{q+1}$, prove that $a_{3p+1} = 2a_{p+q+1}$. 3.
- The sum of first three consecutive terms of an A.P. is 9 and the sum of their squares is 4. 35. Find a_.
- Find the sum of all integers which are divisible by 7 and lying between 50 and 500
- If the sum of a certain number of terms of the A.P. 25, 22, 19, ... is 116, find the law INCERT term.
- Sum of the first p, q and r terms of an A.P. are a, b and c, respectively. Prove that 7.

$$\frac{a}{p}(q-r) + \frac{a}{q}(r-p) + \frac{c}{r}(p-q) = 0.$$
 [NCERT]

- 8. A man starts repaying a loan as first installment of \$ 100. If he increases the installment by ₹ 5 every month, what amount he will pay in the 30th installment? NCERT
- If a, b, c are in G.P. and $a^{1/x} = b^{1/y} = c^{1/z}$, prove that x, y, z are in A.P. 9.
- The first term of a G.P. is 1. The sum of the third and fifth terms is 90. Find the 10. common ratio of the G.P.
- How many terms of the geometric series 1 + 4 + 16 + 64 + ... will make the sum 5461 11.
- Prove that $6^{1/2} \cdot 6^{1/4} \cdot 6^{1/8} \dots \infty = 6$. 12.
- Use geometric series to express 0.5555 ... i.e., 0.5 as rational number. 13.
- Solve for x, 1 + 6 + 11 + 16 + + x = 148. 14.
- Find the sum to n terms of the series, $1^2 + 3^2 + 5^2 + \dots$ 15.

Long Answer-II Type Questions (6 Marks)

- 1. Between 1 and 31, m numbers have been inserted in such a way that the resulting sequence is an A.P. and the ratio of 7th and (m-1)th numbers is 5 : 9. Find the value [NCER of m.
- If the sum of first m terms of an A.P. is equal to the sum of the next p terms and al
- to the sum of next q terms, prove that $(m+p)\left(\frac{1}{m}-\frac{1}{q}\right) = (m+q)\left(\frac{1}{m}-\frac{1}{p}\right)$.
- 3. If A and G be A.M. and G.M., respectively between two positive numbers, prove the the numbers are $A \pm \sqrt{(A+G)(A-G)}$.



2. Which of the following sets are o	mpty sets?	
(i) $(x : x \in \mathbb{R}, x^2 + 3 = 0)$		1000000
(ii) $(x : x is an even prime numb$	er)	[2 marks]
3. Write the following subsets of R	as intervals:	
(i) $(x : x \in \mathbb{R}, -4 < x \le 6]$	(ii) $\{x : x \in \mathbb{R}, 12 < x < -10\}$	
(<i>iii</i>) $ x : x \in \mathbb{R}, 0 \le x < 7$	$(iv) x; x \in \mathbb{R}, 3 \le x \le 4 $	[4 marks]
4. Let U = {1, 2, 3, 4, 5, 6, 7, 8, 9},	A = {2, 4, 6, 8} and B = {2, 3, 5, 7}, then ver	rify that
(i) $(A \cup B)' = A' \cap B'$	(ii) $(A \cap B)' = A' \cup B'$	[4 marks]
5. For any two sets A and B, prove	that $A \cup B = A \cap B$ if and only if $A = B$.	[4 marks]
6. If $a \in \mathbb{N}$ such that $a\mathbb{N} = lax : x \in \mathbb{N}$	[4 marks]	
	k Hindi, 25 speak both Hindi and English	and all speak
at least one of the two language	s . How many people speak only English b	ut not Hindi?

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How many people speak English? [4 marks] 8. If A, B, C are three sets and U is the universal set such that n(U) = 700, n(A) = 200, n(B) = 300 and $n(A \cap B) = 100$. Find $n(A' \cap B')$. [4 marks]

ANSWERS

- 1. (i) is a set (ii) not a set because the elements are not well defined.
- 2. (i) an empty set (ii) not an empty set.
- 3. (i) (-4, 6] (ii) (-12, -10) (iii) [0, 7) (iv) [3, 4]
- 6. 21N
- 7. 15, 40
- 9. (i) 11 (ii) 4 (iii) 44.

-MULTIPLE CHOICE QUESTIONS*

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1. If the number	er of non-empty sub	sets of a set is 4095,	, the number of ele	ments of the set is
(a) 10	(b) 11	(c) 12	(d) 13	(e) 14
2. If $A = \{4^n - 3\}$	$3n-1:n \in \mathbb{N}$ and	$\mathbf{B} = \{9n - 9 : n \in \mathbf{N}\}$	$A \cup B$ is	
(a) B	(b) A	(c) N	$(d) \{0\}$	(e) A ∩ B
	are two sets such umber of subsets of		(A - B) = 5 and r	$a(A \cup B) = 23$, the
(a) 128	(b) 64	(c) 256	(d) 1024	(e) 16
	re two well define d P \cup Q has 108 el			ents, $P \cap Q$ has 30
(a) 18	(b) 48	(c) 90	(d) 30	(e) 38
113 passed a two of the s failed in all	subject B and 117	passed subject C. 20 students passe number of studer	But 60 of the stu ed all the three. I ats is	nts passed subject A dents passed exactly Further 70 student

(a) 300 (b) 260 (c) 330 (d) 400 (e) 500

Class-XI

English

Q1.As the President of the Literary Club of your school, you are organizing a programme for Public Speaking for the students of classes XI &XII of your school. As a part of this programme , you will be inviting a few television anchors .write a notice giving all the details of it to be displayed on your school notice-board in not more than 50 words.

Q2.Design a poster to launch a 'Tree plantation Campaign' in the area surrounding your school.Mention date, time &venue.

Q3.You are Uma/Uday, the student Leader of Ramanujan Public sch. Chennai.During the summer vacations your school is planning an educationa tour to Surat covering visits to the Thermal Power Plant and a few factories there.Write a letter to National Travel Agency at 2, Pantheon Road , Chennai-27 enquiring about the places, charges, facilities & other relevant details.

Q4.Write an article on 'What impact is the Coronavirus [covid-19] having on the globe.'[150-200 words]

Q5.Collect pictures related with the life of King Tutankhamun & make a collage[.Lesson-'Discovering Tut :the Saga Continues] The size of the sheet for collage is your choice.

ग्रीष्मावकाश गृहकार्य (हिंंदी)

कक्षा - XI

- * कक्षा में करवाया गया समस्त कार्य याद करना है |
- * परियोजना बनाने के लिए आपके नाम तथा विषय नीचे सूची में दिए गए हैं | आप अपने नाम तथा विषय के अनुसार ग्रीष्मावकाश में तैयार करना है |

हिंंदी परियोजना सूची

कक्षा – xı

S.NO.	छात्र का नाम	छात्र का नाम	छात्र का नाम	परियोजना विषय
	विज्ञान वर्ग	वाणिज्य वर्ग	मानविकी वर्ग	
1				कबीर दास
	Ankit Tiwari	Devansh Saini	Aditi Chaudhary	
2				तुलसीदास
	Anirudh Tomar	Rohit Dhiman	Abhinav Gupta	
3				हरिवंशराय बच्चन
	Krishan Kant	Om Garg	Ashish Kumar	
4				जनसंचार माध्यम
	Ritik Gautam	Arjun Pundir	Divyaanshi	
5				मीरा बाई
	Prgya Singh		Harshit Chaudhary	
6				विज्ञापन की दुनिया
	Ritik Gautam		Himanshi Saini	
7				वैश्विक महामारी `कोरोना′
	Nidhi		Malika Duggal	
8				देश की जीवन रेखाएँ
			Muskan Khan	नदियाँ′
9				लतामंगेशकर
			Niyashree Sharma	
10				मोबाइल आज की आधारभूत
			Raghuvansh	आवश्यकता

11			महादेवी वर्मा
		Vishal Kashyap	
12			पत्रकारिता के विभिन्न आयाम
		Uday Panwar	
13			रामचरितमानस
		Tarun Chauhan	
14			हिंदी काव्य का इतिहास
15			हिंंदी गद्य साहित्य का
			इतिहास
16			कबीरदास
17			मालिक मुहम्मद `जायसी <i>'</i>
<u> </u>		<u> </u>	

नोट :- परियोजना बनाने के लिए शब्द सीमा 1000शब्द है । सम्बन्धित तस्वीर भी चिपकानी है |

CLASS XI

INFORMATION PRACTICES

- 1. To create a database
- 2. To create student table with the student id, class, section, gender, name, dob, and marks as attributes where the student id is the primary key.
- 3. To insert the details of at least 10 student in the above table.
- 4. To delete the details of a particular student in the above table.
- 5. To increase marks by 5% for those students who have Rno more than 20.
- 6. To display the entire content of table.
- 7. To display Rno, Name and Marks of those students who are scoring marks more than 50.
- 8. To add a new column email in the above table with appropriate data type.
- 9. To add the email ids of each student in the previously created email column.
- 10. To display the information all the students, whose name starts with 'AN' (Examples:

ANAND, ANGAD,..)

- 11. To display Rno, Name, DOB of those students who are born between '2005- 01-01' and '2005-12-31'.
- 12. To display Rno, Name, DOB, Marks, Email of those male students in ascending order of their names.
- 13. To display Rno, Gender, Name, DOB, Marks, Email in descending order of their marks.
- 14. To display the unique section available in the table.

PHYSICAL EDUCATION CLASS-XI

HOLIDAY HOMEWORK

- 1. Explain coaching career in detail.
- 2. What is the importance of physical education programs in modern times?
- 3. What is the main role of Indian Olympic association?
- 4. Write a paragraph on the Olympic creed.
- 5. What is the role of international Olympic committee?
- 6. Explain the concept of wellness.
- 7. What do you mean by lifestyle?
- 8. Why do CWSN need specialized trainers?
- 9. What is the role of Paralympics?
- 10. What are the main objectives of physical education?