

**Vacation Homework (2019-2020)**

**Class XI**

<b>Subject</b>	<b>Homework</b>
Economics	To prepare a report on impact of 'Demonetisation' on Indian Economy. Or To prepare a report on impact of 'Make In India' on Indian Economy.
Accountancy	1. Assignment: To solve practical problems questions of chapter-5 Accounting Equation 2. Project Work: Make any twenty journal entries and post in to the ledger.
Business Studies	<p><b>A.</b> Read the case studies of chapter -1. Nature and Purpose of Business 2. Forms of Business Organisation</p> <p><b>B.</b> Project Work-Visit any one of the following field and prepare a report.</p> <ol style="list-style-type: none"> <li>1. Visit to an Industry</li> <li>2. Visit to a Wholesale market</li> <li>3. Visit to a Departmental Store</li> <li>4. Visit to a Mall</li> </ol>
English Core	<p><b>A. Practice Question - For each type of writing task</b></p> <p><b>(a) Notice Writing</b></p> <ol style="list-style-type: none"> <li>1. You are Shailendra Tomar, Sports In-charge of Army Public School, Pune. Draft a notice informing students of an Inter-house Basketball Match, giving necessary details in not more than 50 words.</li> <li>2. You are Neha Yadav, Activity In-charge of Delhi Public School, Kanpur. Your school is collecting material to be sent to flood victims in Odisha. Draft a suitable notice in not more than 50 words.</li> <li>3. You are the Cultural Secretary of your school. Draft a notice regarding an Inter School Dance Competition asking interested students to give their names. Give the necessary details regarding the competition in not more than 50 words.</li> </ol> <p><b>(b) Letter to the Editor</b></p> <ol style="list-style-type: none"> <li>1. You are Parul/Praveen Tomar, a class XII student at Bright Public School, Tekanpur. You are concerned about the frequent changes in the CBSE Syllabus and also the pressure of both syllabus and competitive exams on students. Write a letter to the Editor of The Hindu, expressing your views in about 250 words.</li> <li>2. You are Aruna/Arjun Singh. You were supposed to go to Chennai for an exam but missed your exam as the train was delayed by more than eight hours. You are upset about this. Write a letter to the Editor of The Hindustan Times, complaining about delays in the train arrival and departure affecting the public in about 250 words.</li> </ol> <p><b>Note:</b> To be done in the note book</p> <p><b>B. Prepare to speak for a minute on any topic related to a theme in the chapters covered so far.</b></p>

Chemistry	<p><b>Investigatory Projects-</b> (Note: Any one out of these eight investigatory project can be chosen and can be completed during summer vacation.)</p> <ol style="list-style-type: none"> <li>1. Checking the bacterial contamination in drinking water by testing sulphide ion.</li> <li>2. Study of the methods of purification of water.</li> <li>3. Testing the hardness presence of Iron, Fluoride, chloride etc. Depending upon the regional variation in drinking water and study of causes of presence of these ions above permissible limit (if any)</li> <li>4. Investigation of the foaming capacity of different washing soaps and the effect of addition of sodium carbonate on it.</li> <li>5. Study the acidity of different samples of tea leaves.</li> <li>6. Determination of the rate of evaporation of different liquids.</li> <li>7. Study the effect of acid and bases on the tensile strength of fibres.</li> <li>8. Study of acidity of fruit and vegetable juices.</li> </ol>
Physics	Do Assignment No.1
Biology	To collect the plants of different categories and prepare a herbarium file.
Maths	Do Assignment No.1
History	<ol style="list-style-type: none"> <li>1. Write the summary of chapter 1 to 6</li> <li>2. Prepare a PPT on any one chapter 1 to 6 (to be presented in the class)</li> </ol>
Political Science	<p>Prepare a PPT on any one of the following topics.</p> <ol style="list-style-type: none"> <li>1. The framing of Indian Constitution</li> <li>2. The Three Organs of Government</li> <li>3. Citizenship</li> <li>4. Nationalism</li> <li>5. Social Justice</li> </ol>
Hindi	<ol style="list-style-type: none"> <li>1. महिला सशक्तिकरण - अर्थ, भारत में महिला सशक्तिकरण महिला सशक्तिकरण योजना, उद्देश्य, महिला सशक्तिकरण में संयुक्त राष्ट्र की भूमिका। महिला सशक्तिकरण का महत्व, महिला आरक्षण बिल।</li> <li>2. भारतीय लोकतंत्र में मीडिया की भूमिका अथवा नजबूत लोकतंत्र के लिए मीडिया का उत्तरदायित्व।</li> </ol>

**Note:** There will be no Class Tests. Quarterly Examination will be held as scheduled from July 24, 2019 (Date sheet given on Almanac page 136)

- **All the H.W. Assignment Sheets can be downloaded from the school website May 8 onwards.**
- School re-opens on June 24, 2019 (Monday) Timing: Message will be sent.



# BHARTIYAM VIDYA NIKETAN

Vacation Assignment-1

Subject :- Physics

Class :- XI

- Q1.** A new unit of length is chosen such that the speed of light in vacuum is unity. What is the distance between the sun and the earth in terms of the new unit if light takes 8 min and 20 s to cover this distance.
- Q2.** Name some physical quantities that have same dimension.
- Q3.** Name the physical quantities that have dimensional formula  $[ML^{-1}T^{-2}]$ .
- Q4.** Give two examples of dimension less variables.
- Q5.** State the number of significant figures in  
(i) 0.007 m<sup>2</sup>      (ii)  $2.64 \times 10^{24}$  kg      (iii) 0.2370 g cm<sup>-3</sup>      (iv) 0.2300 m  
(v) 86400      (vi) 86400 m
- Q6.** Given relative error in the measurement of length is .02, what is the percentage error?
- Q7.** Deduce dimensional formulae of-  
(i) Boltzmann's constant  
(ii) Mechanical equivalent of heat
- Q8.** Using dimensions convert (a) 1 newton into dynes (b) 1 erg into joules.
- Q9.** A book with printing error contains four different formulae for displacement. Choose the correct formula/formulae  
(i)  $y = a \sin \frac{2\pi}{T} t$       (ii)  $y = a \sin vt$       (iii)  $y = \frac{a}{T} \sin \left( \frac{t}{a} \right)$   
(iv)  $y = \frac{a}{T} \left( \sin \frac{2\pi}{T} t + \cos \frac{2\pi}{T} t \right)$
- Q10.** Give limitations of dimensional analysis.
- Q11.** Give the name<sup>S</sup> of six Indian Scientists and their discoveries.
- Q12.** Name the discoveries made by the following scientists:  
(i) Faraday      (ii) Chadwick      (iii) Hubble      (iv) Maxwell  
(v) Newton      (vi) Bohr

**Q13.** Name the scientific principle on which the following technology is based.

- (i) Steam engine    (ii) Laser    (iii) Aeroplane    (iv) Rocket propulsion  
(v) Radio and T.V.    (vi) Production of Ultra high magnetic field

**Q14.** Describe the Parallax Method for the determination of the distance of a nearby star from the earth.

**Q15.** Define the following units

- (i) Light year    (ii) Parsec    (iii) Astronomical unit (Au)

**Q16.** Name the four basic forces in nature. Write a brief note of each. Hence compare their strengths and ranges.

**Q17.** Distinguish between the terms precision and accuracy of a measurement.

**Q18.** Explain

- (i) absolute    (ii) mean absolute error    (iii) relative error  
(iv) percentage error    (v) random error

**Q19.** The sides of a triangle are  $(10.5 \pm 0.2)$  cm and  $(5.2 \pm 0.1)$  cm. Calculate its perimeter with error limits.

**Q20.** 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.

**Q21.** 5.74 g of a substance occupies  $1.2 \text{ cm}^3$ . Express its density to correct significant figures.

**Q22.** If displacement of a body  $s = (200 \pm 5)\text{m}$  and time taken by it  $t = (20 \pm 0.2)\text{s}$ , then find the percentage error in the calculation of velocity.

**Q23.** 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?



# BHARTIYAM VIDYA NIKETAN

Holiday Assignment-1

Class - XI

Subject : Maths

Q1.  $2i^2 + 6i^3 + 3i^{16} - 6i^{19} + 4i^{25}$

Q2. Prove that

(i)  $i^{998} = -1$       (ii)  $1 + i^{10} + i^{100} + i^{1000} = 2$

Q3.  $i^{4x+3} = -i$

Q4.  $i^n + i^{n-1} + i^{n-2} + i^{n-3} = 0 \quad \forall n \in \mathbb{N}$

Q5. Find the value of x and y

(i)  $3x + (2x - y)i = 6 - 3i$

Q6. Write the following number in the form of  $x + iy$ .

(i)  $Z = \frac{2+i}{(1+i)(1-2i)}$

Q7. Prove that  $\left(\frac{1+i}{1-i}\right)^{200} = 1$

Q8. Find square root of  $3 - 4i$ .

Q9. Find the square root  $\left(\frac{2+3i}{5-4i} + \frac{2-3i}{5+4i}\right)$

Q10. Find the cube root of  $-27$ .

Q11. Find the value of  $\sqrt{i}$ .

Q12. Prove that  $\sqrt{-1 - \sqrt{-1 - \sqrt{-1 - \dots}}} = w \text{ or } w^2$

Q13. Prove that  $z\bar{z} = |z|^2$

Q14. Represent the following complex number in the polar form.

(i)  $\frac{1+7i}{(2-i)^2}$

Q15. Write  $\left(\frac{1}{1-2i} + \frac{3}{1+i}\right)\left(\frac{3+4i}{2-4i}\right)$  in the  $a + ib$  form.

Q16. Solve the following inequaiton.

(i)  $-11 \leq 4x - 3 \leq 13$

(ii)  $5x - 7 < 3(x+3)$

Q17. Draw the graph of the following inequaiton  $y \geq x+1$ .

Q18. Find all pairs of consecutive even positive integer both of which are larger than 5 and their sum is less than 23.

Q19. Solve  $-5(2x-7) - 3(2x+3) \leq 0$

**Q20.** The largest side of a triangle is 3 times the shortest side and the third side is 2 cm shorter than the longest side. If the perimeter of the triangle is at least 61 cm, find minimum length of shorter side.

**Q21.** Solve the following system of inequalities graphically.

$$x + 2y \leq 8 \text{ -----(1)}$$

$$2x + y \leq 8 \text{ -----(2)}$$

$$x \geq 0$$

$$y \geq 0$$

**Q22.** Solve the following system of linear equation graphically

$$x + 2y \geq 2 \text{ -----(1)}$$

$$3x + y \geq 3 \text{ -----(2)}$$

$$4x + 3y \geq 6 \text{ -----(3)}$$

$$x \geq 0, y \geq 0 \text{ -----(4)}$$

**Q23.** Solve the following system equation of linear inequalities graphically.

$$3x + y \leq 6 \text{ -----(1)}$$

$$x + y \leq 4 \text{ -----(2)}$$

$$x \leq 2 \text{ -----(3)}$$

$$y \leq 4 \text{ -----(4)}$$

$$x \geq 0, y \geq 0 \text{ -----(5)}$$

**Q24.** The temperature  $T$ ,  $x$  kilometer below the earth can be obtained by using the following formula

$$T = 30 + 25(x - 3), \quad 3 < x < 5$$

**Q25.** Solve  $\left| x + \frac{1}{4} \right| > \frac{7}{4}$

**Q26.** Convert the complex number  $z = \frac{i-1}{\cos \frac{\pi}{3} + i \sin \frac{\pi}{3}}$  in the polar for

**Q27.** If  $\alpha$  and  $\beta$  are differnt complex number with  $|\beta| = 1$  then find  $\left| \frac{\beta - \alpha}{1 - \bar{\alpha}\beta} \right|$

**Q29.** If  $\left( \frac{1+i}{1-i} \right)^m = 1$ , then find the least positive integral value of  $n$ .