AMITY INTERNATIONAL SCHOOL, PUSHP VIHAR

HOLIDAYS HOMEWORK

CLASS-XI   BIOLOGY

'Come forth into the light of things, let nature be your teacher.'
-William Wordsworth

-Visit a near by nursery, park or home garden to identify and study the following:

(a) Roots and its modifications

(b) Stem and its modifications

(c) Leaf and its modifications

(d) Types of inflorescence

Take pictures, collect information and record it in a scrap book

-To dissect flowers and study their various parts (sepals, petals, stamens, carpels).

Record the observations of atleast 10 flowers in a scrap book.

MATHS

Make a display and write a report (Handwritten) on ancient number systems.

OR

Research the role of geometric shapes and properties in architecture and construction.

Chemistry

Q 1 As we are celebrating 2011 as <u>CHEMISTRY YEAR</u>, you too can contribute in the following way:

1. Conduct a study on growth of any five pharmaceutical companies in terms of the products produced by them. Collect various samples of products like cosmetics, medicines etc and explain their composition, structures, benefits and side effects.

2. Make a periodic table chart, select any 10 elements and explain their physical and chemical properties, uses, metallurgy and chemical reactions.

Build Your Vocabulary Worksheet – Class XI
Summer of 2011

Here is a list of practical vocabulary words that will enable you to read with better understanding and write with greater accuracy. Find the meaning of each word and frame sentences with them. Write the meanings and the sentences in the language register. Use as many words as you can to write a paragraph/story/poem. Make the most of your summer- have fun!!!!!!

WORD LIST

abase	abeyance	aberration	abhorrent	ascetic	confound
contentious	contrite	barrage	brazen	debacle	denouement
deprecate	fallacy	ineffable	flagrant	ebullience	echelon
gambit	egalitarian	garrulous	hegemony	iconoclast	hermetic
labyrinth	idiosyncrasy	litigate	malapropism	moratorium	mnemonic

Mathamity Project has been allotted to the children in groups. Children have to submit handwritten project report (file) along with day wise log book and working model (if possible) immediately after summer vacations. Projects will be evaluated in internal assessment.(20 Marks)

All the Best!

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Class XI COMPUTER SCIENCE

1. Prepare a power point presentation for Input Devices and Output devices . (from chapter 1)
2. What are fundamental data types ? Describe int,float char ,double and void with modifiers.(prepare a ppt)
3. Wap to find out the area of a circle, cube ,rectangle and triangle.
4. Wap to interchange the contents of two variables(without using third variable).
5. Wap to accept name and monthly salary from the user . find and display da,hra,ta ,it and gross with the following rules:

    da = basic of 6% ,   hra= basic of 4%

    it = basic of 3% ,   ta = basic of 2%

    gross = (basic+ta+da+hra) – it
6. Write a program in c++ that reads a temp in degree Celsius and converts it into degree Fahrenheit.
7. Wap to enter a number and reverse it.
8. Wap to enter a 5 digit number and find out the sum of digits.
9. Wap to find out the simple interest and compound interest

    <u>General Instructions for PPT</u>

    1. Max students for each group is 2.
    2. Both the .ppt is compulsory for all groups.
    3. Time limit for each group is max. 10 mins for one ppt.
    4.content can not be downloaded from the net. Credit will be awarded to original illustrations.
    <u>5. SLIDE PRESENTATION ALONG WITH BRIEF DESCRIPTION OF EACH SLIDE IS COMPULSORY FOR EVERY STUDENT</u>.

CLASS XI ENGLISH HOLIDAY HOME WORK
2011-2012

Q1. Your class gave you the responsibility of organising a class party on the last day of the term. You would have to take permission of the principal, collect contributions from the class, decorate the venue, organise party games, order food and drink and make other arrangements. Write <u>a paragraph</u> of about 100 words describing how you would organise the party.

Q2. You are chosen to represent your school at the Regional Level Inter-School Debate Competition. Prepare <u>a speech</u> for the same on the topic given below: 'Newspapers ought to contain more news and fewer advertisements.'

Q3. You were traveling from Delhi to Jammu in Super Fast Express. Suddenly at night the train stopped with a violent jerk. On coming out of the coach you found that the train had rammed into a stationary goods train. Describe the accident in 80-100 words mentioning the following points. Date-time venue-impact of the accident-relief measures-probable causes-reactions of passenger & rail staff .

Q4. The President, Mrs. Pratibha Patil, had a special programme at the Rashtrapati Bhavan for the brave children who won gallantry awards on Republic Day. She held a dinner on the lawns and met them individually. The children met several ministers and dignitaries. Write the report for publication in your newspaper describing the event in about 100 words.

Holiday Home Assignment - PHYSICS

VERY SHORT ANSWER QUESTIONS:-

Q.1 Justify $[L] + [L] = [L]$ and $[L] - [L] = [L]$.

Q.2 Can a quantity have dimensions but still have no units?

Q.3 Can a quantity have units but still be dimensionless?

Q.4 Choose the pairs of quantities which have same dimensions:

Impulse, force, work, momentum, torque, tension

Q.7 What will be dimensional formula of b in equation $y = a \sin(bt - kx)$

Q.8 Name two pair of physical quantity having similar dimensions.

Q.9 Write down the number of significant figures in the following:

(i) 6.0023 g/cm^3 (ii) 1.0023×10^7

Q.10 Multiply 312.65 and 26.4 with due regards of significant figures.

Q.11 Solve with regards to significant figures. $4.0 \times 10^{-1} - 2.5 \times 10^{-5}$

Q.12 Which of the following measurements is most accurate and why?

(i) 20.0g (ii) 0.0002g (iii) 2.0g

Q.13 How many significant figures are there in the following results for quantities measured in the laboratory? (i) 2.927920×10^8 m/s (ii) 8.0120 sec.

SHORT ANSWER QUESTIONS:- (2 marks)

Q.1 Find the value of 60 J/min. on a system which has 100g, 100cm and 1min as fundamental units.

$(2.16 \times 10^6 \text{ new units})$ **(2)**

Q.2 1m, 1kg & 1min are taken as fundamental units, the magnitude of force is 36 units. What is the value of this force on c.g.s. system? (10^3 dyne) **(2)**

Q.3 If the units of force, velocity and energy are 10N, 100J and 5 m/s. Find the units of length, mass and time. (10m, 4kg, 2second) **(2)**

Q.4 The escape velocity from the surface of earth is given by $V = \sqrt{2GM/R}$, where M is mass and R is radius of earth, G is gravitational constant. Check the correctness of the relation.

(correct) **(2)**

Q.5   Write the dimension of a/b in the relation $F = a\sqrt{x} + bt^2$, where F is force, x is distance and t is time.

$(M^0L^{-1/2}T^2)$ **(2)**

Q.6   Write the dimensions of a x b in the relation $E = b - x^2 / at$ where E is energy, x is distance and t is time.

$(M^{-1}L^2T)$ **(2)**

Q.7   Write down the limitations of dimensional analysis. **(2)**

Q.8   Check the correctness of the relation $h = 2\square\cos\square/r^2$ dg where h is height, $\square$ is surface tension, $\square$ is angle of contact, r is radius, d is density and g is acceleration due to gravity.   (wrong) **(2)**

Q.9   Using dimensional analysis check the accuracy of the following relations:

(i) $S_n = u + \underline{a}(2n - 1)$ (ii) $x = h/mv$ (iii) $E = mc^2$

where the symbols have their usual meanings.   **(2EACH)**

Q.10   Obtain the dimensional formulae for universal constant of gravitation, pressure, surface energy, velocity gradient, rate of flow, Planck's constant, distance travelled in nth second, coefficient of viscosity.

(2/3)

Q.11   The mass of $25cm^3$ of a certain substance is 87.2g. Calculate its density with due regard to significant figures?

$(3.5g/cm^3)$ **(2)**

Q.12   A circular piece of tin has a measured radius of 2.6cm. What is its circumference? (16cm) **(2)**

Q.13   Solve with due regards to significant figures: (i) $3.7 \times (6.27 \times 10^{-2})$ (ii) $1.4 \times 10^3/2.6 \times 10^5$ **(2)**

Q.14   The external and internal diameters of a hollow cylinder are determined with a vernier callipers and the results are recorded as 4.23 $\square$ 0.01cm and 3.89 $\square$ 0.01cm. Determine the thickness of the cylinder wall with limits of error.

$(0.34 \pm 0.02$ cm) **(2)**

Q.15   A thin wire has a length of 21.7 cm and radius of 0.46mm. What is the volume of the wire to correct significant figures? **(2)**

Q.16   The length and breadth of a rectangle are measured to be (2.3$\square$ 0.2)cm & (1.6 $\square$0.1)cm. Calculate area of rectangle with error limits.

(3.68$\square$0.55)cm **(2)**

Q.17   The radius of a sphere is measured with error of $\square$2%. What will be the error in the volume of the sphere?

($\square$6%) **(2)**

Q.18   The time period of a simple pendulum is given by $T = 2\pi \sqrt{L/g}$. In finding the value of 'g', which quantity should be measured most accurately and why? Explain it. **(2)**

Q.19   The side 'a' of a cube is measured as (11.3 $\square$0.1) cm. What is the volume 'V' of the cube?

(1442.90$\square$38.96)cm^3 **(2)**

Q.20   The error in the measurement of radius of a sphere is 0.6%. What is the permissible error in the measurement of surface area?   (□1.2%)   **(2)**

Q.21   The time period of oscillation of simple pendulum is given by $T = 2\pi\sqrt{L/g}$. What is the accuracy in the determination of 'g'. If 10cm length has 1mm accuracy & 0.5 sec. Time period is measured from time of 100 oscillations with a watch of 1 sec. resolution?   (□5%) **(2)**

SHORT ANSWER QUESTIONS (3 MARKS)

Q.1   Assuming the mass M of the largest stone that can be moved by a flowing river depends on velocity V, density p and acceleration due to gravity g. Show that M varies directly as the sixth power of velocity of flow.   **(3)**

Q.2   Using the principle of homogeneity of dimensions, find which of the following is correct?

   (i) $T^2 = 4\ \square^2\ a^2$ (ii) $T^2 = 4\ \square^2\ a^3\ /\ G$ (iii) $T^2 = 4\ \square^2\ a^2\ /\ G\ M$

   where T is time period, G is gravitational constant, M is mass, a is radius of orbit.

                                              ($T^2 = 4\ \square^2\ a^2\ /\ G\ M$) **(3)**

Q.3   Calculate the dimensions for (i) force (ii) Impulse in terms of velocity v, density ρ and frequency y as fundamental units.   ($F = \rho\ v^4\ y^{-2}$, $I = \rho\ v^4\ y^{-3}$) **(3)**

Q.4   Given that the time period T of oscillations of gas bubbles from an explosion under water depends on P, ρ & E (i.e. pressure, density, & energy). Find dimensionally a relation for T.   ($T = P^{5/6}\ \rho^{1/2} E^{1/3}$) **(3)**

Q.5   If dimensions of length are expressed as $G^x\ C^y\ h^z$ where G, C and h are universal gravitational constant, speed of light and plank's constant. What are the values of x, y & z? Given $E = h\nu$

                                        (x=1/2, y=-3/2, z=-1/2) **(3)**

Q.6   The velocity v of a particle is given in terms of time t as $v = at + b\ /\ (t + c)$. Find the dimensions of a, b, c.   ($a = LT^{-2}$, $b = L$, $c = T$) **(3)**

Q.7   The heat produced in a wire carrying an electric current depends on the current, the resistance and the time. Assuming that the dependence is of the product of powers type, guess an equation between these quantities using dimensional analysis. The dimensional formula of resistance is $ML^2A^{-2}T^{-3}$ and heat is a form of energy. **(3)**

Q.8   Test if the following equation is dimensionally correct. $y = \dfrac{1}{2\pi}\ (mg\ l\ /\ I)^{1/2}$

   where y = frequency, I = moment of inertia.   **(3)**

Q.9 Two resistance $R_1 = (6 \pm 0.2)\ \Omega$ & $R_2 = (8 \pm 0.6)\ \Omega$ are connected in parallel. Find the total resistance of combination with percentage error. **(3)**

Q.10 To study the flow of liquid through a narrow tube, the following formula is used $n = \pi p r^r / 8\ Vl$ where the letters have their usual meanings. The values of p, r, V and 1 are measured to be 7cm of hg, 0.28cm, 1.28cm^3/s and 18.2cm respectively. If these quantities are measured to the accuracy of 0.5cm of hg, 0.01cm, 0.1cm^3/s and 0.1cm respectively, find the percentage error in the value n. (238.3%) **(3)**

Q.11 A stick has a length of 12.132cm and another stick a length of 12.4cm -

(a) If two sticks are placed end to end, what is their total length?

(b) If the two sticks are placed side by side, what is their difference in length? **(3)**

Q.12 The radius of the sphere is measured to be 5.3 ± 0.1cm. Calculate the percentage error in surface area and volume. (area $\pm 3.8\%$, volume $\pm 5.7\%$) **(3)**

Q.13 A car travels a distance of 68km in 2.0137 hours. What is the average speed? Express the time of travel for the car in minutes. (34km/h, 120.82 min.) **(3)**

Q.14 The value of a physical quantity 'x' is calculated from $x = ab^2 / \sqrt{c}$. Calculate % error in 'x', when % error in measuring a, b, c are 4, 2, 3 respectively. ($\pm 9.5\%$) **(3)**

Q.15 The density 'p' of a block of metal of mass 'm' & volume 'V' is given by the formula $p = m/V$. If m = 375.32 ± 0.1g & V = 136.41 ± 0.01cm^3. Find the percentage error in 'p'. ($\pm 0.01\%$) **(3)**

Q.16. How can you classify physical quantities on the basis of dimensionsal analysis. Explain with examples. **(3)**

Degradation in Society

We are all proud to be citizens of the largest democracy of the world. But we are also plagued by a serious malady, corruption. It is time to do some retrospective thinking on this issue.

A socialist activist, Anna Hazare, has come out openly to fight this issue. But, are candle marches, fasts unto death, signature campaigns etc. , the only ways of tackling it. NO. Corruption of any kind corrupts. It costs us either money or confidence or both. But intellectual corruption is far more dangerous. It ruins and costs lives.

Look around you & identify the areas where intellectual corruption is being practised. Talk to people from different walks of life on this topic & compile it in the same folder & give your views on the topic.