BAWA - LALVANI PUBLIC SCHOOL

HOLIDAYS - HOMEWORK
GRADE – XI (SESSION 2019-20)

General Instructions:

- Use practical sheets for making the project files.
- All subject assignments should be done in respective notebooks.
- Prepare Index for each subject.
- Assignment should be legible and neat.

Work Experience:

Each student will be required to get work experience of one week. You may work in a Farm, Retail shops, Zomato, Dominos, Bank, Shopping Malls etc. and bring an experience certificate from the employer.

ENGLISH

Topic:
1. Watch any one of the following movies:
    (i) Life of Pie
    (ii) Theory of Everything
    (iii) A Beautiful Mind
    (iv) Sherlock Holmes
    (v) First Man
    Procedure:
    i.   Prepare a script.
    ii.   Out of that script prepare a Questionnaire with at least 15 questions and write their answers also.

                                    or

2.   Read any one of the following novels:
    (i) Lord of Flies by William Golding
    (ii) Middlemarch by George Elliot
    (iii) 1984 by George Orwell
    (iv) Wuthering Heights by Emily Bronte
    (v) Great Expectations by Charles Dickens

    Procedure:
    i.   Read the novel thoroughly.
    ii.   Write down bullet points.
    iii.   Write down at least 5 learnings from that long text reading.
    iv.   Write the character sketch of any five characters in the novel.

PHYSICS

(WORKSHEET-1)

1. A LASER beam aimed at the moon takes 2.56 seconds to return after reflection at moon's surface. Find the radius of lunar orbit around earth .

2. The parallax of a heavenly body measured from two points diametrically opposite on equator of earth is 2 ′. If the radius of earth is 6400 km , find the distance of heavenly body from the centre of the earth in AU.

3. When the planet Jupiter is at a distance of 824.7 million kilometers from the Earth, its angular diameter is measured to be 35.72″ of arc . Calculate the diameter of Jupiter ?

4. Write the number of significant figures in the following: (i) 0.007 m^2 (ii) 2.64 x 10^{24} kg (iii)0.2370 g cm^{-3} (iv) 6.206 J (v) 7.032 Nm^{-2} (vi) 0.0005062 m^2

5. The length , breadth and thickness of a metal sheet are 4.234 m , 1.005 m and 2.01 cm respectively . Find the volume of the sheet to correct number of significant figures .

6. A physical quantity P is given P = $a^2 b^3$ / ($\sqrt{c}$ d). The percentage errors in a , b , c and d are 1% ,3% ,4% and 2% respectively .Find the percentage error in P .

7. The length and breadth of a rectangle are (5.7 ± 0.1) cm and (3.4 ± 0.2) cm . Calculate area of the rectangle with error limits .

8. Add 17.35 g , 25.6 g and 8.498 g and write the result with the correct number of significant figures

9. Calculate the area enclosed by a circle of diameter 1.06 m to correct number of significant figures .

10. The rate of flow V of liquid flowing through a pipe of radius r and a pressure gradient (p/l) is given by equation : V = (π pr^4) / (8 η l) . Check the dimensional consistency of this equation where η is the coefficient of viscosity .

11. Find the value of x in the relation Y = (T^x .cos θ .τ) / L3 , where Y is Young's modulus , T is time period , τ is torque and L is length.

12. A planet moves around the sun in nearly circular orbit . Its period of revolution T depends upon : (i) radius (r) of orbit (ii) mass M of the sun and (iii) the gravitational constant G. Show dimensionally that T^2 is proportional to r^3 .

(WORKSHEET-II)

1. Which is the most accurate clock ?

2. Which quantity in a given formula should be measured most accurately ?

3. (i) Can there be a physical quantity which has no units and no dimensions . Give examples .

   (ii) Can a quantity have dimensions but still have no units ?

   (iii) Can a quantity have units but still be dimensionless? Give examples.

4. Name any three physical quantities having the same dimensions . Also write the dimension .

5. How can random error be minimized?

6.   Differentiate between accuracy and precision.

7.   Which of the following length measurement is most accurate and why?

      (i)4 .0 cm (ii) 4.00 cm (iii) 4.000 cm

8.   Name the device used for measuring the mass of atoms and molecules .

9.   Assuming that the mass M of the largest stone that can be moved by a flowing river depends upon the velocity v , the density of water ρ and the acceleration due to gravity . Show that M varies with the sixth power of the velocity of flow.

10.   The value of G in cgs system is 6.67 x 10-8 dyne cm^2 g^{-2} . Calculate the value in SI system.

11.   Find the value of a force of 100 N on a system based upon the metre , the kilogram and the minute as the fundamental units .

12.   Solve all the Ncert Questions of Physical world and measurement?

CHEMISTRY
(WORKSHEET 1)

Topic : Some Basic Concepts Of Chemistry

1.   State law of multiple proportion?
2.   Calculate the percentage composition of each element in sugar.
3.   Out of 1m and 1M which is better to express concentration and why?
4.   Calculate the percentage composition of each element in glucose.
5.   Calculate the volume at N.T.P occupied by 10^{21} molecules of oxygen
6.   What is the molality of a solution which contains 36g of glucose in 250g of water?
7.   Differentiate between molarity and molality.
8.   Calculate the number of atoms in 0.25 mole of carbon.
9.   Calculate the number of moles in 6.022 X 10^{22} molecules of oxygen.
10.   An organic compound has the following percentage composition;
       C = 48% , H = 8% , N = 28%. Calculate the empirical formula of the compound.

WORKSHEET -2
Topic: Some Basic Concepts of Chemistry.
1.   What is the S I unit of temperature? Define it.
2.   What is the molarity of solution which contains 10g of NaCl in 500mL of water.
3.   When does the law of constant proportion fail?
4.   Which is more concentrated 1M H_2SO_4 or 1N H_2SO_4?
5.   Calculate number of moles, molecules and protons in 64 g of O_2
6.   What is the molality of ammonia in a solution containing 0.85 g of NH_3 in 100mL of a liquid of density $0.85g/cm^3$?

7. Calculate mole fraction of C_2H_5OH & H_2O in a sample of 15% C_2H_5OH.
8. Calculate the mass of single molecule of oxygen gas.
9. What is limiting reagent ? Explain with a suitable example.
10. Calculate the empirical formula of a compound whose percentage composition is : C=21.9% , H=4.6% and Br=73.4%.

WORKSHEET -3
Topic : Structure of Atom

1. Which element does not have any neutron?
2. Calculate the mass and charge of one mole of electrons.
3. Calculate the number of electrons which will together weigh one gram.
4. Calculate the total number of electrons present in one mole of methane.
5. Find the total number and the total mass of neutrons in 7mg of ^{14}C.
6. Find the total number and the total mass of protons in 34mg of NH_3.
7. Calculate the wavelength, frequency and wave number of light wave whose period is 2×10^{-10} sec.
8. Calculate the frequency of emission light radiations of wavelength 616nm.
9. How atomic number, mass number and number of neutrons are related to each other.
10. Calculate the number of protons, neutrons and electrons in $_{92}U^{235}$
11. The number of electrons, protons and neutrons in a species are equal to 18, 16, and 16 respectively. Assign proper symbol of the species.
12. A sodium street light gives off yellow light that has a wavelength of 589nm. What is the frequency and wave number of this light?
13. Name subatomic particles of atom.
14. Differentiate between sub atomic particles of atom.
15. Define the following terms by giving one example-
   (i) Isotope
   (ii) Isobar
   (iii) Isotone

BIOLOGY

I. **Revise Ch 4,5 (NCERT) and make your notes on the various topics.**
II. Write down the following practicals in your Biology file.

   a) Preparation and study of T.S. of dicot and monocot roots and stems (primary).

   b) Study of osmosis by potato osmometer.

   c) Study of distribution of stomata in the upper and lower surface of leaves.

   d) Comparative study of the rates of transpiration in the upper and lower surface of leaves.

   e) Test for the presence of sugar, starch, proteins and fats. Detection in suitable plant and animal materials.

MATHEMATICS

Project Work to be done for the following topics with the help of examples and proper figure:

1) Inequality (Objective –To verify that the graph of a given inequality, say x+ 2y<8, x>0, y>0 represents only one of the two half planes)

2) Find the modulus, argument, principal value of the argument, and polar form of the given complex number:

   (i) 1-i   (ii) $\frac{1-i\sqrt{3}}{2}$ (iii) $\frac{1-i}{1+i}$ (iv) $\frac{(2+i)^2}{(3-i)^2}$ (v) -100   (vi) -3i

3) Show that if $|z|=2$, then $\left|\frac{1}{z^4-4z^2+3}\right| \le \frac{1}{3}$.

4) If either $|z_1| = 1$ or $|z_2| = 1$, but not both, then prove that $\left|\frac{z_1-z_2}{1-\overline{z_1}z_2}\right| = 1$. What exception must be made for the validity of the above equality when $|z_1| = |z_2| = 1$?

5) If z_1, z_2, z_3 and z_4 are complex numbers of unit modulus, prove that

$$|z_1 - z_2|^2|z_3 - z_4|^2 + |z_1 + z_4|^2|z_3 - z_2|^2 = |z_1(z_2 - z_3) + z_3(z_2 - z_1) + z_4(z_1 - z_3)|^2$$

6) Prove that equation of the circle whose diameter is formed by joining z_1 and z_2 is
$$2z\overline{z} - z(\overline{z_1} + \overline{z_2}) - \overline{z}(z_1 + z_2) + z_1\overline{z_2} + \overline{z_1}z_2 = 0.$$

7) When do three distinct points z_1, z_2, z_3 lie on a straight line?

8) Interpret geometrically the following relations:
   (i) $\{z \in C: |R(z)| + |I(z)| = 1\}$.
   (ii) $|z - a| - |z + a| = 2c$ where a and c are real constants with $c > 0$.

9) Find all the roots or all the values of the following:

   (i) Cube roots of i (ii) Fourth roots of $(-2\sqrt{3} - 2i)$ (iii) Fourth roots of (-1)   (iv) Sixth roots of 8   (v) The values of $(i)^{\frac{2}{3}}$

For problems 1 – 10 solve each of the following inequalities. Give the solution in both inequality and interval notations.

1) 7x+2(4−x)<12−3(5+6x)
2) 10(3+w)≥9(2−4w)
3) (4+5y)≤12y−6(1−3y)
4) 2(13−16z)>19z+4(2−718z
5) 2≤2+4(3−x)≤6
6) −4<7x+8≤1
7) 12<2(14+18t)<34
8) −12≤4−11m≤3
9) 0≤37−514x<12
10) −8<2(3+4x)−4(1+3x)≤3
11) If −7<x≤6 determine a and b for the inequality : a≤3x+8<b
12) If −3≤x≤−1 determine a and b for the inequality : a≤6−2x<b

BUSINESS STUDIES

Students can select one unit out of four and are required to make only one project from the selected unit.(consist of one project of 20 marks)

1.   Aids to trade.
2.   Forms of Business Organisation
3.   Social Responsibility of Business
4.   Insurance

Following essentials are required to be fulfilled for its preparation and submission.
1.   The total length of the project will be of 25 to 30 pages.
2.   The project should be handwritten.
3.   The project should be presented in a neat folder.
4.   The project report should be developed in the following sequence

- Cover page should include the title of the Project, student information, school and year.
- List of content.
- Acknowledgement and preface.
- Introduction.
- Topic with suitable heading.
- Planning and activities done during the project, if any.
- Observation and finding.
- Conclusion.
- Appendix.

ECONOMICS

Complete the project on the topic given below:

Topic	Class
1. Demand and price elasticity of Demand	Grade XI B , XI D
2. Consumer Equilibrium- meaning of utility, marginal utility, law of diminishing marginal utility, conditions of consumer's equilibrium using marginal utility analysis	Grade XIC

Guidelines:

The <u>expectations</u> of the project work are as follows:

- Project should be of 3,500-4,000 words (excluding diagrams & graphs), preferably hand-written

- It will be an independent, self-directed piece of study.

ACCOUNTANCY

1. Collection of different type of Source Documents:

   ➢ Students are required to collect different type of Source Documents (like Cash Memo, Invoice / Bill, Pay-in-Slip, Cheque, Receipt, Debit Note, Credit Note etc.) and pasted in a Project File.

   ➢ Students are also required to write the meaning, usage and importance of all Source Documents.

2. Preparation of Vouchers:

   ➢ Students are required to mention different types of Vouchers, Method of the Preparation of Vouchers and recording of transactions with the help of Vouchers.

MARKETING

1. "Indian market is generally become consumer-oriented." Discuss the statement in detail with reference to the impact of marketing environment on Indian Markets.

2. Write an essay on the challenges of marketing in India.

3. Write an essay on the implementation of different marketing philosophies by modern business or generation.

POLITICAL SCIENCE

Suggested projects:

1. Rights in the Indian Constitution   (Roll no.1-3)
2. Election and Representation   (Roll no.4-6)
3. The Executive   (Roll no.7-9)
4. The Legislature   (Roll no.10-12)
5. Federalism   (Roll no.13-15)
6. Local Governments   (Roll no.16- 18)

The following aspects should be covered.

1. Cover page
2. Index
3. Acknowledgement
4. Introduction

5. Statement of purpose
6. Research questions
7. Methodology
8. Presentation of Secondary evidences such as news paper, article, Magazines and so on.

Note: Individual project is to be submitted.

SOCIOLOGY

Suggested projects:

1. Cultural diversity   (Roll no.1-3)
2. Child labour   (Roll no.4-6)
3. Low Sex Ratio   (Roll no.7-9)
4. Family System   (Roll no.10-13)
5. Low literacy rate in India   (Roll no.14-16)
6. Marginalized Group   (Roll no.17 and 18)

The following aspects should be covered.

1. Cover page
2. Index
3. Acknowledgement
4. Introduction
5. Statement of purpose
6. Research questions
7. Methodology
8. Presentation of Secondary evidences such as news paper, article, Magazines and so on.

Note: *Individual project is to be submitted*

COMPUTER SCIENCE

1. Create a Power Point Presentation on stories of 6 successful Indian entrepreneurs (10-15) slides with soft copy (CD) and hard copy.   (coloured printing)
2. Prepare a report on green skills development program in India in Ms word (3 pages) with hard copy. (black & white)

MUSIC

1. Write structure and the tuning of tanpura.
2. Write the tala notation of rupak tala.

PSYCHOLOGY

Develop a case profile by using appropriate methods like, interview, observation and psychological tests.

PAINTING

Draw the following:

1.   3 Landscape (pencil shading) on ivory sheet

2.   2 Still life (pencil shading) on ivory sheet

3.   2 Landscape (poster colour) on handmade sheet

4.   2 Still life (poster colour) on handmade sheet

Sheet size- imperial (half chart)

PHYSICAL EDUCATION

Practical I

Draw a labeled diagram of 400m track and field with computation.

Practical II

 Computation of BMI from family or neighbourhood and graphical representation of the data

Practical III

Any one game of your choice out of the list below, Draw a labeled diagram of the field and equipments on SP practical file (rules, terminologies and skills)

a) Football

b) Volleyball

c) Basketball

.