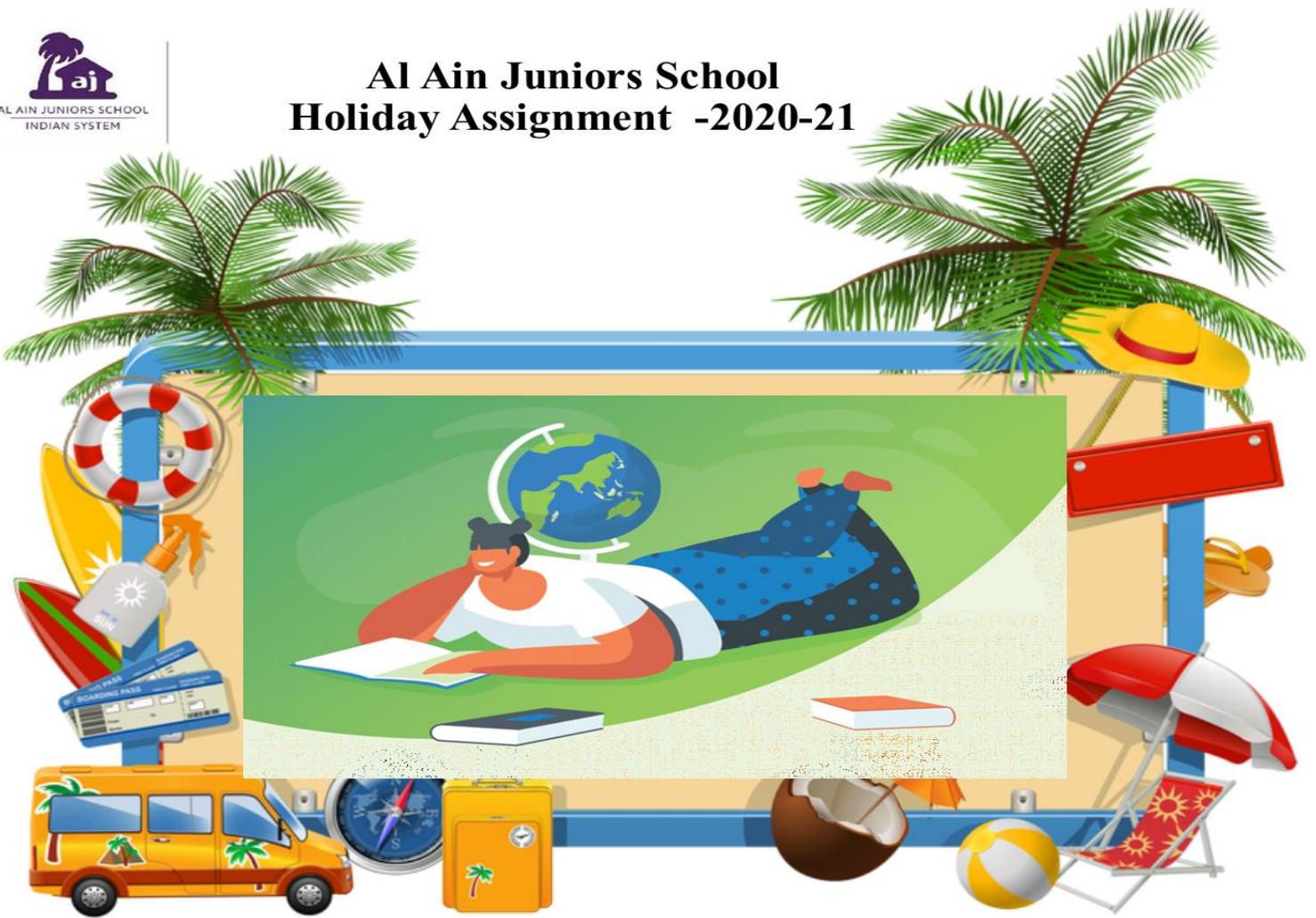


# Al Ain Juniors School Holiday Assignment -2020-21



# HAPPY VACATION





### ASSESSMENT TECHNIQUE: INVESTIGATORY PROJECT

OBJECTIVE: Physics is known as the science of energy and matter. It includes the study of energy, matter related to light, heat motions and force. Well, the extension of modern physics has expanded to nuclear physics, plasma, particles and cryogenics. Explore the laws of physics and its role in our daily life with these Physics fair projects. Choose any one investigatory project, relate it to real life experiences, and explore the world of Physics.

[CHOOSE ANY ONE FROM THE GIVEN LIST OR YOU CAN DO YOUR OWN PROJECTS .....Make working models, still models, AI integrated and Art integrated projects.....choice is yours]

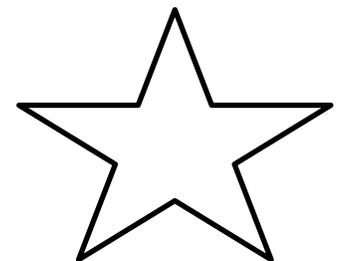
1. To study various factors on which the internal resistance/EMF of a cell depends.
2. To study the variations in current flowing in a circuit containing an LDR because of a variation in (a) the power of the incandescent lamp, used to 'illuminate' the LDR (keeping all the lamps at a fixed distance). (b) the distance of a incandescent lamp (of fixed power) used to 'illuminate' the LDR
3. To find the refractive indices of (a) water (b) oil (transparent) using a plane mirror, an equi convex lens (made from a glass of known refractive index) and an adjustable object needle.
4. To design an appropriate logic gate combination for a given truth table. **(AI INTEGRATED)**
5. To investigate the relation between the ratio of (i) output and input voltage and (ii) number of turns in the secondary coil and primary coil of a self-designed transformer.
6. To investigate the dependence of the angle of deviation on the angle of incidence using a hollow prism filled one by one, with different transparent fluids.
7. To estimate the charge induced on each one of the two identical styrofoam (or pith) balls suspended in a vertical plane by making use of Coulomb's law. [ **CREATE SIMULATIONS USING ARTIFICIAL INTELLIGENCE**]
8. To study the factor on which the self-inductance of a coil depends by observing the effect of this coil, when put in series with a resistor/(bulb) in a circuit fed up by an A.C. source of adjustable frequency.
9. To study the earth's magnetic field using a tangent galvanometer.

### Rubrics for assessment:

### PROJECT COMPLETION (5)

#### **1. UNDERSTANDING (1)**

#### **2. RELEVANCE AND DEVELOPMENT OF TOPIC (1)**



### 3. APPLICATION/ INNOVATION (1)

### 4. CREATIVITY (1)

### 5. SCIENTIFIC ATTITUDE (1)

Grade 12

## Chemistry Vacation Assignment

1. Identify Chiral in  $\text{CH}_3\text{CHOHCH}_2\text{CH}_3$  and  $\text{CH}_3\text{CHOHCH}_3$
2. Which of the following is more easily hydrolyzed and why?  $\text{CH}_3\text{CHClCH}_2\text{CH}_3$  or  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{Cl}$
3. Write the main product when n-butyl chloride is treated with alcoholic KOH
4. Write equation for the preparation of 1-iodobutane from 1-chlorobutane
5. Give one chemical test to distinguish between  $\text{C}_2\text{H}_5\text{Br}$  and  $\text{C}_6\text{H}_5\text{Br}$
6. What happens when bromine attacks  $\text{CH}_2=\text{CH}-\text{CH}_2-\text{CH}=\text{CH}_2$
7. A solution prepared by dissolving 1.25 g of oil of winter green (methyl salicylate) in 99.0 g of benzene has a boiling point of  $80.31^\circ\text{C}$ . Determine the molar mass of this compound. (B.P. of pure Benzene =  $80.10^\circ\text{C}$  and  $K_b$  for benzene =  $2.53^\circ\text{C kg mol}^{-1}$ )
8. Write the IUPAC name of  $(\text{CH}_3)_3\text{CCH}_2\text{Br}$
9. Which will have a higher boiling point?  
1-Chloropentane or 2-methyl-2-chlorobutane
10. How will you convert Aniline to Bromobenzene?
11. How will you distinguish between Chlorobenzene and Benzyl chloride?
12. Which is a better nucleophile, a bromide ion or an iodide ion?
13. A solution of glycerol ( $\text{C}_3\text{H}_8\text{O}_3$ ; molar mass =  $92 \text{ g mol}^{-1}$ ) in water was prepared by dissolving some glycerol in 500 g of water. This solution has a boiling point of  $100.42^\circ\text{C}$ . What mass of glycerol was dissolved to make this solution?  $K_b$  for water =  $0.512 \text{ K kg mol}^{-1}$
14. Calculate the freezing point of an aqueous solution containing 10.50 g of  $\text{MgBr}_2$  in 200 g of Water. (Molar mass of  $\text{MgBr}_2$  = 184 g) ( $K_f$  for water =  $1.86 \text{ K kg mol}^{-1}$ )
15. A copper-silver cell is set up. The copper ion concentration is 0.10 M. The concentration of silver ion is not known. The cell potential when measured was 0.422 V. Determine the Concentration of silver ions in the cell. (Given  $E^\circ \text{Ag}^+/\text{Ag} = 0.80\text{V}$ ,  $E^\circ \text{Cu}^{2+}/\text{Cu} = 0.34 \text{ V}$ )

### CHEMISTRY REVISION SCHEDULE

|                   |                            |
|-------------------|----------------------------|
| JULY 11 - JULY 18 | SOLUTION                   |
| JULY 19 - JULY 24 | CHEMICAL KINETICS          |
| JULY 25 - JULY 30 | BIOMOLECULES               |
| JULY 31- AUG 3    | POLYMERS                   |
| AUG 4- AUG 6      | GENERAL PRINCIPLES         |
| AUG 7- AUG 12     | HALOALKANES AND HALOARENES |
| AUG 13- AUG 20    | SOLID STATE                |
|                   |                            |

**STRUGGLING IS THE WAY TO LEARN. DON'T EVER THINK THAT YOU ARE WASTING TIME WHEN YOU ARE STRUGGLING TO UNDERSTAND SOMETHING. THAT IS THE BEST WAY TO LEARN AND REMEMBER IT. THE MORE YOU STRUGGLE ON YOUR OWN, THE BETTER.**

**DON'T GIVE UP : ALL THE BEST: STAY SAFE AND HEALTHY**

## Subject: Biology

| S.No | Class                  | Project and record work details   |
|------|------------------------|---|
| 1.   | 12 <sup>th</sup> grade | <b>INDIVIDUAL PROJECT-</b> <ol style="list-style-type: none"><li>1. Study of effect of antibiotics on micro-organisms.</li><li>2. Stud of Dairy farm management</li><li>3. Study of pollen structure and calculation of Pollen Viability</li><li>4. Study of rate of Pollen Germination of various species in sugar and boron solution.</li><li>5. Study of dispersal of seeds by various agencies.</li><li>6. Study of harmful radiaiton of electronic gadgets affecting pollnation</li><li>7. Study of Tissue culture in UAE</li><li>8. Study of pollination in sunflower and legume.</li><li>9. Comparative study of Chlorophyll Content in five different species of plants.</li><li>10. Study of drug resistance in bacteria using antibiotics.</li><li>11. Study of coaguable and noncoaguable milk proteins.</li><li>12. Effects of water impurities on plant growth.</li><li>13. Study of tumours in plants.</li><li>14. DNA fingerprinting and cloning.</li><li>15. Cancer and its types.</li><li>16. DNA forensic significance</li><li>17. Sewage treatment plant in UAE.</li></ol> . |

### REVISION - ENVIRONMENTAL ISSUES,BIODIVERSITY,ECOSYSTEM

**Time-6-9pm**

| DATE      | TOPIC                                  |
|-----------|--|
| 5/07/2020 | Air pollution and its control-upto 273 |
| 6/07/2020 | Water pollution -276                   |

|            |  |
|------------|--|
| 7/07/2020  | <i>Eutrophication,solid wastes-278</i>                                 |
| 8/07/2020  | <i>279-280</i>   |
| 9/07/2020  | <i>Green house effect,ozone depletion</i>                              |
| 11/07/2020 | <i>Deforestation- till end</i>   |
| 12/07/2020 | <i>Biodiversity –patternsof biodiversity-262</i>                       |
| 13/07/2020 | <i>Importance of biodiversity ,loss and causes of biodiversity-265</i> |
| 14/07/2020 | <i>Biodiversity conservation upto Excitu</i>                           |
| 15/07/2020 | <i>Structure and function,productivity</i>                             |
| 16/07/2020 | <i>Decomposition,Energy flow-246</i>                                   |
| 18/07/2020 | <i>Ecological pyramid(246)-250</i>                                     |
| 19/07/2020 | <i>Ecological succession</i>   |

#### **REPRODUCTION IN ORGANISMS ,FLOWERING PLANTS**

|            |   |
|------------|---|
| 20/07/2020 | <i>Introduction to asexual reproduction</i>                         |
| 21/07/2020 | <i>Sexual reproduction</i>  |
| 22/07/2020 | <i>Prefertilization events</i>                                      |
| 23/07/2020 | <i>Gamete transfer,fertilization,post fertilizatiion</i>            |
| 25/07/2020 | <i>Prefertilization-structure and events upto microsporogenesis</i> |
| 26/07/2020 | <i>Pollen grain,megasporangium</i>                                  |
| 28/07/2020 | <i>Pollination,agents</i>   |
| 29/07/2020 | <i>Out breeding devices upto artificial hybridisation</i>           |
| 30/07/2020 | <i>Double fertilization,embryo</i>                                  |
| 1/08/2020  | <i>Seed,apomixes,poly mebryony</i>                                  |

#### **UNIT-VIII**

|           |                               |
|-----------|-------------------------------|
| 2/08/2020 | <i>Common diseases in man</i> |
| 3/08/2020 | <i>Immunity</i>               |

|            |   |
|------------|---|
| 4/08/2020  | <i>Vaccination to Immune system in body</i>   |
| 5/08/2020  | <i>AIDS,Cancer.</i>                           |
| 6/08/2020  | <i>Drug and alcohol abuse</i>                 |
| 8/08/2020  | <i>Drug and alcohol abuse</i>                 |
| 9/08/2020  | <i>Animal husbandry upto animal breeding</i>  |
| 10/08/2020 | <i>Bee keeping to steps in plant breeding</i> |
| 11/08/2020 | <i>Pg-173-175</i>                             |
| 12/08/2020 | <i>Biofortification to tissue culture</i>     |
| 13/08/2020 | <i>Pg-179 to 182</i>                          |
| 15/08/2020 | <i>183-185</i>                                |
| 16/08/2020 | <i>185-188</i>                                |

#### ENGLISH

1. Read "Brave New World "by Aldous Huxley and write the review.
2. Read the book " The Lively Art of Writing" by Lucile Vaughan  
(Project- Choose any TWO)
3. **Advertisements:** create an advertising campaign to sell a product. The product can be real or imaginary. Try using this to teach persuasion, as an assignment for speech class, or to reinforce skills learned in a consumer class.
4. **Bar Graphs:** create illustrated bar graphs. These may be used to explore data sets, use statistics to support a point, or illustrate a growth or change in a market.
5. **Blogs:** create blogs for literary characters or historical figures. Create an actual blog for free at [blogger.com](http://blogger.com) or just write and organize articles on white printer paper if the internet is not available.
- 6.

#### Grade 12 Mathematics Assignment

Dear Students,

Summer vacation is the best time to make you strong in the topics covered. Planned study along with enjoyment will be the best solution. When the school reopens after vacation you will be occupied by new lessons.

Plan yourself and complete the following tasks and submit the work on the first day of school after the vacation.

1. Solve NCERT exemplar questions, at least three from each chapter.(You can find them in NCERT exemplar questions text book if you login NCERT publications),
2. Solve all the questions of past papers in the topics you have covered of past three years (You can find these papers in any of the question banks published by different publications/ Any of the sites available on the net)
3. If anyone wants to do more, solve few questions from R.D Sharma.
4. Complete the activities 11 to 16 in your record books as discussed in class

Note down your doubts if any on a paper, so that we can discuss them after the vacation.

### Seasonal greetings and Happy Vacation

## Grade 12 Computer Science

Dear Students,

1. All Practical programs should be completed and prepare the report using the template shared with you. Programs include Python and My SQL queries.
2. Individual project has to be completed using Python, Data File Handling and My SQL connectivity. Prototype regarding the project should be made and send to me by email.

## SUMMER ASSIGNMENT – 2020-21

### ISLAMIC STUDIES

| Grade | Assignments   |
|-------|---|
| VII   | <p>(Boys): Prepare a booklet on “Biography of Abdullah bin Omar (RA)” including inspiring aspect of his life.</p> <p>(Girls): Prepare a booklet on “Fatimah bint Mohammad (RA)” including inspiring aspect of her life.</p> |
| VIII  | <p>(Boys): Prepare a booklet on “Abdullah bin Zubair (RA)” including inspiring aspect of his life.</p> <p>(Girls): Prepare a booklet on “AsmaaBintAbiBakr (RA)” including inspiring aspect of her life.</p>                 |
| IX    | <p>(Boys): Prepare a booklet on “Biography of Omar bin Al-Khattab(RA)” including inspiring aspect of his life.</p>  |

|     |  |
|-----|--|
|     | (Girls): Prepare a booklet on “Hafsabint Omar (RA)” including inspiring aspect of her life.  |
| X   | (Boys): Prepare a booklet on “Biography of Abu Bakr (RA)” including inspiring aspect of his life.<br><br>(Girls): Prepare a booklet on “AyeshaabintAbiBakr (RA)” including inspiring aspect of her life.     |
| XI  | (Boys): Prepare a booklet on “Biography of Khalid bin Waleed (RA)” including inspiring aspect of his life.<br><br>(Girls): Prepare a booklet on “UmmeAmmarah(RA)” including inspiring aspect of her life.    |
| XII | (Boys): Prepare a booklet on “Biography of Uthman bin Affan (RA)” including inspiring aspect of his life.<br><br>(Girls): Prepare a booklet on “HalimahSa’diya (RA)” including inspiring aspect of her life. |

**GRADE 12: PSYCHOLOGY**

| SUBJECT    | TOPIC   |
|------------|---|
| PSYCHOLOGY | <p><b>PROJECT – CASE STUDY ON ANY PSYCHOLOGICAL DISORDER.</b><br/> Instructions and Guidelines :</p> <ol style="list-style-type: none"> <li>The students shall be required to undertake one project during vacations.</li> <li>Students have to choose any one psychological disorder from Chapter 4<sup>th</sup>- Psychological disorders of the textbook.</li> <li>Some of psychological disorders to be selected are Anxiety disorder, Somatoform disorder, Dissociative disorder, Mood disorder, Substance abuse, Schizophrenic Disorder, Behavioural and Developmental disorders etc.</li> <li>Students should prepare a case study on real life client who are suffering from any of above disorder.</li> </ol> <p>The project would involve the use of different methods of enquiry and related skills<br/> The format for the project work will be:</p> <ol style="list-style-type: none"> <li>Index</li> <li>Introduction</li> <li>Details of selected disorder</li> <li>Causes</li> <li>Identification of data</li> <li>Case history of client</li> <li>Use of psychometric tests</li> <li>Data analysis</li> <li>Conclusion</li> <li>Bibliography</li> </ol> |

In the Practical examination, the student will be required to administer and interpret two psychological tests.

**Total marks 30**

- ⦿ Practical File and Case profile (10 Marks)
- ⦿ Viva Voce (Case profile and practical) (05 Marks)
- ⦿ Two practicals (5 for conduct and 10 for reporting) (15 Marks )

Dear Students,

Please complete al your notebook pending work till chapter 5 and submit it for correction.

Seasonal Greetings and Happy Vacation.

### Grade 12: ARABIC

- 1- اكتب تقريراً عن رحلة قمت بها إلى بعض الماكن السياحية مستعيناً بالبيانات التي وردت في الكتاب المدرسي (كتاب الطالب) صفحة رقم 144 ( يكتب التقرير في ورقة ويسلم بعد انتهاء العطلة الصيفية مباشرة) 10 علامات.
- 2- اكتب مقالة بعنوان كيف أكون قدوة 10 علامات.
- 3- حل كتاب التدريبات صفحة رقم 98 و 99 و 100 و 15 علامة.