D.A.V. PUBLIC SCHOOL
ASHOK VIHAR PH-4 DELHI
CLASS XII
HOLIDAY HOMEWORK 2020

SUBJECT: ENGLISH
Holidays homework for class 12 * Write an essay on "Doctors --the saviors of humanity " (support this with related pictures) * Your views on the Topic"Online teaching vs classroom teaching " * Recite a poem on "Doctors -the warriors" and send the video. (this will be considered as interclass competition among all the sections of 12) * Read any novel of your choice and write about the gist and main characters of it *Complete all the chapters done during online classes *All the work has to be done in the notebook and after holidays you have to send it in pdf form.

SUBJECT: MATHS

1. Mathematics Practical File work to be completed. (All 10 activities)
2. Following Chapters to be done from this link: http://edudel.nic.in/welcome_folder/support_material_2019_20.htm
    a) Linear Programming Problem
    b) Continuity and Differentiability
    c) Inverse Trigonometric Functions
    d) Matrices

e) Determinants
3. The above chapters are also to be done from NCERT EXEMPLAR.

SUBJECT: PHYSICS

HOLIDAY HOMEWORK

- COMPLETE YOUR PRACTICAL AND ACTIVITY FILE
- COMPLETE YOUR PROJECT
- COMPLETE NCERT QUESTIONS OF UNIT 1 AND UNIT 2
- COMPLETE YOUR THEORY NOTES TILL UNIT 4
- Make a presentation/ppt on 'major pandemics of the world and contribution of health workers' for physics/chemistry.
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Experiments
SECTION–A

1. To determine resistance per cm of a given wire by plotting a graph for potential difference versus current.
2. To find resistance of a given wire using metre bridge and hence determine the resistivity (specific resistance) of its material.
3. To verify the laws of combination (series) of resistances using a metre bridge.
4. To verify the laws of combination (parallel) of resistances using a metre bridge.
5. To compare the EMF of two given primary cells using potentiometer.
6. To determine the internal resistance of given primary cell using potentiometer.
7. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
8. To find the frequency of AC mains with a sonometer(USING HORSE SHOE MAGNET).

SECTION-B

Experiments

1. To find the value of v for different values of u in case of a concave mirror and to find the focal length.
2. To find the focal length of a convex mirror, using a convex lens.
3. To find the focal length of a convex lens by plotting graphs between u and v or between 1/u and 1/v.
4. To find the focal length of a concave lens, using a convex lens.
5. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.
6. To draw the I-V characteristic curve for a p-n junction in forward bias and reverse bias.
7. To draw the characteristic curve of a zener diode and to determine its reverse breaks down voltage.

Activities

(SECTION A)

1. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
2. To assemble the components of a given electrical circuit.
3. To study the variation in potential drop with length of a wire for a steady current.
4. To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.

Section B

1. To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.
2. To study effect of intensity of light (by varying distance of the source) on an LDR.
3. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab. 4. To observe polarization of light using two Polaroids.
5. To study the nature and size of the image formed by a (i) convex lens, (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).

SAMPLE PROJECT
Physics investigatory project on Ohm's Law

1. 1

3. CERTIFICATE Name- Prakhar Seth Roll No.- 14 Scholar No.- 6186 Class- XII-E School– Puranchandra Vidyaniketan This is to certify that the student has worked under my guidance and successfully completed this Investigatory Project in Physics for AISSCE-2016 as prescribed by CBSE for session 2015-2016. Date : - : : Mr. Atul Malhotra Physics Teacher Puranchandra Vidyaniketan, Kanpur 3

4. ACKNOWLEDGEMENT I take extreme pleasure in expressing my profound gratitude towards my physics teacher MR.ATULMALHOTRAfor inspiring me and giving me the invaluable guidance and constant support throughout the course of my project work. He listened to our thoughts & ideas and σ provided us proper guidance in its execution. I am also thankful for the help rendered by our lab assistant MR.SURAJ who made available the required apparatus needed for the experiment . I also undertake that any error or inconsistencies remain my own. Prakhar Seth Class :XII-E Roll No. -14 Scholar No.-6186 4

5. INTRODUCTION Ohm's lawstatesthatthe current through a conductor betweentwo points is directly proportionalto the potentialdifferenceacross the twopoints. Introducing theconstantofproportionality,the resistance, onearrives at theusual mathematicalequationthatdescribes this relationship. Where, I is the current through a conductor in units of amperes, V is the potential differencemeasured across the conductor in units of volts, and & R is the resistance of the conductor in units of ohm's. More specifically, Ohm's law states that the R in this relation is constant, independent of the current. 5 i=v/r

6. RESISTANCE The electrical resistance of an electrical conductor is the opposition to the passage of an electric current through that conductor. The inverse quantity is electrical conductance, the ease with which an electric current passes. Electrical resistance shares some conceptual parallels with the notion of mechanical friction. The SI unit of electrical resistance is the ohm, while electrical conductance is measured in siemens (S). An object of uniform cross section has a resistance proportional to its resistivity and length and inversely proportional to it's cross-sectional area. All materials show some resistance, except for superconductors, which have a resistance of zero. 6

7. RESISTIVITY The resistance of a givenwiredepends primarily on two factors: What material it is made of , and it's shape. Fora given material, the resistance is inversely proportional to the cross- sectional area;for example,a thick copper wire has lower resistance than an otherwise – identical thin copper wire. Also, for a given material, the resistance is proportional to the length; for example , a long copper wire has higher resistance than an otherwise – identical short copper wire. The resistance Rof a conductor of uniform cross-section , therefore , can becomputed as : 7R=l/A

8. where,"L" is the length of the conductor , measured in meter(m), "A" is the cross- sectional area of the conductor measured in m²,"ρ" is the electrical resistivity (also called specific resistance) of the material , measured in Ω-m.The resistivity is the proportionality constant, and therefore depends only on the material of the wire, not the geometry of the wire. Resistivity and Conductivity are reciprocals : ρ=1/σ ← Resistivity is measure of the material's ability to oppose electric current. 8

9. WHAT DETERMINES RESISTIVITY??? The resistivity of different materialsvaries by an enormous amount: For example , the conductivity of Teflon is about10^{3o} times lower thantheconductivity of copper. Whyis there such a difference? Loosely speaking, a metalhas large no. of "delocalized" electrons thatare notstuck in any one place, but free to move across large distances , whereas in aninsulator (like Teflon),each electron is tightlybound to a single molecule , and a great force is required to pullit away . Semiconductors lie betweenthesetwo extremes. Resistivity varies withtemperature . In semiconductors , resistivity also changeswhenexposed to light. 9

10. EXPERIMENTALPROCEDURE Aim: Tofind the resistivity ofwires of different metals using OHM'S LAW. APPARATUS: ☂ 5wires ofdifferent metalsandrespectivelengths. ☂ Abatteryeliminator ☂ d.c.Voltmeter(range3V) ☂ d.c.Ammeter(rangeabout500mA) ☂ Arheostat ☂ Oneplugkey ☂ Thickconnectingwires ☂ Sandpaper... 10

11. PROCEDURE 1) Arrange the various components of the circuit accordingly with plug out of one-way key. 2) Rub the ends of the connecting wires with a sand paperto removeany oxidized insulating coating. Study the circuit carefully and make tight connections accordingly using thick connecting wires. 3) Ensure that the ammeteris connectedin series with the resistance wire with it's positive terminal towards the positive of the battery. Also ensurethat the voltmeter is connected in parallel to resistance coil R in such mannerthat the currententers at it's positive end. 11

12. 4) Connect rheostat such that one of its lower terminals and the upper terminals are used. 4) Insert the plug in key K. 5) Adjust the rheostat so that small currentflows through the circuit. Recordthe readings of the ammeterand the voltmeter. 6) Shift the rheostat contact to shift the currentand take the readings again. 7) Cut the resistance wire at the ends just comingout of voltmeter. Stretch it along the meter scale and measure it's length l. 8) Record your observations. 12

13. OBSERVATION TABLES IRON WIRE ALUMINIUM WIRE current VOLTAGE RESISTENCE 150mA 0.20V 1.3Ω 200mA 0.25V 1.001Ω 300mA 0.30V 1 Ω 13 CURRENT VOLTAGE RESISTANCE 200mA 0.10V 0.5ohm 300mA 0.20V 0.66ohm 400mA 0.30V 0.75ohm

14. MANGANIM WIRE COPPER WIRE CURRENT VOLTAGE RESISTANCE 150mA 0.10V 0.5ohm 200mA 0.20V 0.54ohm 300mA 0.30V 0.6ohm 14 CURRENT VOLTAGE RESISTANCE 150mA 0.20V 1.3ohm 200mA 0.30V 1.5ohm 300mA 0.40V 1.3ohm

15. CALCULATIONS 🖩 For Iron wire: Length of wire= 21cm Thickness= 0.54×10^{-2}m Area= 0.22×10^{-6} m² mean resistance= (1.3+1.001+1)/3= 1.1 Ω resistivity= RA/L= 10.5×10^{-8} Ωm 🖩 For Aluminium wire: Length of wire= 68cm Thickness=0.66×10^{-2}m Area=0.28×10^{-6}m² Mean Resistance=(0.5+0.66+0.75)/3=0.63Ω Resistivity= RA/L= 2.7×10^{-8} Ωm 15

16. 🖩 For manganim wire: Length ofwire=57cm Thickness=0.66×10^{-2} Area=0.19×10^{-6}m² Mean Resistance=(1.3+1.5+1.3)/3=1.36Ω Resistivity= RA/L= 48.2×10^{-8}Ωm 🖩 For aluminium wire: Length of wire=42cm Thickness=0.49×10^{-2}m Area= 0.7703×10^{-6}m² Mean resistance=(0.5+0.54+0.60)/3=0.54Ω Resistivity= RA/L= 1.7×10^{-8} Ωm 16

17. RESULT The resistivity of wires are : 1) For iron wire– 10.5×10^{-8} Ωm 2) For aluminium wire- 2.7×10^{-8} Ωm 3) For manganim wire- 48.2×10^{-8} Ωm 4) For copper wire- 1.7×10^{-8} Ωm ¤*THE GRAPH BETWEEN POTENTIAL DROP AND THE CURRENT THROGH THE

CONDUCTOR IS A STRAIGHT LINE. PRECAUTIONS 1) Connections should be tight. 2) Short circuiting should be avoided. 3) The plug should be inserted only while taking observations otherwise current would cause unnecessary heating in this current. 17

18. CONCLUSION Ohm's law, in the form above , is an extremely useful equation in the field of electrical/electronic engineering because it describes how voltage , current and resistance are interrelated on a "macroscopic" level, that is commonly, as circuit elements in an electrical circuit. Physicist who study the electrical properties of matter at the microscopic level use a closely related and more general vector equation, sometimes also referred to as OHM'S law, having variables that are closely related to the V, I and R scalar variables of Ohm's law , but which are each functions of positions within the conductor. Physicists often use this continuum form of Ohm's law- $E=\rho J$ where "E" is the electric field vector with units of volt /meter, "J" is the current density vector with units of amperes/unit area , and "ρ" is the resistivity with units of Ω-m. The above equations is sometimes written as $J=\sigma E$ where "σ" is the conductivity which is reciprocal of "ρ". 18

SUBJECT: CHEMISTRY

Prepare an investigatory project
Topics already distributed

Complete your chemistry practical files

Do ncert solutions of chapter completed so far

Assignment will be given

Make a presentation/ppt on 'major pandemics of the world and contribution of health workers' for physics/chemistry.

SUBJECT: COMPUTER SC. WITH PYTHON

1. **PROJECT WORK using Python and SQL connectivity project documentation, cover page of project file, contents page, acknowledgement certificate, bibliography extra.**

2. **10 Programs of functions given in online classes in register as well as on laptop FOR PRACTICAL FILE.**

SUBJECT: BIOLOGY

1. Solve questions of the chapters done in online classes from NCERT textbook and exemplar in Notebook.
2. Practice all the diagrams and flow charts of the chapters done.
3. Complete your practical file and project file, topics of the projects are already assigned to all the students.
4. write notes of all the chapters and solve assignments in your notebook which are sent in WhatsApp group.
5. solve CBSE sample papers and question papers of last 5 years in your notebook.
   Doctors' day is celebrated on 1st July in India every year prepare any one of the following activities for interclass competition on doctors day-
   1. PPT (3 minutes)
   2. Your own video (3 minutes)
   3. Slogans on A3 size sheets (two sheets)
   4. Self composed poem (120 to 150 words)
 Note - inter class competition is for all the students of 12th A.

SUBJECT: ACCOUNTS

1. **Revise chapters 1 to 4 of partnership**
2. **Do assignment of chapter - admission**

3. Collect 10 segment reports , balance sheets and statement of profit & loss of companies from newspaper .
4. Frame 10 mcqs each from all the chapters done so far.

SUBJECT: ECONOMICS

*Revise ch-1 to 4 of Indian Economic Development.
*Do all 1,3,4 and 6 marks questions in notebook.
*Complete assignment of higher order thinking skill questions in notebook.

SUBJECT: B.ST.

*Revise ch 1,2,4,11 and 12 .
*Complete the ncert questions of the above chapters.
*Complete the assignments given in your group.
* Complete your project.(Sample project will be shared in the group)

SUBJECT: PHYSICAL EDUCATION(048)

*project work (file) This is for both students (Optional/Additional)

*Practical-1-Fitness test administration for all items.

*Practical-2 procedure for Asanas, Benefits and Contradiction for any two asanas for any two asanas for each life style dieases.

*Practical-3-Procredure for administrating Senior Citizen Fitness Test for 5 elderly family members.

*Practical-4-Any one game of your choice out of the list.labelled diagram of field & equipment (Rules, Terminologies & Skill) (Football, kabaddi,kho kho, volleyball)

BOOK WORK(Only for optional Students)

Reading of chapter 1,2,3,4,5,and 9
*Make fixtures (All type)in register
*Do all MCQ of all topics according to the chapter
*Do all long questions of all chapters in the HW Register
*Make MIND MAP of every Unit

SUBJECT: MARKETING

*Revise chapter 1 .
*Prepare objective type questions from IT skills of employbility skills.
*Complete the assignments shared in the group.
*Complete your project.(Sample project will be shared in the class group)

SUBJECT: MUSIC

🌟👍**you have to make 2mins PPT, Vedio clip or karaoke video clip on the topic: Role of Music world in the covid-19 Pandemic.**

🌟👍**Make one video showing one taal,It's Ekgun and dugun on hand Beats..choice of Taals: Teentaal, Jhap taal and Tilwada taal.**

🌟👍**Complete your all given written work in your Music register and make Music file work too.**

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SUBJECT: COMMERCIAL ART

COMMERCIAL ART

POSTER MAKING -:
Making poster with specified slogan on a given subject in four colour scheme with help of poster colour on paper.

Note - Carefully use in poster making, layout and letter writing ,Emphasis on the subject ,proper colour scheme and overall impression.

 1-Women Empowerment
 2-Save Environment
 3-Save Water
 4-Covid-19 Corona
 5-Ek Bharat shresth Bharat
 6-Save girl child
 7-Incredible India
 8-Yog bhagaye Rog
 9-Digital India
10-Save Electricity

 Use materials -
 Poster colour ,Pencil , Eraser ,Scale ,Colour palette brush
 Half cartridge paper.

SUBJECT: HISTORY

Holiday Home work
Class 12
* Complete assignment of long question answers
*Learn all the chapters done for test
*Research on cbse project work, collect information from different websites and literature.

SUBJECT: GEOGRAPHY

- **Revise all lessons done online**
- **Complete Map Atlas**
- **Frame 10 MCQ from each lesson**
- **Poster Making on Doctors as Warriors for Covid-19**

NOTE : Regular class test of lesson done online once school opens

SUBJECT: POL. SC.

Revise all lessons done online
Frame mcqs of all the chapters(10-15)
Do all the maps in map scrap file(individual work)
Work on the project assigned for 20 marks(group activity) file work +ppt
Practice sample papers and support material given

SUBJECT: HOME SCIENCE

1.Revise the lessons done so far, go through the support material and PPT's related to each lesson.

2. Complete the questions given for revision of each chapter.
3. Make a project on any one of the below given topics

PROJECT
ANY ONE OF THE FOLLOWING PROJECT MAY BE UNDERTAKEN AND EVALUATED-
1. Study of an integrated community based, nutrition/health programme being implemented in own area, with reference to-
a) Programme objectives
b) Focal Group/Beneficiaries
c) Modalities of implementation

2. Visit to the neighbouring areas and interview two adolescents and two adults regarding their perception of persons with special needs.

3. Profile any two person (child/adult) with special needs to find out their diet, clothing, activities,physical and psychological needs.

4. Planning any five messages for nutrition, health and life skills using differen modes of communication for different focal groups.

5. Market survey any five processed foods with their packaging and label information.