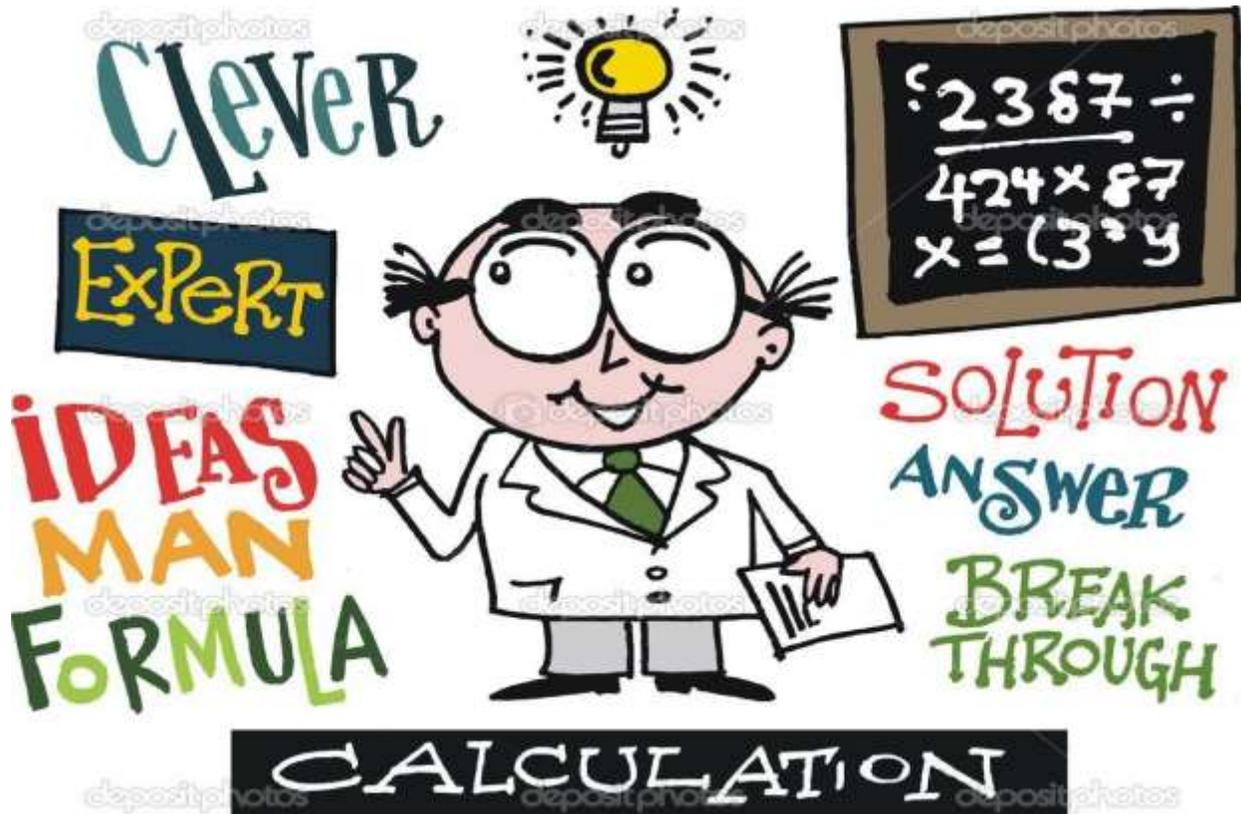


# JAGANNATH INTERNATIONAL SCHOOL

## SUMMER HOLIDAYS HOMEWORK (2020-2021) CLASS XI



## **ENGLISH**

**Read a novel of any of the following author and convert it into a play.**

- Charlotte Bronte
- Oscar Wilde
- Booker T Washington
- Charles Dickens
- Jane Austen
- George Eliot

**Kindly read the following points carefully.**

- Prepare a A4 Size File with white sheets ONLY.
- The script of the play must be written in a proper dialogue/ conversation style with characterization.
- The play must have an attractive and creative poster inviting the people to watch the play. Mention the date, time, venue, etc. as per the format of an event poster.

## **BUSINESS STUDIES**

**Kindly note:** The following questions are to be done in the **A4 SIZE SHEETS**

### **CH-1 NATURE AND PURPOSE OF BUSINESS**

Q1. Name the economic activity in which specialised knowledge is required.

Q2. In which type of secondary industry, various raw materials are combined together to make the final product?

Q3. Name the trade where import of goods is made before the export of goods.

Q4. Simran cooks food at home for her family and Ram cooks food in a restaurant. Who is engaged in business activity? Give reason in support of your answer.

Q5. What type of industry is 'Lumbering'?

Q6. Give an example of activity, which is economic in one sense and non-economic in other sense.

Q7. Neha sells her personal computer at a profit. Will it be considered business? Also, explain the characteristic of business which is being stressed upon.

Q8. Tea is mainly produced in Darjeeling, while cotton in Gujarat and Maharashtra but they are required for consumption in different parts of the country. Which hindrance is reflected here and how can it be removed? Also, under what business activity will it be classified?

Q9. Dr. Kapil is a surgeon in Ganga Ram Hospital and Dr. Rishabh, his friend is a dentist who has set his own clinic. Dr. Rishabh's wife, Ms. Kiran operates her jewellery store. Compare and differentiate the nature of tasks undertaken by them.

Q10. Tulip Ltd. is suffering from losses from the past two years. In an attempt to cover the cost and earn profits in the current year the company decided to use low quality raw material for producing finish goods as this will decrease the cost of production. Identify and explain the objective of business that is being overlooked by the company in the above case.

Q11. Mohan is a Chartered Accountant in a Multinational Company. He gets Rs. 70,000 per month as his salary. On weekends, he goes to nearby village and teaches the slum children and does not charge anything from them. This gives him mental satisfaction.

a. Identify and explain the economic activity in which Mohan is engaged.

b. Name the economic activity if Mohan would have set up his own firm.

c. By teaching slum children free of cost, which objective is Mohan trying to achieve?

Q12. Bhuvan is working as a manager in a company manufacturing shoes. He is a very hardworking and sincere employee of the company. He keeps coming up with new and innovative ideas so as to decrease the cost of production of the company. Yet, neither he is appreciated for his suggestions nor rewarded in form of some increment or incentive. Which objective of business has been overlooked in the above para. Explain it.

# ACCOUNTANCY

**Kindly note:** The following questions are to be done in the **A4 SIZE SHEETS**

## CH-1 INTRODUCTION TO ACCOUNTING

Q1. 'Book keeping is not a part of accounting'. Do you agree with the statement? Justify your answer giving reason.

Q2. Fortune Ltd. has been earning huge profits from the very first year of its formation. The major reason behind such an outstanding performance is the emphasis laid by the company on satisfaction of its customers. The company manufactures the product according to the specification of its customers and also offers numerous after sales services. However, this information is not recorded in the books of account of the company. Why the company is not recording above information in its books of account?

Q3. Name the financial statements used to summarise the accounting information.

Q4. Differentiate between Accounting and Accountancy.

Q5. Name the branch of accounting that helps in determining cost of goods manufactured.

## CH-2 BASIC ACCOUNTING TERMS

Q1. Kumar Ltd. imported from Germany one machinery for sale in India & another machinery for production purpose. Will you treat them as goods or as fixed assets?

Q2. Giving examples, explain each of the following terms:

- a) Returns Outward
- b) Drawings
- c) Prepaid Expense
- d) Drawings

e) Bad debt

f) Fixed Assets

Q3. Differentiate between the following :

a) Current Liability and Non-Current Liability

b) Trade Receivables and Trade Payables

c) Trade Discount and Cash Discount

d) Revenue Receipts and Capital Receipts

### **CH-3 THEORY BASE OF ACCOUNTING, ACCOUNTING STANDARDS AND IFRS**

Q1. What is meant by GAAPs?

Q2. Name and explain the principles of Accounting in the following cases:

a) Value of an asset is not changed according to the change in its market value.

b) Life of a business should be broken into smaller parts.

Q3. Why Closing Stock is valued at cost price or realisable value whichever is lower? Explain.

Q4. 'Business units last indefinitely.' Name and explain the concept on which the statement is based.

Q5. What do you mean by Indian Financial Reporting Standards?

### **CH-5 ACCOUNTING EQUATION**

Q1. Show the effect of following transactions on ACCOUNTING EQUATION:

(a) Harsha started business with cash Rs 2,00,000

(b) Purchased goods from Naman for cash Rs 40,000

- (c) Sold goods to Bhanu costing Rs 10,000 for Rs 12,000
- (d) Bought furniture on credit Rs 7,000

Q2. Prepare ACCOUNTING EQUATION and Balance Sheet from the following:

- (a) Business started with cash 1,75,000
- (b) Purchased goods from Rohit 50,000
- (c) Sales goods on credit to Manish (Costing Rs 17,500) 20,000
- (d) Purchased furniture for office use 10,000
- (e) Cash paid to Rohit in full settlement 48,500
- (f) Cash received from Manish 20,000
- (g) Rent paid 1,000
- (h) Cash withdrew for personal use Rs 1,000

Q3. Prepare ACCOUNTING EQUATION and Balance Sheet from the following:

- a) Ram commenced business with cash Rs 2,00,000
- b) Outstanding rent Rs 2,000
- c) Prepaid insurance Rs5,000
- d) Commission received in advance Rs 10,000
- e) Salary due but not received Rs 5,000.

Q4. Give one example each of the following effects:-

- (i) Increase in assets, Increase in liabilities.
- (ii) Increase in assets, Decrease in assets.
- (iii) Decrease in assets, Decrease in liabilities.

## ECONOMICS

### FOR COMMERCE & HUMANITIES STUDENTS :

Prepare a project on the topic :

‘Impact of lockdown on the life of people’. Make use of illustrations, information through newspaper cuttings, etc. Divide your topic under following heads :

1. History of Covid 19
2. Its consequences – No people affected, Number of deaths, Change in lifestyle of people
3. Impact on economic activities/ Income of the people
4. Positive learnings from the situation.

## PHYSICS

### UNIT I : PHYSICAL WORLD AND MEASUREMENT

**Q1.** Name the physical quantities whose dimensional formulae are as follows:

- i.  $ML^2 T^{-2}$       ii.  $ML^2 T^{-3}$       iii.  $M T^{-2}$       iv.  $ML^{-1} T^{-2}$

**Q2.** Deduce the dimensional formulae for the following physical quantities

- i. Gravitational constant      ii. Power      iii. Heat

**Q3.** The value G, in CGS system is  $6.67 \times 10^{-8} \text{ dyne cm}^2/\text{g}^{-2}$ . Calculate the value in SI units.

**Q4.** Find the density of mercury in SI units if its density in CGS system is  $13.6 \text{ g/cc}$

**Q5.** The surface tension of water is  $72 \text{ dyne/cm}$ . Express it in SI units.

**Q6.** An electric bulb has a power of  $500 \text{ W}$ . Express it in CGS units.

**Q7.** If the value of atmospheric pressure is  $10^6 \text{ dyne/cm}^2$ , find its value in SI units.

**Q8.** Check whether the following equations are dimensionally correct or not

- i.  $12 m v^2 = m g h$       ii.  $F S = 12 m v^2 - 12 m u^2$
- iii.  $S = u t + 12 a t^2$       iv.  $E = m c^2$

v.  $T = 2\pi \lg$

vi.  $v = P$

vii.  $v = 12 \lg Tm$

viii.  $T = 2\pi R \lg$

**Q9.** The velocity  $v$  of a particle depends upon the time ' $t$ ' according to the equation

$$V = ab + b t + c+dt$$

Determine the units of  $a$ ,  $b$ ,  $c$  and  $d$ . What physical quantities they represent. All have SI units.

**Q10.** Find the dimensions of  $a$  and  $b$  in the equation:

$$F = a x + b t^2, \text{ where } F \text{ is force, } x \text{ is distance and } t \text{ is time.}$$

**Q11.** Find the dimensions of  $a$  and  $b$  in the equation:

$$P = b-xa t, \text{ where } P \text{ is pressure, } x \text{ is distance and } t \text{ is time.}$$

**Q12.** Consider a simple pendulum, having a bob attached to a string, that oscillates under the action of the force of gravity. Suppose that the period of oscillation of the simple pendulum depends on (i) mass  $m$  of the bob (ii) length  $l$  of the pendulum and (iii) acceleration due to gravity  $g$  at the place. Derive the expression for its time period using method of dimensions.

**Q13.** The velocity ' $v$ ' of water waves depends on the wavelength ' $\pi$ ' density of water ' $\rho$ ' and the acceleration due to gravity ' $g$ '. Deduce by the method of dimensions the relationship between these quantities.

**Q14.** Assuming that the mass  $M$  of the largest stone that can be moved by a flowing river depends upon ' $v$ ' the velocity, ' $\rho$ ' the density of water and on ' $g$ ' the acceleration due to gravity. Show that  $M$  varies with the sixth power of the velocity of flow.

**Q15.** The frequency ' $v$ ' of vibration of a stretched string depend upon:

- I. its length  $l$
- II. its mass per unit length ' $m$ ' and
- III. the tension  $T$  in the string.

Obtain dimensionally an expression for frequency  $\nu$ .

**Q16.** A planet moves around the sun in nearly circular orbit. Its period of revolution 'T' depend upon:

- I. radius 'r' of orbit
- II. mass 'M' of the sun and
- III. the gravitational constant G.

Show dimensionally that  $T^2 \propto r^3$

**Q17.** The escape velocity  $v$  of a body depends upon i) the acceleration due to gravity ii) the radius of the planet R. Establish dimensionally the relationship between  $v$ ,  $g$  and R.

**Q18.** A large fluid star oscillates in shape under the influence of its own gravitational field. Using dimensional analysis, find the expression for period of oscillation (T) in terms of Radius of star (R), mean density of fluid ( $\rho$ ) and Universal gravitational constant G.

**Q19.** The air bubble formed by explosion inside water perform oscillations with time period T which depends on pressure (P), density ( $\rho$ ) and on energy due to explosion (E). Establish relation between T, P, E and  $\rho$ .

**Q20.** A U-tube of uniform cross section contains mercury upto a height h in either limb. Obtain an expression for the time period of oscillation assuming that T depends on h, g and  $\rho$ .

**Q21.** What are micron, fermi and angstrom?

**Q22.** If  $X = a + bt + ct^2$  where X is in metres, t is in seconds, What is the unit of c?

**Q23.** Find the dimensions of a and b in the equation  $F = at + bt^2$ , where F is force and t is time.

**Q24.** Find a physical quantity which has dimensional formula as that of Energy/ (Mass \* Length).

**Q25.** A physical quantity P is given as

$$P = (a^3 b^2) / (c^{1/2} d)$$

The percentage errors in measurements in a,b,c and d are 1%, 3%, 4% and 2% respectively, what is the percentage error in P?

**Q26.** Find the fractional error in Z, if

$$Z = (A^4 B^{1/3}) / (C D^{3/2})$$

### **UNIT II : MOTION IN A STRAIGHT LINE**

**Q1.** A jet plane starts from rest with an acceleration of  $\text{ms}^{-2}$  and makes a run for 35s before taking off. What is the minimum length of the runway and what is the velocity of the jet at take off?

**Q2.** An electron travelling with a speed of  $5 \times 10^3 \text{ m/s}$  passes through an electric field with an acceleration of  $10^{12} \text{ ms}^{-2}$ . (i) How long will it take for the electron to double its speed ? (ii) What will be the distance covered by the electron in this time ?

**Q3.** A driver takes 0.20 s to apply the brakes after he sees a need for it. This is called the reaction time of the driver. If he is driving car at a speed of 54km/h and the brakes cause a deceleration of  $6.0 \text{ m/s}^2$ , find the distance travelled by the car after he sees the need to put the brakes.

**Q4.** On a foggy day two drivers spot each other when they are just 80 meters apart. They are travelling at 72km/h and 60km/h, respectively. Both of them applied brakes retarding their cars at the rate of  $5 \text{ m/s}^2$ . Determine whether they avert collision or not.

**Q5.** A hundred meter sprinter increases her speed from rest uniformly at the rate of  $1 \text{ ms}^{-2}$  upto three quarters of the total run and covers the last quarter with uniform speed. How much time does she take to cover the first half and the second half of the run ?

**Q6.** A motor car starts from rest and accelerates uniformly for 10s to a velocity of 20 m/s. It then runs at a constant speed and is finally brought to rest in 40 m with a constant acceleration. Total distance covered is 640 m. Find the value of acceleration, retardation and the total time taken.

**Q7.** An athlete runs a distance of 1500m in the following manner. (i) Starting from rest, he accelerates himself uniformly at  $2 \text{ ms}^{-2}$  till he covers a distance of 900m.

(ii) He, then runs the remaining distance of 600m at the uniform speed developed. Calculate the time taken by the athlete to cover the two parts of the distance covered. Also find the time, when he is at the Centre of the track.

**Q8.** A man is  $s=9$  m behind the door of a train when it starts moving with acceleration  $a= 2 \text{ ms}^{-2}$ . The man runs at full speed. How far does he have to run and after what time does he get into the train? What is his full speed?

**Q9.** A car accelerates from rest at a constant rate  $\alpha$  for some time, after which it decelerates at a constant rate  $\beta$  to come to rest. If the total time elapsed is  $t$  second, then calculate: the maximum velocity attained by the car, and the total distance travelled by the car in terms of  $\alpha, \beta$  and  $t$ .

**Q10.** A body covers 12 m in 2nd second and 20m in 4th second. How much distance will it cover in 4 seconds after 5th second?

**Q11.** Two buses A and B are at position 50 m and 100 m from the origin at time  $t=0$ . They start moving in the same direction simultaneously with uniform velocity of 10 m/s and 5 m/s. Determine the time and position at which A overtakes B.

**Q12.** An object is moving along +ve x-axis with a uniform acceleration of  $4 \text{ ms}^{-2}$ . At time  $t=0$ ,  $x=5$  m and  $v=3 \text{ ms}^{-1}$ . What will be the velocity and position of the object at time  $t=2\text{s}$ ? What will be the position of the object when it has a velocity of  $5 \text{ ms}^{-1}$ ?

**Q13.** A ball thrown vertically upwards with a speed of  $19.6\text{ms}^{-1}$  from the top of a tower returns to the earth in 6s. Find the height of the tower.

**Q14.** A ball thrown up is caught by the thrower after 4 s. How high did it go and with what velocity was it thrown? How far was it below the highest point 3s after it was thrown?

**Q15.** A ball is thrown vertically upwards with a velocity of 20 m/s from the top of a multistoreyed building. The height of the point from where the ball is thrown is 25m from the ground. (i) How high will the ball rise? (ii) How long will it be before the ball hit the ground? (iii) Trace the trajectory of this ball.

**Q16.** A food packet is released from a helicopter, which is rising steadily at 2 m/s. After two seconds (i) What is the velocity of the packet? (ii) How far is it below the helicopter? Take  $g= 10 \text{ ms}^{-2}$

## CHEMISTRY

### ASSIGNMENT-SOME BASIC CONCEPTS OF CHEMISTRY

**Q1.** Account for the following:

- In the combustion of methane in air, methane is limiting reagent.
- Molality is preferred over molarity in expressing the concentration of a solution.
- It is necessary to balance a chemical equation.
- Air is sometime considered as a heterogeneous mixture.

**Q2.** When two substances A and B are mixed together in a pestle and mortar, a large amount of heat is evolved and a new substance C is formed. C has the properties different from A and B. Is C an element, a compound or a mixture?

**Q3.** How many moles and how many grams of sodium chloride (NaCl) are present in  $250\text{cm}^3$  of a 0.5M NaCl solution?

**Q4.** If 6.3 gram of  $\text{NaHCO}_3$  are added to 15 gram of  $\text{CH}_3\text{COOH}$  solution, the residue is found to be 18gram. What is the mass of  $\text{CO}_2$  released in the reaction?

**Q5.** 3.0 gram of  $\text{H}_2$  react with 29.0 gram of  $\text{O}_2$  to form  $\text{H}_2\text{O}$

- Which is the limiting reactant?
- Calculate the maximum amount of  $\text{H}_2\text{O}$  that can be formed.
- Calculate the amount of the reactant left unreacted.

**Q6.** Calculate molality, molarity and mole fraction of KI if the density of 20% (mass/mass) aqueous KI is 1.202g/ml.

**Q7.** 2.746 gm of compound gave on analysis 1.94 gm of silver, 0.268 gm sulphur and 0.538 gm of oxygen. Find the empirical formula of the compound.

### ASSIGNMENT -STRUCTURE OF ATOM

**Q1.** An electron is in one of the 4p orbital. Give the possible values of n, l and m for the electron.

**Q2.** Can we apply uncertainty principle to a stationary electron?

**Q3.** When is the energy of electron regarded as zero?

**Q4.** Which of the following sets of orbitals are degenerate and why?

- 1s, 2s and 3s in Mg atom
- 2p<sub>x</sub>, 2p<sub>y</sub> and 2p<sub>z</sub> in carbon atom.

**Q5.** How many nodes are present in 3p orbital?

**Q6.** What will happen to the wavelength associated with a moving particle if its velocity is reduced to half ?

**Q7.** How many electrons are present in all sub shells (fully filled)  $n+l=5$  ?

**Q8.** What is Zeeman effect and Stark effect ?

**Q9.** Light of wavelength 4000 Å falls on the surface of caesium. Calculate the energy of the

photoelectron emitted. The critical wavelength for photoelectric effect in caesium is 6600 Å

**Q10.** Calculate the frequency and the wavelength of the radiations in nm emitted when an electron in the hydrogen atoms jumps from third orbit to the ground state. In which region of electromagnetic spectrum will this line lie?

### **BIOLOGY**

❖ A *herbarium* is a collection of preserved plant specimens and associated data used for scientific study. Prepare a well decorated herbarium project file including a minimum of 10 plant specimens. Mention the following for each of the specimen :

- Date of collection
- Location of collection
- Taxonomy
- Common name
- Scientific name
- Economic importance if any

### **MATHEMATICS**

- Five activities from Lab Manual.
- Complete Exercises of chapter-1 (Sets) and Chapter-5 (Complex numbers)

### **PHYSICAL EDUCATION**

No holidays homework!

## INFORMATICS PRACTICES

1. Define a computer.
2. How does an ALU work?
3. Briefly explain the working of a control unit.
4. Difference between Hardware and Software.
5. What is an Operating System?
6. Explain the types of operating systems with examples.
7. "Hardware is of no use without software and software cannot be used without Hardware." Explain.
8. Specify the measuring units of memory.
9. What are the output devices? Give some examples.
10. Difference between RAM and ROM.
11. Difference between interpreter and compiler.
12. What are the secondary storage devices? Give examples
13. What is Python?
14. Who developed python and when?
15. State some distinguishable features of Python.
16. What is the difference between interactive mode and script mode in Python.
17. Define the following Python terms: -
  - (a) tokens
  - (b) keywords
  - (c) identifiers
  - (d) operators
  - (e) Punctuators
18. Write a python code to enter two numbers from the user and calculates Product.
19. Write a python code to enter side of a square and calculates area and perimeter of square.
20. Find the output: -
  - (a) `>>> print("Hello")`

```
(b)   x = 3
      y = x+2
      x+ = y
      print(x, y)
```

**Go to the following links: -**

Introduction to programming language - <https://youtu.be/90SGT9qJZa4> or <https://youtu.be/rV96bx6pl4Q>

Getting started with Python programming - <https://youtu.be/yW8ztoxiZU> or <https://youtu.be/xRM1KFRn7nk>

Write your first code in python - <https://youtu.be/cdQXNAkVJwA> or [https://youtu.be/Wp\\_IYwwCNM](https://youtu.be/Wp_IYwwCNM)

Learn programming - <https://www.youtube.com/channel/UC6BYXyC9Xo5JVEJosWmvZVQ>

## **PSYCHOLOGY**

**Make a project on behaviour of citizens of Sikkim and Delhi in relation to their lifestyle.**

## **POLITICAL SCIENCE**

### **1. WRITTEN ASSIGNMENT :**

a) Explain in detail the following Fundamental Right ( with their Articles)

- RIGHT TO EQUALITY
- RIGHT TO LIBERTY AND PERSONAL FREEDOMS
- RIGHT TO FREEDOM OF RELIGION
- RIGHT AGAINST EXPLOITATION
- CULTURAL AND EDUCATIONAL RIGHT
- RIGHT TO CONSTITUTIONAL REMEDIES

- b) Explain the Directive Principles of State Policy . Write about their relationship with Fundamental Rights.
- c) Which Fundamental Right is in your opinion the most important right ? Summarise its provisions and give arguments to show why it is most important.
- d) Write a short note on Fundamental Duties.

## **2. Activity :-**

Find out about the Articles, Parts and Schedules of Indian Constitution.

- a. At the time of independence
- b. In today's scenario

## **3. READING TASK :-**

- a. Read newspapers especially the Editorial Page everyday.
- b. Read more about Indian Constitution.

## **COMPUTERS SCIENCE**

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<https://youtu.be/xRM1KFRn7nk>

Write your first code in python - <https://youtu.be/cdQXNAkVJwA> or  
[https://youtu.be/Wp\\_IYwwCNM](https://youtu.be/Wp_IYwwCNM)

Learn programming - <https://www.youtube.com/channel/UC6BYXyC9Xo5JVEJosWmvZVQ>