

ARMY PUBLIC SCHOOL KANPUR CANTT
HOLIDAY HOMEWORK:2019-20
CLASS X
ENGLISH

(In project file)

1. Read the novel "The Invisible Man" or "The Diary of a Young Girl" and write the book review in about 120-150 words.
2. **Express yourself by writing letters.....**

Students, it is well known to us how important letters are when we express our feelings and dealings in words. Mastering letter writing skill is always going to benefit us in our day-to-day life. Therefore, let's try to know them fully well.....

Write a letter to the Editor of a local daily, expressing your views how the government and public can boost the development of tourism industry in India.

3. When Amit woke up in the morning and looked at his face in the mirror, he did not recognize the face looking back at him. 'This is not me he cried aloud ...

Use the above beginning in your story and give a suitable title to it.

SCIENCE
PHYSICS

One Mark Questions

1. What is the use of ammeter and voltmeter in an electric circuit.
2. Draw the symbols of the following components used in electric circuit
a. Battery b. variable resistance
3. A conductor has 9.6×10^{-19} coulomb positive charge. How many electrons does it have more or less than normal?
4. Why are coils of electric toaster made of an alloy rather than a pure metal?
5. What kind of graph is obtained by plotting current against potential difference across a conductor.
6. State the relationship between the electric current, the charge moving through a conductor and the time of flow.
7. Why is fuse inserted in an electric circuit?

Two mark Questions

8. Mention factors on which resistance of a conductor depends.
9. What is the commercial unit of energy? Establish the relationship between commercial unit and S I unit of energy.
10. (a) State Ohm's law. Express it mathematically.
(b) Draw a circuit diagram to verify Ohm's law.

11. Two resistors are connected in series and then in parallel. What effect will it have on the reading of voltmeter and ammeter?
12. (a) $R = R_1 + R_2 + R_3$ is called combination.
(b) $1/R = 1/R_1 + 1/R_2 + 1/R_3$ is called combination.
13. What precautions should be taken while studying dependence of current on voltage?
14. Calculate the charge passing through an electric bulb in 2 minute if the value of current is 200 mA.
15. A piece of wire of resistance 20Ω is drawn out so that its length is increased to twice of its original length. Calculate the resistance of the wire in the new situation.
16. A wire of resistance 10Ω is bent in the form of a closed circle. What is the effective resistance between the two points at the end of any diameter?

Three Mark Questions

17. Derive the relation $R = R_1 + R_2 + R_3$ when resistances are joined in parallel.
18. Derive expression for heat generated by electric current. Give Joule's law of heating.
19. In a household electric circuit different appliances are connected in parallel to one another. Give three reasons.
20. Calculate the resistance of 100 m length of wire of cross-sectional area 0.01 mm^2 and of resistivity 5.0×10^{-6} ohm-cm.
21. A geyser is rated 1500 W, 250 V. It is connected to 250 V mains. Calculate:
 - (i) The current drawn
 - (ii) The energy consumed in 50 hours and
 - (iii) The cost of energy consumed at Rs 3.50 per unit.
22. Two wires of equal length and the same material but their diameters are in the ratio 2:3. If resistance of first wire is 3.6Ω , what will be the resistance of other wire.
23. Two resistors with resistances 5Ω and 6Ω are connected to a battery of e.m.f. 6 V so as to obtain
 - (i) minimum current flowing,
 - (ii) maximum current flowing
 - (a) How will you connect the resistances in each case?
 - (b) Calculate the strength of the current in the circuit in the two cases.
24. Three resistors of 10Ω , 6Ω and 4Ω are connected in series in a circuit. Potential difference across the combination is 10 volt. Find the current and potential difference across each resistor.
25. A wire of uniform thickness with a resistance of 27Ω is cut into three equal pieces and they are joined in parallel. Find the resistance of parallel combination.
26. A bulb is rated at 200 V, 100 W. What is its resistance? Four such bulbs are lighted for 5 hours. What is the electric al energy consumed? Calculate the cost if the rate is Rs. 2.50 per unit.
27. In a house, two bulbs of 60 W are lighted 4 hours per day and four 100 W bulbs are lighted for 5 hours per day. Calculate the energy consumed in kWh in 30 days in that house.

Five Mark Questions

- 28.(a) Derive the relation $R = R_1 + R_2 + R_3$ when resistances are joined in series.

(b) A wire of resistance of 10 ohm is bent in the form of a closed circle. What is the effective resistance between the two points at the end of any diameter.

29.State Ohm's law. How can it be verified experimentally? Does it hold good in all conditions?

30.(a) List the factors on which the resistance of a cylindrical conductor depends and hence, write an expression for its resistance.

(b) How will the resistance of a conductor change when its length is tripled by stretching it?

(c)) How will the resistivity of a conductor change when its length is tripled by stretching it?

HOTS

31. Why is an ammeter likely to be burnt out if it is connected in parallel in a circuit?

32. What are the possible values of resistances which one can obtain by using resistors of values 2 Ω , 3 Ω and 6 Ω ? Justify your answer.

33. A given length of wire is doubled on itself and this process is repeated once again. By what factor does the resistance of the wire change?

CHEMISTRY

Q1. Project

List out antioxidants present in five processed food articles Write an article about their effect on human body.

Guidelines:

(a) Work to be submitted in A4 size coloured sheets.

(b) Paste wrapper of relevant food items.

(c) Project will be evaluated on the Basis of following articles:-

(i) Presentation

(ii) Content

(iii) Timely submission

Q-2. Write the answers of following questions in your class notebook only-

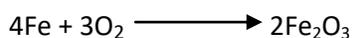
(i) Can a combination reaction be redox reaction? Give an example

(ii) How can you prove experimentally that silver is less reactive than copper?

(iii) Give an example of photochemical decomposition reaction

(iv) Suggest any four methods to avoid rancidity in food items.

(v) In the given reaction



Identify :-

(a) Substance oxidised

(b) Substance Reduced

(c) Oxidising Agent

(d) Reducing Agent

BIOLOGY

1. Given below are some crucial laws related to the environment. Make a project in the form of a scrap book on coloured A-4 sheets.

- Collect information from the internet about the assigned ACT.
- State 10 salient features about the ACT.
- Make an interesting poster/collage based on the ACT & methods of its implementation.
- Compose a poem on the topic of the assigned ACT.
- On the basis of news & articles, state your opinion about the implementation of the ACT in the present situation

- Roll no. ----- 1 to 10 WILDLIFE PROTECTION ACT
- Roll no. ----- 11 to 20 WATER POLLUTION ACT
- Roll no. ----- 21 to 30 AIR POLLUTION ACT
- Roll no. ----- 31 to 40 NOISE POLLUTION ACT
- Roll no. ----- 41 to 50 MINING ACT

2. Revise the given question bank of CH-LIFE PROCESSES:

Q1. The kidneys in human beings are a part of the system for

- (a) nutrition.
- (b) respiration.
- (c) excretion.
- (d) transportation.

Q2. The xylem in plants are responsible for

- (a) transport of water.
- (b) transport of food.
- (c) transport of amino acids.
- (d) transport of oxygen.

Q3. The autotrophic mode of nutrition requires

- (a) carbon dioxide and water.
- (b) chlorophyll.
- (c) sunlight.
- (d) all of the above.

Q4. The breakdown of pyruvate to give carbon dioxide, water and energy takes place in

- (a) cytoplasm.
- (b) mitochondria.
- (c) chloroplast.
- (d) nucleus.

Q5. Movement of food through oesophagus is due to

- (a) Lubrication by saliva
- (b) Peristalsis
- (c) Gravitational Pull
- (d) All of the above

Q6. Where is bile produced?

- (a) Gall bladder
- (b) Blood
- (c) Liver
- (d) Spleen

Q7: In normal expiration, the diaphragm is

- (a) Arched
- (b) Flattened
- (c) Perforated
- (d) None of these

Q8: The correct pathway of blood in circulatory system is

- (a) atria → ventricles → arteries → veins
- (b) ventricles → atria → veins → arteries
- (c) ventricles → veins → arteries → atria
- (d) veins → ventricles → atria → arteries

Q9: Respiration is a process in which

- (a) Energy is stored in the form of ADP
- (b) Energy is released and stored in the form of ATP
- (c) Energy is used up
- (d) Energy is not released at all.

Q 10: Name an organ which is part of two body systems.

Q11: Why do raw bread taste sweeter on mastication?

Q12: How are fats digested in our bodies? Where does this process take place?

Q13: What is the role of saliva in the digestion of food?

Q14: Why will simple diffusion not meet the requirement of human beings?

Q15: What criteria do we use to decide whether something is alive?

Q16: After long running, you may experience cramps in your leg muscles. Whats the reason behind this?

Q17: What processes would you consider essential for maintaining life?

Q18: How do villi enhance absorption of food in the intestine?

Q19: Why bile juice is considered important even though it does not contain any digestive enzymes?

Q20: Which organs secrete the following enzymes:

Q21: Name the factors that affect photosynthesis.

Q22: Name the vestigial part of human alimentary canal?

Q23: What is the name given to rhythmic wave like manner occurring in alimentary canal?

Q24: The bark of woody plants is dead but the inner layers inside the bark are living. How do they get oxygen and release carbon dioxide?

Q25: What are lenticels?

Q26: How does photosynthesis occur?

Q27: Name the mode of nutrition in an organism that uses simple substances like CO₂ and water to prepare food inside its body?

Q28: What are the differences between autotrophic nutrition and heterotrophic nutrition?

Q29: Read following statements from A to E and identify the relevant life process from the following word list.
growth, transport, synthesis, regulation, nutrition

A. A butterfly sucking the nectar from the flowers in a garden.

B. A boy shouts with excitement when his school team wins the match on the last ball.

C. After finishing lunch, Mohan's blood distributes the food molecules to different cells of his body.

D. Green plants prepares starch (complex substance) from simpler chemicals.

E. Radha finds her height has increased by 4 cm since her last birthday.

Q30: What is osmoregulation?

Q31: What are the different ways in which glucose is oxidized to provide energy in various organisms?

Q31: Which organ of the plant body helps in osmoregulation?

Q32: Which organelle of the cell in animals helps in osmoregulation?

Q33: If kidney fails to reabsorb water, the tissues would

- (a) remain unaffected
- (b) shrink to shrivel
- (c) absorb water from blood
- (d) take more oxygen from blood

Q34: How does transpiration pull help in ascent of sap?

Q35: In what form excretion takes place in plants?

Q36: What are the components of the transport system in highly organized plants?

Q37: What is meant by double circulation? Mention its advantages.

Q38: Who has longer small intestine tiger or cow?

Q39: Leaves of a healthy potted plant are coated with Vaseline to block the stomata.

Will this plant remain healthy for long? State three reasons to support your answer.

Q40: Outline inhalation exhalation cycle.

Q41: Hemoglobin is a type of

- (a) Carbohydrate
- (b) Skin Pigment
- (c) Vitamin
- (d) Respiratory Pigment

Q42: What are the components of the transport system in human beings? What are the functions of these components?

Q43: Why is it necessary to separate oxygenated and deoxygenated blood in mammals and birds?.

Q44: Why is there extra air in our lungs after exhaling?

Q46: Which cell are the site of exchange of gases?

Q47: How are the lungs designed in human beings to maximize the area for exchange of gases?

Q48: Why blood is necessary for oxygen delivery to all parts of the body in larger animals?

Q49: Define homeostasis.

Q50: Name the organ systems that help us maintain homeostasis.

Q51: Wastes concentrated in the tubules of Bowman's capsule are called ____.

- (a) salts.
- (b) juices
- (c) urine
- (d) amino acids

Q52: What in kidneys is analogous to alveoli in lungs?

Q53: State the role and function of lymph in human transport system.

Q54: What is the basic reason of urine production?

Q55: State the role of kidneys in human transport system.

Q56: Who discovered systemic blood circulation system in human body?

Q57: What is pulmonary circulation and systemic circulation?

Q60: Which fluid is also known as tissue fluid?

Q61: What is sphygmomanometer?

Q62: What is the function of ureter?

Q63: Assertion and Reason Type

Assertion: Bile is essential for fat digestion

Reason: Fats cannot be digested without emulsification

Use the following Key to choose the appropriate answer.

- (a) Both Assertion & Reason are True & Reason is a correct explanation of the Assertion.
(b) If both Assertion & Reason are True but Reason is not a correct explanation of the Assertion.
(c) If Assertion is True but the Reason is False.
(d) If both Assertion and Reason are False

Q64: Chyme is _____.

- (a) Digestive enzyme secreted by stomach.
(b) Hormone secreted by islets of Pancreas
(c) food which enters into intestine from stomach.
(d) Part of bile juice which stores in gall bladder.

Q65: What is the nature of Chyme? Acidic or Basic or Neutral?

Q66: During daytime transpiration and photosynthesis are interlinked. What do you mean by this statement?

Q67: 'Sweating in animals' is equivalent to what in plants?

Q68: What factor contribute to rate of transpiration?

Q69: How does transpiration help plants?

Q70: Name the mineral required for healthy growth of teeth.

Q71: Name the chemical used to detect presence of starch.

Q72: What is the function of mucus secreted in stomach during digestion?

Q73: What is the optimum temperature for photosynthesis?

Q74: Differentiate between Blood and Lymph

Q75: How does diaphragm help in inhalation?

SOCIAL SCIENCE

Make a project file on any one of the following topic:-

1. Social issues

Or

2. Sustainable development

or

3. Consumer right

4. **Objective:** The overall objective of the project work is to help students gain an insight and pragmatic understanding of the theme and see all the Social Science disciplines from interdisciplinary perspective. It should also help in enhancing the Life Skills of the students. Students are expected to apply the Social Science concepts that they have learnt over the years in order to prepare the project report.

If required, students may go out for collecting data and use different primary and secondary resources to prepare the project. If possible, various forms of art may be integrated in the project work.

Note: (For class IX- X)

- A4 size page(15-20)
- Spiral binding
- Hand written

MATHEMATICS

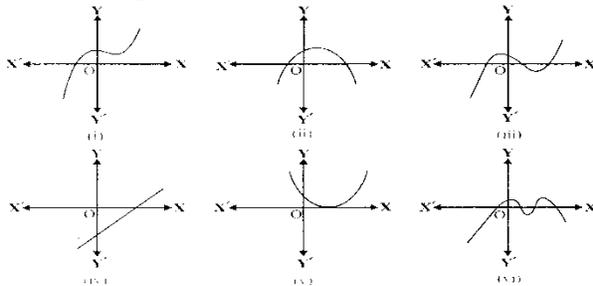
Revise the chapters taught in the class and do the following questions.

Assignment 1 (Real Number)

1. By using Euclid's algorithm, find the largest number which divides 650 and 1170.
2. By using Euclid's algorithm, find the HCF of 120, 224 and 256.
3. Write the prime factorization of 103428 by using the factorization tree.
4. Show that one and only one out of n , $n + 2$, $n + 4$ is divisible by 3, where n is any positive integer.
5. If the HCF $(24, x) = 6$ and LCM $(24, x) = 144$, then find the value of x .
6. Express $0.\overline{0.36}$ as a fraction in simplest form.
7. If p is a prime number, then prove that \sqrt{p} is irrational number.
8. If 'a' is a rational \sqrt{b} is irrational, then prove that $(a + \sqrt{b})$ is irrational.
9. Show that $(2 + \sqrt{3})$ is an irrational.
10. Prove that $\sqrt{5} + \sqrt{3}$ is an irrational number.

Assignment 2 (Polynomials)

1. Each is the graph of $y = p(x)$, where $p(x)$ is a polynomial.



For each of the graphs, find the number of zeroes of $p(x)$.

2. Find the zeroes of the quadratic polynomial $x^2 + 7x + 10$, and verify the relationship between the zeroes and the coefficients.
3. Find a quadratic polynomial, the sum and product of whose zeroes are -3 and 2, respectively.
4. (a) How many zeros are there in a quadratic polynomial?
(b) Is it necessary that 0 is a zero of the polynomial?
5. If 1 is a zero of the polynomial $x^2 + 5x - 6$, find the remaining integral zero of the polynomial, if it has any.
6. Find the zeros of the quadratic polynomial $x^2 + 7x + 10$ and verify the relationship between the zeros and coefficients of the polynomial.
7. Form the quadratic polynomial, the sum and the product of their zeros respectively being given below:
(i) $0, \sqrt{3}$ (ii) $-1, -2/5$.
8. Find the value of p for which the polynomial $x^3 + 4x^2 - px + 8$ is exactly divisible by $x - 2$.
9. Obtain all the zeros of $3x^4 + 6x^3 - 2x^2 - 10x - 5$ if two of its zeros are $\sqrt{5/3}$ and $-\sqrt{5/3}$.

10. If 3 is a zero of the polynomial $2x^3 + 5x^2 - 28x - 15$, find the other two zeros of the polynomial.

Assignment 3(Linear Equations)

1. Solve the following system of equations graphically: $2x + y - 3 = 0$, $2x - 3y - 7 = 0$

2. Show graphically that the system of equations $2y = 4x - 6$, $2x = y + 3$ has infinitely many solutions.

3. Solve the following system of equations by the substitution method

$$\frac{x}{10} + \frac{y}{5} + 1 = 15 \quad \frac{x}{8} + \frac{y}{6} = 15$$

4. Solve the following system of equations by the elimination method:

$$\frac{x}{4} + \frac{y}{5} = \frac{x}{5} + \frac{y}{4} - 1 = 22$$

5. Solve the following system of equations by the method of cross- multiplication.

$$\frac{5}{x+y} - \frac{2}{x-y} + 1 = 0 \quad \frac{15}{x+y} + \frac{7}{x-y} - 10 = 0$$

6. The perimeter of an isosceles triangle is 20cm. If each equal side is equal to two times the base, find the sides of the triangle.

7. Obtain the condition for the following system of linear equations to have a unique solution: $ax + by = c$, $lx + my = a$

8. Use a simple graph paper and draw the graph of the following equations: $2y - x = 8$, $5y - x = 14$, $y - 2x = 1$. Obtain the vertices of the triangle so formed.

9. 2 men and 5 boys can do a piece of work in 4 days while 4 men and 4 boys can do the same work in 3 days. How long would it take for (i) 1 man to do it alone, (ii) 1 boy to do it alone (iii) 1 man and 1 boy to do it together?

10. For what value of k the system of equations $kx - 3y + 6 = 0$, $4x - 6y + 15 = 0$ represents parallel lines ?

Assignment 4(Quadratic equations)

1. If the roots of the equation $(a - b)x^2 + (b - c)x + (c - a) = 0$ are equal, prove that $2a = b + c$.

2. Find the value of a, such that the quadratic equation $(a - 3)x^2 + 2(a - 4)x + 4 = 0$ has equal roots.

3. A passenger train takes 2 hours less for a journey of 300 km if its speed is increased by 5 km/h from its usual speed. Find the usual speed of the train.

4. If $x = 2$ and $x = 3$ are the roots of the equation $3x^2 - 2kx + 2m = 0$, find the values of m.

5. Determine whether the quadratic equation $25x^2 + 20x + 7 = 0$ has real roots, if so, find the roots.

6. If -4 is a root of the quadratic equation $x^2 + px - 4 = 0$ and the quadratic equation $x^2 + px + k = 0$ has equal roots, find the value of k.

7. A plane left 30 minutes later than the scheduled time and in order to arrive its destination 1500 km away in time, it has to increase its speed by 250 km/h from its usual speed. Find its usual speed.
8. The product of two successive multiples of 5 is 300. Determine the multiples.
9. Solve the equations by factorization: $x^2 (a + b)^2 - 4abx - (a - b)^2 = 0$
10. Find the whole number which when decreased by 20 is equal to 69 times the reciprocal of the number.
11. The angry Aijun carried some arrows for fighting with Bheeshm. With half of arrows, he cut down arrows thrown by Bheeshm on him and with six other arrows he killed the rath driver of Bheeshm. With one arrow each he knocked down the rath, flag and bow of Bheeshm. Finally, with one more than four times the square root of arrows he laid Bheeshm unconscious on arrow bed. Find the number of arrows Aijun had.
12. For what value of m will the equation $2mx^2 - 2(1 + 2m)x + (3 + 2m) = 0$ have real but distinct roots? When will the roots be equal?

Assignment 5 (A.P.)

1. Find the 12th, 24th and n th terms of the A.P. : 9, 13, 17....
2. In an A.P., if the 5th and 12th terms are 30 and 65 respectively, what is the sum of the first 20 terms?
3. Find the sum of the first 24 terms of the sequence where n th term is given by $a_n = 3 + (2/3)n$.
4. Show that the sum of all odd integers between 1 and 1000 which are divisible by 3 is 8366.
5. Find $a_{30} - a_{20}$ for the A.P. -9, -14, -19, -24
6. If 10 times the 10th term of an A.P. is equal to 15 times the 15th term, show that 25th term of the A.P. is zero.
7. How many terms of the series 54, 51, 48 should be taken so that their sum is 513? Explain the double answer.
8. Which term of the sequence 17, 16!, 15, 14 is the first negative term?
9. Calculate the sum of the first 24 terms of the list of numbers whose n th term is $a_n = 2n + 3$. where a is the first term of A.P.
10. A tree in each year grows 4 cm less than it grew in the previous year. If it grew 1 metre in the 1st year, in how many years will it have ceased growing and what will be its height then?

COMPUTERS

Q. Write the HTML code to generate a Web Page in the format given below :

FLIPKART
<ul style="list-style-type: none">• WOMENS WEAR<ul style="list-style-type: none">1. SKIRTS2. SHORTS & CAPRIS3. TOP4. JEANS• MEN'S WEAR<ul style="list-style-type: none">1. SHIRT2. PANTS3. SHORTS
CONTACT US: 9865325622

Consider the following while writing the HTML code

1. Background colour of the page should be "Gray" a
2. Font face of text in the page should be "Arial"
3. Text colour of main heading should be "Maroon"
4. The text "FLIPKART" should be in "Red" colour ,size is 5 and in "Bold"
5. Bottom message should be of size 2.

HINDI

1. हिन्दी पत्रिका के लिए एक विज्ञापन तैयार करिए।
2. 'परोपकार' विषय पर स्वरचित कविता लिखिए।
3. मधुर वचन बोलने से संबंधित विभिन्न विचारकों अथवा दार्शनिकों की दस सूक्तियाँ लिख कर कोलॉज तैयार करो।
4. स्वतंत्रता संग्रामियों के चित्रों का कोलॉज तैयार कर उनके विषय में लिखना।
5. भारत के नक्शे पर चाय की पैदावार वाले स्थान को अंकित करना, इन स्थानों की भौगोलिक स्थिति और चायकी विशेषताओं के बारे में पता लगाकर लिखना।

