

RAHUL MODEL SENIOR SECONDARY PUBLIC SCHOOL
Recognised & Affiliated to CBSE
Railway Road, Sadh Nagar-II, Palam Colony, New Delhi

SUMMER HOLIDAY HOMEWORK

CLASS – X

ENGLISH

1. Write Formal letters on the following topics (three of each category) (Do this in English Project file)
(3x12=36 Marks)

- a. Complaint
- b. Editor
- c. Placing order
- d. Enquiry

2. Idioms Wall: Illustrate 1 idiom (e.g., "breaking the ice") and use them in sentences. (Do this in A3 size sheet) 5 Marks

3. Poster Making: Create a poster on Environmental Protection. (Do this in A3 size sheet) 5 Marks

4. Collage Making: - Topic: (Do this in A3 size sheet) 4 Marks

Freedom Fighters in Indian Literature OR My Favourite Author - Include images, short bios, Quote

5. Write 10 MCQ of each chapter and poem covered in the month of April and May. (Do this in your English notebook)

MATHEMATICS

Q1. Find the values of k for which the pair of linear equations $kx + y = k^2$ and $x + ky = 1$ have infinitely many solutions. (2)

Q2. Solve the following pair of linear equations: (2)

$$99x + 101y = 499$$

$$101x + 99y = 501$$

Q3. (a) On a morning walk three persons step off together and their steps measure 40 cm, 42 cm, 45 cm, what is the minimum distance each should walk so that each can cover the same distance in complete steps?

(b) There are 576 boys and 448 girls in a school that are to be divided into equal sections of either boys or girls alone. Find the total number of sections thus formed. (3)

Q4. If α and β are zeroes of the quadratic polynomial $4x^2 + 4x + 1$, then form a quadratic polynomial whose zeroes are 2α and 2β . (5)

Q5. If α, β are zeroes of polynomial $p(x) = 5x^2 + 5x + 1$ then find the value of (5)

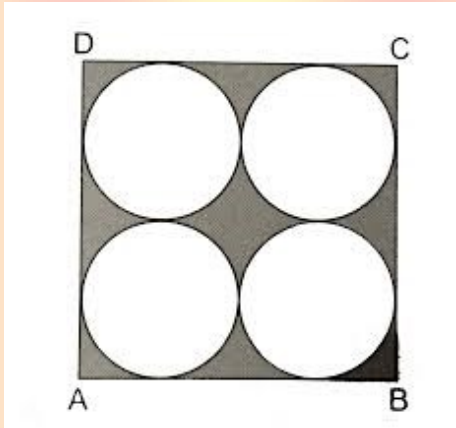
(i) $\alpha^2 + \beta^2$ (ii) $\alpha^{-1} + \beta^{-1}$ (iii) $\alpha^3 + \beta^3$

Q6. At a certain time in a deer park, the number of heads and the number of legs of deer and human visitors were counted and it was found that there were 39 heads and 132 legs. Find the number of deer and human visitors in the park. (2)

Q7. A chemist has one solution which is 50% acid and a second which is 25% acid. How much of each should be mixed to make 10 liters of 40% acid solution. (2)

Q8. The LCM of two numbers is M times their HCF. The sum of LCM and HCF is 750. If one number is 250, then find the other number. (2)

Q9. In a square ABCD of side 14cm, there are four circles of equal radii. Find the area of shaded region. (3)



Case study

Q10. The department of Computer Science and Technology is conducting an International Seminar. In the seminar, the number of participants in Mathematics, Science and Computer Science are 60, 84 and 108 respectively. The coordinator has made the arrangement such that in each room, the same number of participants are to be seated and all of them being in the same subject. Also, they allotted the separate room for all the official other than participants (4)

- Find the total number of participants.
- Find the L.CM of 60, 84 and 108 .
- Find the HCF of 60, 84 and 108 .
- Find the minimum number of rooms required, if in each room, the same number of participants are to be seated and all of them being in the same subject.
- Based on the above (iv) conditions, find the minimum number of rooms required for all the participants and officials.

- Activity on area related to circle (A-3 size sheet) (5)
- Make a chart on probability (A-3 size sheet) (10)
- Lab manual activity (5)

SOCIAL SCIENCE

1. Make a project file as a subject enrichment activity on any one topic- (10)
 - Sustainable Development
 - Consumer Awareness
 - Social Issue
2. Multiple Assessment Activity (Do any one) (5)
 - Make a chart on primary, secondary and tertiary sector activities and paste pictures also.
 - Make a chart showing crops on political map of India
 - Rice
 - Tea
 - Cotton
 - Sugarcane

Answer the following questions in 60-70 words (3 x 5 = 15)

(i) There is enough for everybody's need and not for anybody's greed. Justify this statement given by Mahatma Gandhi.

- (ii) What are the main causes of land degradation in states like Punjab, Haryana and Jharkhand? Suggest measures to control it.
- (iii) Explain the importance of traditional rainwater harvesting techniques.
- (iv) Money in the pocket can not buy everything explain.
- (v) Which sector organised and unorganised would you prefer in future and why?

Answer the following questions in 100-120 word-

(5 x 3 = 15)

(i) Our development is the earth's destruction. Do you agree with the given statement give reason to support your answer.

OR

Tertiary sector is not playing any significant role. Justify by giving reasons.

(ii) Write briefly about the type of farming practised in India.

- Primary subsistence farming
- Intensive farming

(iii) Agriculture sector and manufacturing sector move hand in hand? Justify the above statement with suitable examples.

Locate on the political map of India-

(5)

- | | | |
|--------------------|-------------------|---------------|
| (i) Alluvial soil | (ii) Tehri dam | (iii) Hirakud |
| (iv) Bharangal dam | (v) Rice crop | (vi) Wheat |
| (vii) Tea | (viii) Sugar cane | (ix) Cotton |
| (x) Black soil | | |

SCIENCE

1. Draw a well labelled diagram on A-3 size sheet (any one topic)

(10)

- (i) Longitudinal section of flower
- (ii) Germination of pollen on stigma
- (iii) Human male/female reproduction system
- (iv) Human Brain
- (v) Reflex arc
- (vi) Endocrine glands in human beings
- (vii) Types of Asexual Reproduction
- (viii) Microscope
- (ix) Human Eye
- (x) Food Chain
- (xi) Food Web

2. Draw a poster on any one topic assigned according to Roll No. -

(10)

Roll No.	Topic
1-5	Renewable Energy” Powering the future
6-10	Save Earth: Fight Climate Change
11-15	Micro plastics – From Environment to human body
16-20	Green chemistry for sustainable world
21-25	Biotechnology: Improving human life
26-30	Antimicrobial Resistance: The silent pandemic

3. Assignment (30 Marks)

Note: Assignment to be done on A4 rules sheet

ASSERTION AND REASON (8 Marks)

In the following Questions, the Assertion and Reason have been put forward. Read the statements carefully and choose the correct alternative from the following:

- (a) Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.
- (b) The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.
- (c) Assertion is true but the Reason is false.
- (d) The statement of the Assertion is false but the Reason is true.

1. Assertion: When air is blown through lime water, lime water turns milky.

Reason: Air contains 78% nitrogen and 21% oxygen.

2. Assertion: Veins have thin walls to collect blood from different organs.

Reason: Blood in veins are not under pressure.

3. Assertion: Human being has a complex respiratory system.

Reason: Human skin is impermeable to gases.

4. Assertion: All proteins in our food are digested in small intestine only.

Reason: The protein digesting enzymes are released into small intestine and stomach.

5. Assertion: Nitrogen is an essential element for plant growth and is taken up by plants in the form of inorganic nitrates or nitrites.

Reason: The soil is the nearest and richest source of raw materials like nitrogen, phosphorus and other minerals for the plants.

6. Assertion: Aerobic respiration release less energy as compared to anaerobic respiration.

Reason: Mitochondria is the power house of the cell.

7. Assertion: Energy is required to carry out different life processes.

Reason: Energy is obtained in the form of ATP in the mitochondria.

8. Assertion: Molecular movements help in repair and maintenance of cell organelles, cells and tissues.

Reason: Molecular movements are involved in removal of catabolic products like CO₂ and NH₃.

The following questions are case-based with 4 short sub-parts.

(4 x 2 = 8)

1. Three main regions of the small intestine are the duodenum, the jejunum, and the ileum. The small intestine is where digestion is completed and virtually all absorption occurs. These two activities are facilitated by structural adaptations that increase the mucosal surface area by 600-fold, including circular folds, villi, and microvilli. There are around 200 million microvilli per square millimeter of small intestine, which contain brush border enzymes that complete the digestion of carbohydrates and proteins. Combined with pancreatic juice, intestinal juice provides the liquid medium needed to further digest and absorb substances from chyme large intestine. The main regions of the large intestine are the cecum, the colon, and the rectum. The large intestine absorbs water and forms feces, and is responsible for defecation.

- (a) What is the function of large intestine?
- (b) What controls the exit of waste material from intestine?
- (c) How is the area of absorption increased in small intestine?
- (d) What are the enzymes secreted by pancreatic juice?

2. Respiratory disease causes an immense worldwide health burden. It is estimated that 235 million people suffer from asthma, more than 200 million people have chronic obstructive pulmonary disease (COPD), 65 million endure moderate-to-severe COPD, more than 100 million adult population experience sleep disordered breathing, 8.7 million people develop tuberculosis (TB) annually, millions live with pulmonary hypertension and more than 50 million people struggle with occupational lung diseases. At least 2 billion people are exposed to the toxic effects of biomass fuel consumption, 1 billion are exposed to outdoor air pollution and 1 billion are exposed to tobacco smoke. Each year, 4 million people die prematurely from chronic respiratory disease, Infants and young children are particularly susceptible. Nine million children under 5 years of age die annually and lung diseases are the most common causes of these deaths. Pneumonia is the world's leading killer of young children. Asthma is the most common chronic disease, affecting about 14% of children globally and is still rising. COPD is the fourth leading cause of death worldwide and the numbers are growing. The most common lethal cancer in the world is lung cancer, which kills more than 1.4 million people each year, and the numbers are growing. Respiratory tract infections caused by influenza kill 250 000-500 000 people and cost 71-167 billion US dollars annually. Respiratory infections are ranked as the greatest single contributor to the overall burden of disease in the world.

- Write one difference between respiration in plants and respiration in animals.
- Define cilia.
- How are lungs designed to maximize exchange of gases?
- 'While breathing cycle is rhythmic, exchange of gases is a continuous process.' Justify.

PRACTICE QUESTIONS (14 Marks)

1. Consider the situation where:

An object is 3 cm (height).

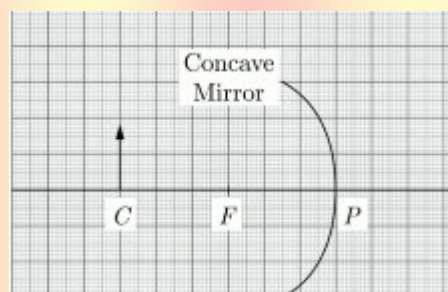
Mirror is concave with 6 cm focal length.

Object is placed at the centre of curvature.

Which of the following options are correct?

- The mirror will produce an image of magnification +1.5.
- The mirror will produce an image of magnification -1.
- The mirror will produce an image of magnification +1.
- The mirror will produce an image of magnification -1.5.

2. Examine the above figure and state which of the following option is correct? [One small box in the figure is equal to 1 cm]



- The mirror has a focal length of -6 cm and will produce an image of magnification +1.
- The mirror has a focal length of -3 cm and will produce an image of magnification -1.
- The mirror has a focal length of -3 cm and will produce an image of magnification +1.
- The mirror has a focal length of -6 cm and will produce an image of magnification -1.

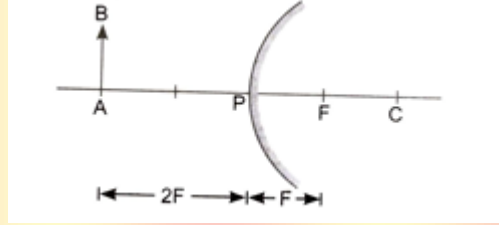
3. The linear magnification produced by a spherical mirror is $-1/5$. Analysing this value state the

- type of spherical mirror and

(ii) the position of the object with respect to the pole of the mirror. Draw ray diagram to justify your answer.

4. An object is kept in front of a concave mirror of focal length 20 cm. The image is three times the size of the object. Calculate two possible distances of the object from the mirror.

5. An object is kept in front of a convex mirror as shown in figure. What will be the value of magnification produced by it?



6. An object is kept at a certain distance in front of a concave mirror with a focal length of 12 cm. The real image is formed at a point that is 10 cm away from the object. Calculate the magnification of the image formed by mirror.

7. An object 2 cm in size is placed 30 cm in front of a concave mirror of focal length 15 cm. At what distance from the mirror should a screen be placed in order to obtain a sharp image? What will be the nature and the size of the image formed? Draw a ray diagram to show the formation of the image in this case.

8. A student has focussed the image of an object of height 3 cm on a white screen using a concave mirror of focal length 12 cm. If the distance of the object from the mirror is 18 cm, find the values of following:

(i) Distance of the image from the mirror

(ii) Height of the image

हिंदी

(1) उपमा, रूपक, उत्प्रेक्षा, अतिशयोक्ति व मानवीकरण अलंकार के तीन - तीन उदाहरण कॉपी में लिखें। (10)

(2) रचना के आधार पर वाक्य भेद व उपवाक्य - भेद को सचित्र (रचनात्मकता के साथ) A - 3 शीट पर दर्शाएं। (6)

(3) 'माता का अंचल' पाठ में भोलानाथ का अपने माता - पिता से बहुत लगाव है।

बचपन में हर में हर बच्चा एक पल के लिए भी माता-पिता का साथ नहीं छोड़ना चाहता, किन्तु माता-पिता के बूढ़े हो जाने पर इनमें से ही कुछ उन्हें साथ न रखकर वृद्धाश्रम में पहुँचा देते हैं। ऐसे लोगों को आप किन शब्दों से समझाएंगे। (4)

(4) वात्सल्य और ममता की आधार - भूमि एक रहने पर भी माता - पिता और बच्चों के संबंधों में तब से अब तक बहुत बदलाव हुए हैं, 'माता का अंचल' पाठ के आधार पर स्पष्ट करें। (4)

(5) अनुच्छेद लेखन - कृत्रिम बुद्धिमत्ता (आर्टिफिसियल इंटेलिजेंस) का दौर (6)

(6) छात्रावास में रहने वाले अपने छोटे भाई को लगभग 100 शब्दों में एक पत्र लिख कर प्रातः काल नियमित रूप से योग एवं प्राणायाम का अभ्यास करने ले लिए प्रेरित कीजिए। (5)

(7) विद्यालय में आप अंतर्राज्यीय योग दिवस' का आयोजन करना चाहते हैं। इस सम्बन्ध के लगभग 80 शब्दों में प्रधानाचार्या को ई-मेल लिखिए। (5)

(8) परियोजना कार्य- 'पर्यटन को बढ़ावा' देते हुए अपने पसंदीदा पर्यटन स्थल का सचित्र विवरण दीजिए। (10)

नोट:

प्रश्न 1, 3, 4, 5, 6 और 7 कॉपी में करें।

INFORMATION TECHNOLOGY

1. Make a practical file on the topic assigned according to Roll No. - - (10)

Roll No. -	Topic
1-10	Digital Documentation
11-20	Electronic Spreadsheet
21-30	Database Management Using

2. Draw on A-3 size sheet on the topic assigned according to Roll No. - (10)

Roll No. -	Topic
1-10	Signs used for visual communication
11-20	Types of Malware
21-30	Input/ Output Devices

3. Complete the following assignment in the notebook.

I. Answer the following questions-

(2 x 11 = 22)

- (i) What do you understand by the term ICT?
- (ii) How will you prevent others from using your computer?
- (iii) Write short note on-
 - (a) Desktop
 - (b) Icons
- (iv) Define-
 - (a) File
 - (b) Folder
- (v) Write steps to move a file.
- (vi) Why is it important to regularly back up your data?
- (vii) What is the purpose of using antivirus software on a computer?
- (viii) How can you increase the performance of a computer?
- (ix) What does cookies contain?
- (x) Write a short note on Encrypt Data.
- (xi) Write steps to remove files of a temporary folder.

II. Answer the following questions-

(4 x 2 = 8)

- (i) Explain any four functions of OS.
- (ii) Explain the Malware and its types in detail.