Einstein
PUBLIC SCHOOL
Nurturing a better tomorrow

SUMMER Holidays

HOMEWORK

CLASS X

Hindi

नोट

- सभी कार्य A4 शीट एवं प्रोजेक्ट फाइल में साफ़-सुथरे ढंग से करें तथा आवश्यक चित्र भी बनाएं।
- सुंदर एवं साफ-सुथरे लेख में कार्य पूर्ण कीजिए।

1. राम-लक्ष्मण-परशुराम संवाद का सचित्र नाट्य रूपांतरण कीजिए।
2. किसी विद्यालय में शिक्षक/शिक्षिका के पद हेतु अपना बायोडाटा (Bio-data) तैयार कीजिए, जिसमें नाम, पता, शैक्षिक योग्यता, अनुभव, रुचियाँ एवं संपर्क विवरण का उल्लेख हो।
3. निम्नलिखित विषयों में से किसी एक पर विज्ञापन तैयार कीजिए -
   (क) ग्रीष्मकालीन शिविर (Summer Camp) में प्रवेश हेतु विज्ञापन तैयार कीजिए।
   (ख) "पेड़ लगाओ-पर्यावरण बचाओ" अभियान के लिए जनजागरूकता विज्ञापन तैयार कीजिए।
4. अपना पोर्टफोलियो तैयार कीजिए, जिसमें अपना परिचय, शैक्षिक विवरण, रुचियाँ, उपलब्धियाँ तथा लक्ष्य का उल्लेख कीजिए।
5. अपने क्षेत्र में बढ़ती गंदगी की समस्या के समाधान हेतु नगर निगम अधिकारी को पत्र लिखिए।

   अथवा

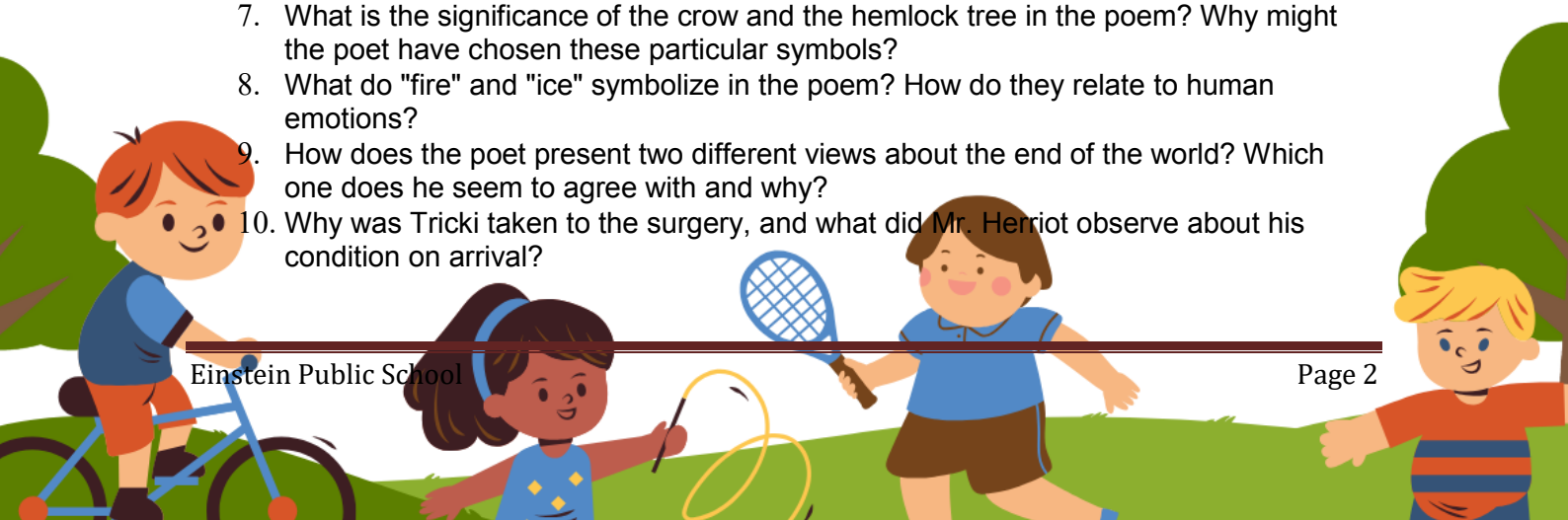
6. अपने मित्र को ग्रीष्मावकाश (Summer Vacation) कैसे बिताया, इसका वर्णन करते हुए पत्र लिखिए।

English

Complete the work in a separate notebook.

A. **Answer each question in 40–50 words.**

1. How did the hailstorm affect Lencho's crops, and why was this loss so important to him and his family?
2. Why did Lencho decide to write a letter to God? What does this reveal about his character and faith?
3. How did the postmaster react to Lencho's letter, and what steps did he take to help him?
4. Why did Lencho call the post office employees "a bunch of crooks"? What does this show about his understanding and belief?
5. How does the poet describe the impact of the dust of snow on his
6. mood? What change does it bring in his day?
7. What is the significance of the crow and the hemlock tree in the poem? Why might the poet have chosen these particular symbols?
8. What do "fire" and "ice" symbolize in the poem? How do they relate to human emotions?
9. How does the poet present two different views about the end of the world? Which one does he seem to agree with and why?
10. Why was Tricki taken to the surgery, and what did Mr. Herriot observe about his condition on arrival?



11. How did Mr. Herriot treat Tricki without using medicines? What changes did he make in his routine?
12. How did Tricki's behaviour and health improve during his stay at the surgery?
13. How did Mrs. Pumphrey react to Tricki's recovery, and why did she call it ‘a triumph of surgery’?
14. What were the key ideas expressed by Nelson Mandela in his inaugural speech about freedom and equality?
15. How does Mandela describe the system of apartheid and its impact on the people of South Africa?
16. What does Mandela mean when he says that both the oppressor and the oppressed are robbed of their humanity?
17. How did Mandela’s understanding of freedom change from his childhood to his adulthood?

B. **Prepare a Tense Table including:**
   All 12 tenses
   Helping verbs
   Verb forms (V1, V2, V3, V-ing)
   Make it clear, neat, and well-organized.

C. **Read at least 5 short English stories.**
   While reading, note down:
   New words
   Idioms/phrases
   Be ready to share your learning in class.

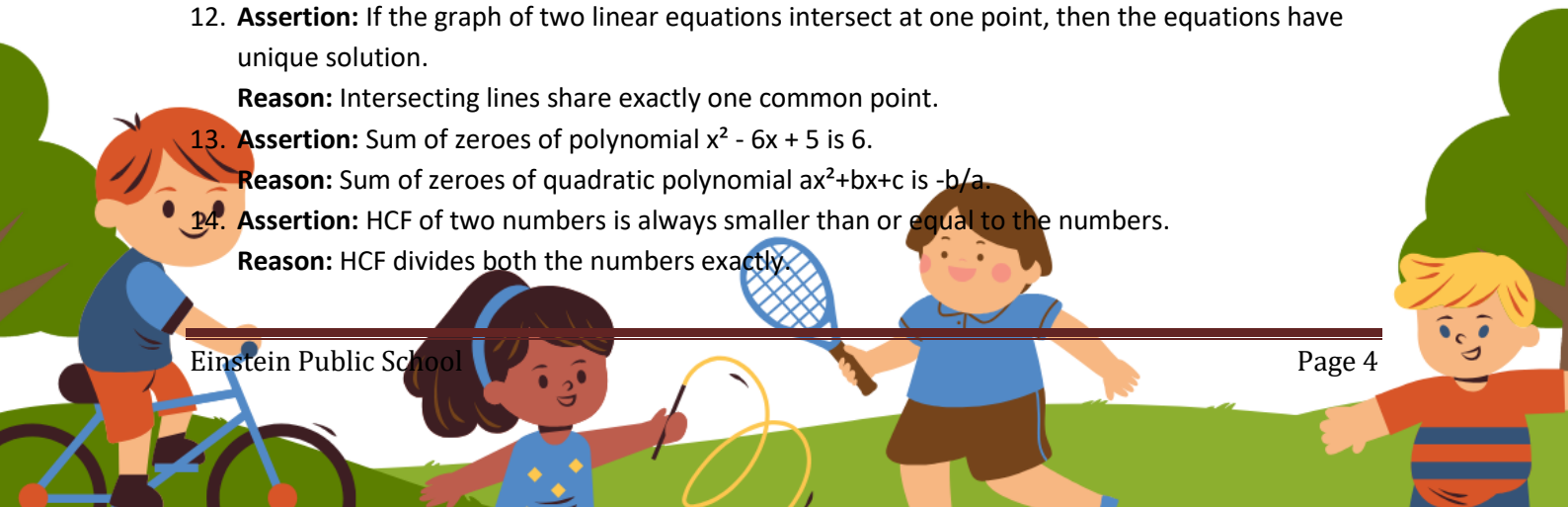
Maths

Section A

1. The HCF of 96 and 404 can be written in the form:
   a) $96 \times 4 + 20$ b) $404 \times 4 + 96$
   c) $404 = 96 \times 4 + 20$ d) $96 = 404 \times 4 + 20$
2. The pair of equations $3x - 5y = 7$ and $-6x + 10y = 7$ have
   a) A unique solution b) Infinitely many solutions
   c) No solution d) Two solutions
3. The zeroes of polynomial $x^2 - 9$ are:
   a) 3, –3 b) 9, –9 c) 0, 9 d) 1, –1
4. Degree of polynomial $5x^4 - 3x^2 + 7$ is:
   a) 2 b) 3 c) 4 d) 5
5. If one zero of polynomial $x^2 - 5x + 6$ is 2, the other zero is:
   a) 1 b) 2 c) 3 d) 6
6. The graphical representation of a pair of linear equations having one solution is:
   a) Parallel lines b) Intersecting lines c) Coincident lines d) Curved lines
7. The pair $2x + 3y = 5$ and $4x + 6y = 10$ has:
   a) Unique solution b) No solution c) Infinitely many solutions d) Two solutions
8. The product of zeroes of $x^2 - 7x + 12$ is:
   a) –12 b) 12 c) 7 d) –7
9. If 3 is the least prime factor of number a and 7 is the least prime factor of number b, then the least prime factor of a+b, is
   a) 2 b) 3 c) 5 d) 10
10. If the lines represented by two equations are parallel, then:
    a) They intersect at one point b) They never meet
    c) They coincide d) They form a circle

Section B

11. **Assertion:** Every rational number has either terminating or non-terminating recurring decimal expansion.
    Reason: Rational numbers can be expressed in p/q form.
12. **Assertion:** If the graph of two linear equations intersect at one point, then the equations have unique solution.
    Reason: Intersecting lines share exactly one common point.
13. **Assertion:** Sum of zeroes of polynomial $x^2 - 6x + 5$ is 6.
    Reason: Sum of zeroes of quadratic polynomial ax^2+bx+c is $-b/a$.
14. **Assertion:** HCF of two numbers is always smaller than or equal to the numbers.
    Reason: HCF divides both the numbers exactly.



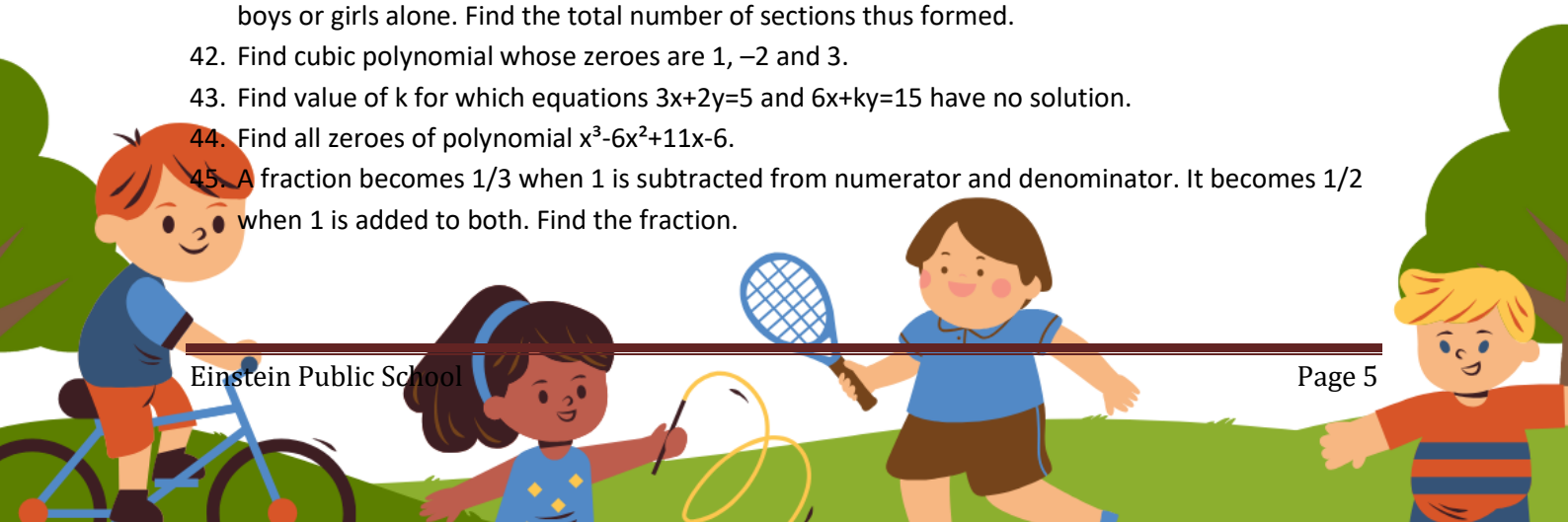
15. **Assertion:** Pair of equations 3x+2y=5 and 6x+4y=15 has no solution.
    Reason: The lines represented are parallel.

Section C

16. Find the HCF of 52 and 117 and express it in form 52x + 117y.
17. Floor of a room is to be fitted with square marble tiles of the largest possible size. The size of the room is 10 m × 7 m. What should be the size of tiles required that has to be cut and how many such tiles are required?
18. Find the smallest number which leaves remainder 8 and 12 when divided by 28 and 32 respectively.
19. Find the zeroes of polynomial x^2 - 16.
20. Find value of k if one zero of x^2 + kx +16 is 4.
21. Write degree and leading coefficient of $7x^3$ - 4x +1.
22. Verify relationship between zeroes and coefficients of x^2 - 9x +14.
23. Solve: x+y=5, x-y=1.
24. Find solution of 2x+3y=13, x+y=5.
25. Determine whether equations x+y=2 and 2x+2y=4 are consistent.
26. Find polynomial whose zeroes are 2 and –5.
27. α, β, γ are zeroes of cubic polynomial x3 – 12x2 + 44x + c. If α, β, γ are in AP, find the value of c.
28. Find remainder when $2x^3+3x^2-5$ is divided by (x-1).
29. Find value of m if pair mx+y=4 and 2x+2y=8 has unique solution.
30. Find product of zeroes of polynomial $3x^2-5x-2$.

Section D

31. Prove that √5 is irrational.
32. The HCF of 2472, 1284 and a third number N is 12. If their LCM is 23 × 32 × 5 × 103 × 107, then the number N is?
33. Two numbers are in the ratio 21 : 17. If their HCF is 5, find the numbers.
34. Find quadratic polynomial whose zeroes are 3 and 7.
35. Verify relationship between zeroes and coefficients of $2x^2-7x+3$.
36. Solve graphically: x+y=4 and x-y=0.
37. Solve by substitution method: 3x+2y=11, x-y=1.
38. Solve by elimination method: 5x+3y=19, 2x-y=4.
39. Determine nature of solutions of: 2x+4y=8 and 4x+8y=16.
40. If one zero of polynomial $2x^2-5x+k$ is 2, find k.
41. 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.
42. Find cubic polynomial whose zeroes are 1, –2 and 3.
43. Find value of k for which equations 3x+2y=5 and 6x+ky=15 have no solution.
44. Find all zeroes of polynomial $x^3-6x^2+11x-6$.
45. A fraction becomes 1/3 when 1 is subtracted from numerator and denominator. It becomes 1/2 when 1 is added to both. Find the fraction.



Section E

46. Find the values of k for which the pair of linear equations $kx + y = k^2$ and $x + ky = 1$ have infinitely many solutions.
47. Solve graphically: 2x+y=5 and x-y=1.
48. If x + a is a factor of the polynomial $x^2 + px + q$ and $x^2 + mx + n$ prove that a = n-q/m-p
49. Solve the following pair of linear equations graphically $x + 3y = 6$, $2x-3y = 12$
50. A train covers 360 km partly at 60 km/h and remaining at 90 km/h. Total time taken is 5 hours. Find distance covered at each speed.
51. Find quadratic polynomial whose sum and product of zeroes are –5 and 6 respectively.

Section F

52. Draw graph of the function $f(x) = -2x^2 + 4x$.
53. Find all zeroes of polynomial $x^3 - 9x^2 + 26x - 24$.
54. A boat covers 14 kms in upstream and 20 kms downstream in 7 hours. Also it covers 22 kms upstream and 34 kms downstream in 10 hours. Find the speed of the boat in still water and of that the stream.
55. A father is 26 years older than his son. After 6 years, father's age will be three times the son's age. Find their present ages.
56. Find value of k for which pair of equations kx+3y=k-3 and 12x+ky=k has infinitely many solutions.
57. A shopkeeper sold two tables and three chairs for ₹5400 and three tables and two chairs for ₹5600. Find cost of one table and one chair.

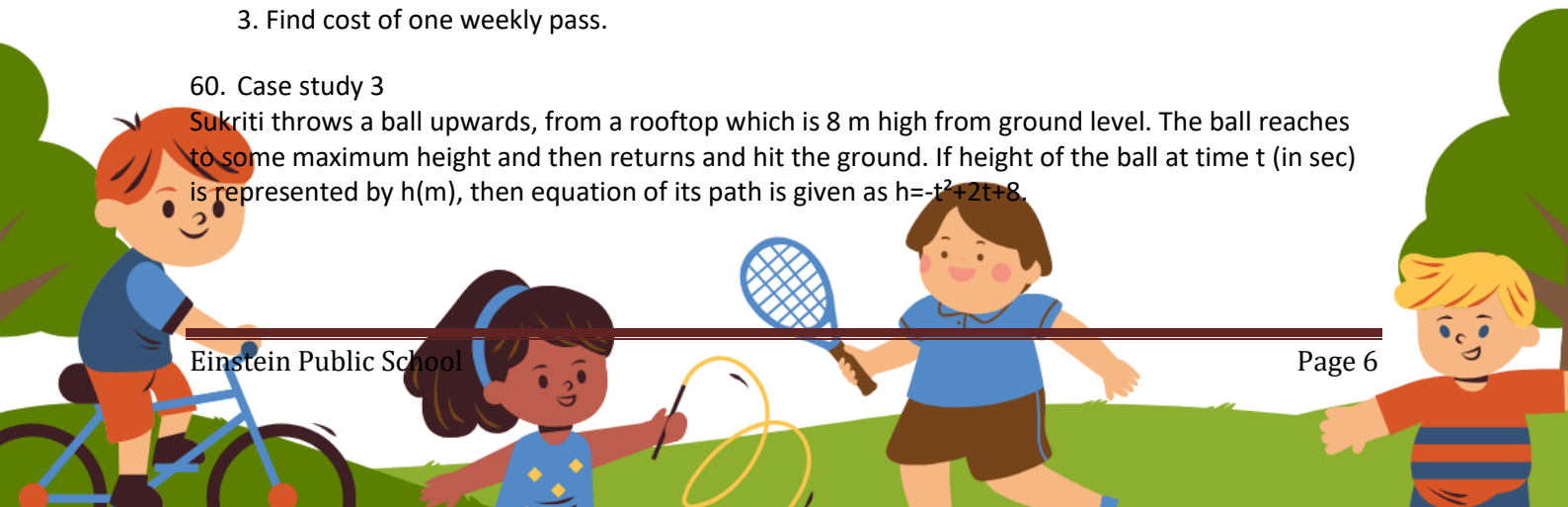
Section G

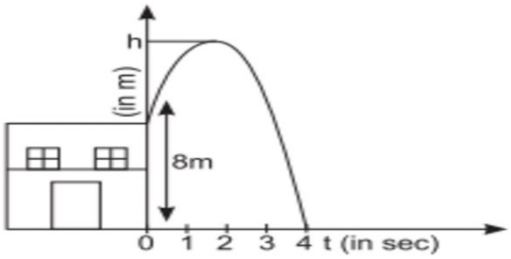
58. Case Study 1
    The height of a ball thrown upward is given by: $h(x)= -x^2 + 6x + 7$
    1. Find the zeroes of the polynomial.
    2. What is the maximum height of the ball?
    3. After how much time does the ball hit the ground?
59. Case Study 2
    A coaching institute sold student passes. 2 monthly passes and 3 weekly passes cost ₹2100. 3 monthly passes and 2 weekly passes cost ₹2400.
    1. Form the pair of linear equations.

    2. Find cost of one monthly pass.

    3. Find cost of one weekly pass.

60. Case study 3
    Sukriti throws a ball upwards, from a rooftop which is 8 m high from ground level. The ball reaches to some maximum height and then returns and hit the ground. If height of the ball at time t (in sec) is represented by h(m), then equation of its path is given as $h=-t^2+2t+8$.





Based on the given information, solve the following questions:

Q1. The maximum height achieved by ball is:

a. 7 m b. 8 m c. 9 m d. 10 m

Q2. The polynomial represented by above graph is:

a. linear polynomial b. quadratic polynomial c. constant polynomial d. cubic polynomial.

Q3. Time taken by ball to reach maximum height is: is given, is:

a. 2 sec b. 4 sec c. 1 sec d. 2 min

S.St

Section A – MCQs (10 Questions)

1.Which type of resource can be renewed naturally?

a) Coal b) Petroleum c) Solar energy d) Natural gas

2. Which indicator is commonly used to compare development among countries?

a) Climate b) Per capita income

c) Population density d) Forest area

3. Who painted the famous artwork ‘The Dream of Worldwide Democratic and Social Republics’?

a) Frederic Sorrieu b) Napoleon c) Metternich d) Bismarck

4. Belgium is an example of:

a) Dictatorship b) Federalism

c) Monarchy without constitution d) Military rule

5. Which soil type is ideal for cotton cultivation?

a) Laterite soil b) Black soil c) Desert soil d) Mountain soil

6. Sustainable development means:

a) Using all resources quickly

b) Conserving resources for future generations

c) Increasing pollution

d) Depending only on imports

7. Which country emerged as a unified nation in 1871?

a) Italy b) Germany c) France d) Greece

8. Power sharing is desirable because it:

a) Increases conflict b) Reduces stability

c) Helps reduce social conflict d) Gives power to one group only

9. Terrace cultivation is mainly practiced to:

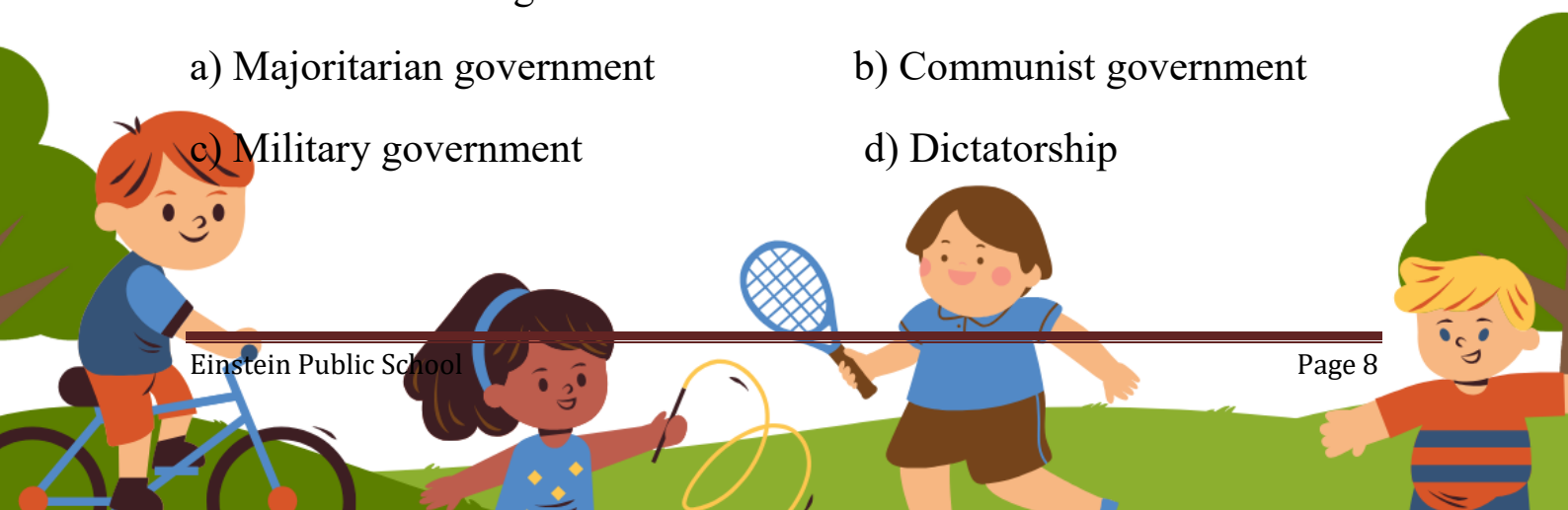
a) Increase industries b) Reduce soil erosion

c) Promote mining d) Increase urbanisation

10. Which form of government exists in Sri Lanka?

a) Majoritarian government b) Communist government

c) Military government d) Dictatorship



Section B – Assertion and Reason (5 Questions)

For each question, choose the correct option:

(a) Both A and R are true and R is the correct explanation of A.

(b) Both A and R are true but R is not the correct explanation of A.

(c) A is true but R is false.

(d) A is false but R is true.

11. **Assertion:** Resource planning is important in India.

Reason: India has enormous diversity in the availability of resources.

12.**Assertion:** Different persons can have different developmental goals.

Reason: Development goals are influenced by people's aspirations and needs.

13**. Assertion**: Nationalism emerged as a strong force in Europe in the 19th century.

Reason: The French Revolution promoted ideas of liberty and equality.

14. **Assertion**: Power sharing is the spirit of democracy.

Reason: People have the right to be consulted on how they are governed.

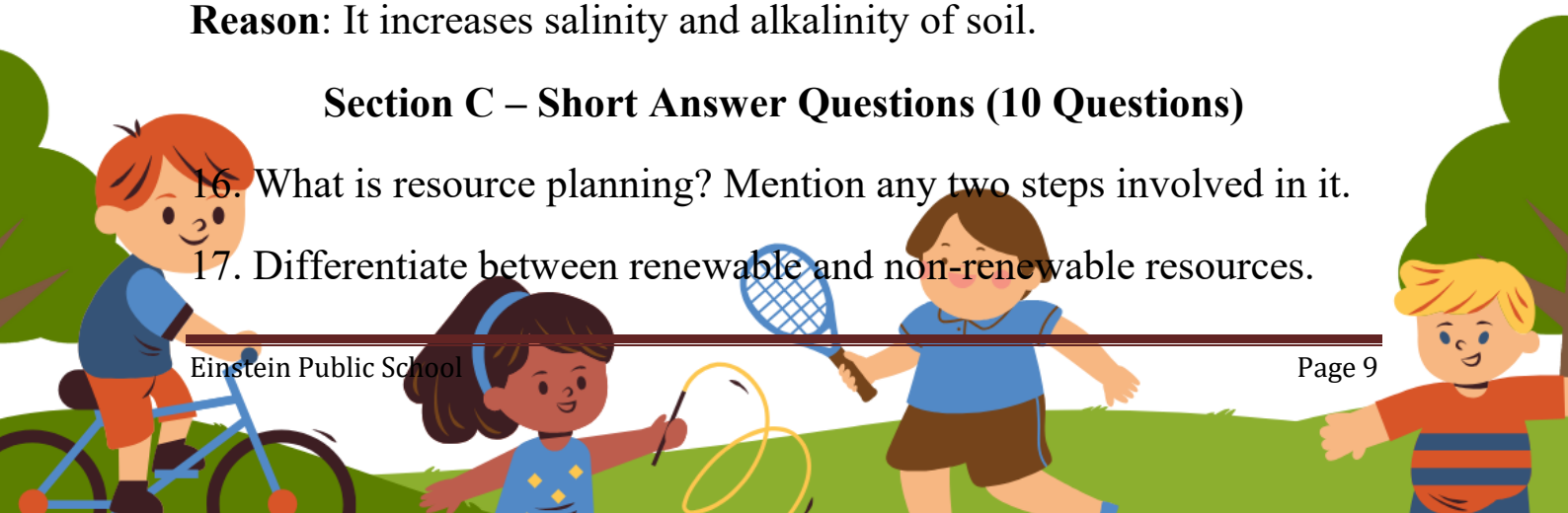
15.**Assertion**: Over-irrigation may lead to land degradation.

Reason: It increases salinity and alkalinity of soil.

Section C – Short Answer Questions (10 Questions)

16. What is resource planning? Mention any two steps involved in it.

17. Differentiate between renewable and non-renewable resources.



18. Why is sustainable development important?

19. What is the Human Development Index (HDI)?

20. Mention any two examples of public facilities.

21. Explain the role of Giuseppe Mazzini in the unification of Italy.

22. What was the significance of the Frankfurt Parliament?

23. Define power sharing.

24. Mention any two forms of power sharing.

25. Why did the Belgian model of accommodation become successful?

Section D – Long Answer Questions (10 Questions)

26. Explain the classification of resources on the basis of ownership and exhaustibility.

27. Describe the problems caused due to land degradation and suggest measures to control it.

28. Explain the concept of sustainable development with suitable examples.

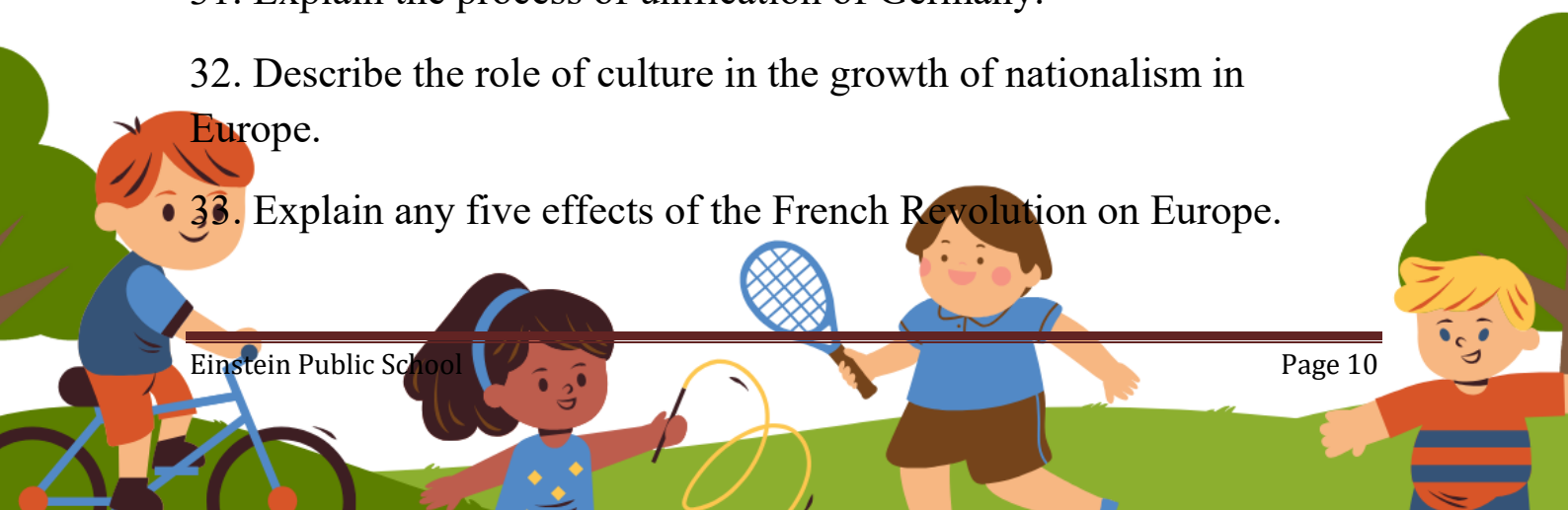
29. Describe the three major indicators of development used by the World Bank.

30. 'Income alone is not a completely adequate indicator of development.' Explain.

31. Explain the process of unification of Germany.

32. Describe the role of culture in the growth of nationalism in Europe.

33. Explain any five effects of the French Revolution on Europe.



34. Compare the majoritarianism in Sri Lanka with the accommodation model in Belgium.

35. Explain the different forms of power sharing with examples.

Section E – Map Based Questions (5 Questions)

36. On the political map of Europe, locate and label the following:(a) France(b) Germany

37. On the political map of Europe, identify the region associated with Giuseppe Garibaldi.

38. On the map of India, locate the states where black soil is mainly found.

39. On the map of India, mark any two areas affected by land degradation.

40. On the political map of Europe, locate Belgium and its capital Brussels.

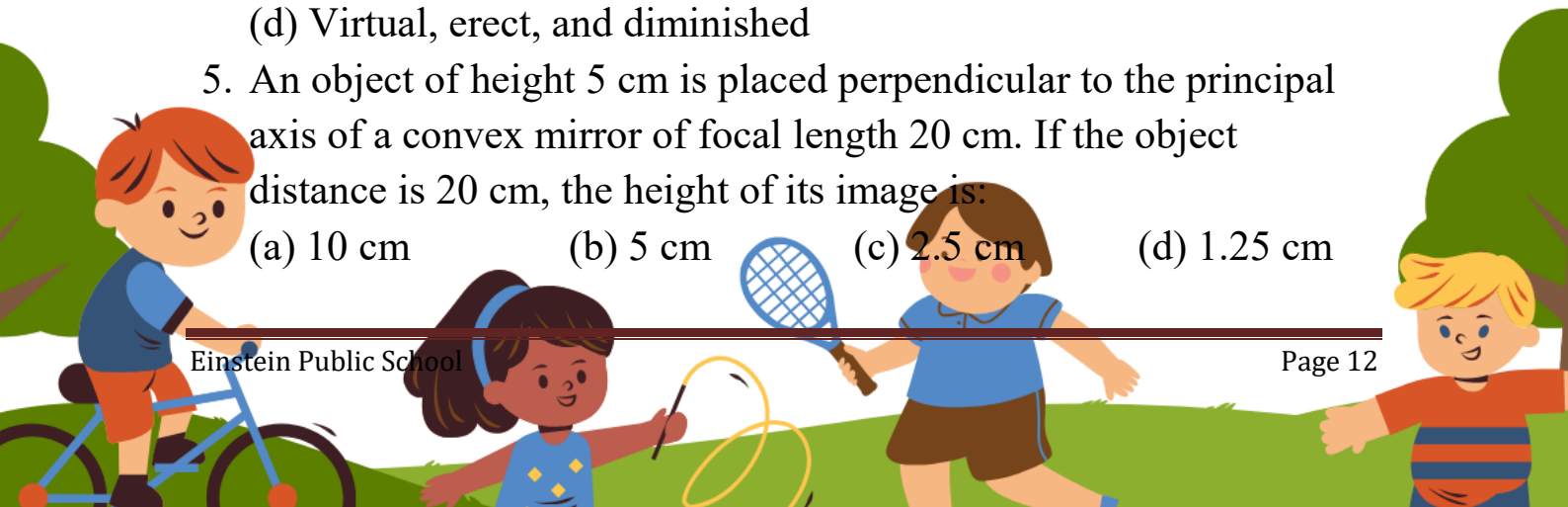
Science

Physics

SECTION A: MULTIPLE CHOICE QUESTIONS (MCQS)

Select the most appropriate option for each of the following questions.

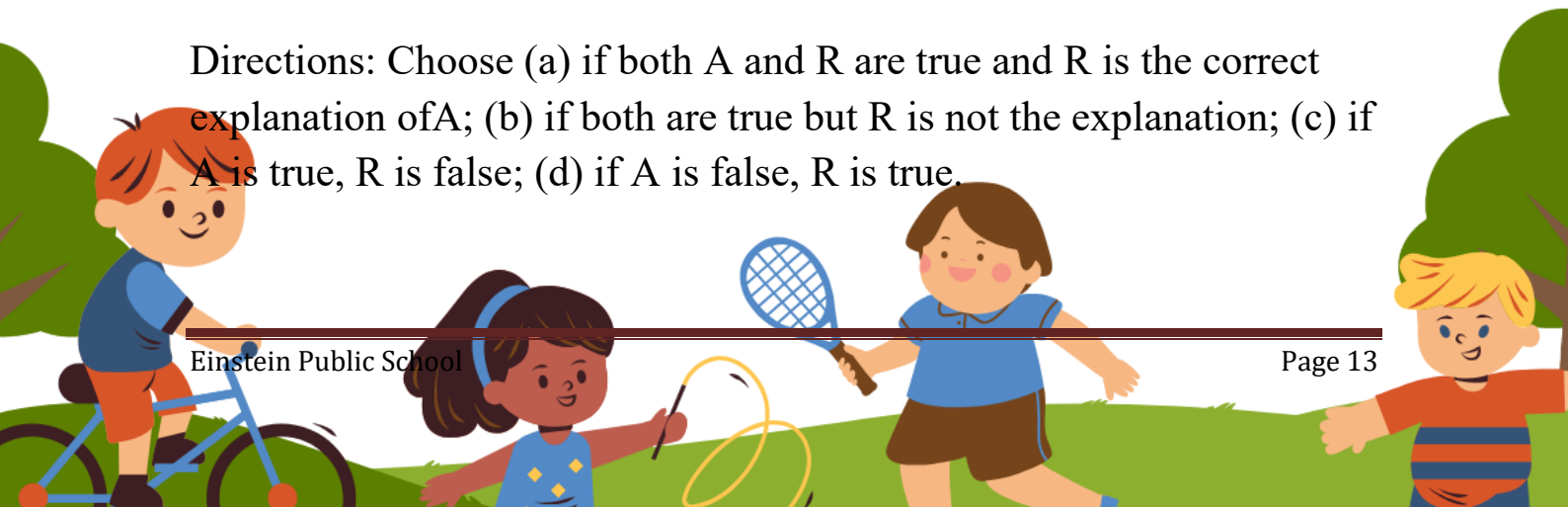
1. An object is placed at a distance of 15 cm in front of a plane mirror. The distance between the object and its image formed by the mirror is:
   (a) 15 cm (b) 30 cm (c) 7.5 cm (d) 60 cm
2. An object is placed at a distance of 12 cm in front of a concave mirror of focal length 18 cm. The position and nature of the image formed are:
   (a) 36 cm behind the mirror, virtual and erect.
   (b) 36 cm in front of the mirror, real and inverted.
   (c) 7.2 cm behind the mirror, virtual and erect.
   (d) 7.2 cm in front of the mirror, real and inverted.
3. Which of the following mirrors is commonly used by dentists to see an enlarged image of teeth?
   (a) Convex mirror (b) Concave mirror
   (c) Plane mirror (d) Plano-convex mirror
4. A concave mirror produces a magnification of +2. This means the image formed is:
   (a) Real, inverted, and magnified
   (b) Virtual, erect, and magnified
   (c) Real, inverted, and diminished
   (d) Virtual, erect, and diminished
5. An object of height 5 cm is placed perpendicular to the principal axis of a convex mirror of focal length 20 cm. If the object distance is 20 cm, the height of its image is:
   (a) 10 cm (b) 5 cm (c) 2.5 cm (d) 1.25 cm



6. At what distance from a concave mirror of focal length 10 cm should an object be placed so that a real image of exactly the same size as the object is formed?
   (a) 10 cm (b) 20 cm (c) 5 cm (d) 30 cm
7. A rear-view convex mirror fitted on a vehicle has a radius of curvature of 3.0 m. If a moving bus is located at a distance of 5.0 m from this mirror, the position of the image from the pole is:
   (a) 1.15 m behind the mirror
   (b) 1.15 m in front of the mirror
   (c) 0.86 m behind the mirror
   (d) 0.86 m in front of the mirror
8. A student shines a thin beam of light parallel to the principal axis of a diverging mirror. After reflection, the beam appears to diverge from a point 15 cm behind the mirror. If an object is placed 30 cm in front of this mirror, its magnification will be:
   (a) +0.5 (b)-0.5 (c) +0.33 (d) -0.33
9. A full-length image of a distant tall building can definitely be seen by using:
   (a) A concave mirror only
   (b) A convex mirror only
   (c) A plane mirror only
   (d) Both concave as well as plane mirror
10. A convex mirror of focal length f forms an image which is 1/n times the size of the real object. The distance of the object from the mirror is:
    (a) (n-1)f (b) (n-1)f/n (c) (n+1)f (d) (n+1)f/n

SECTION B: ASSERTION & REASONING QUESTIONS

Directions: Choose (a) if both A and R are true and R is the correct explanation ofA; (b) if both are true but R is not the explanation; (c) if A is true, R is false; (d) if A is false, R is true.



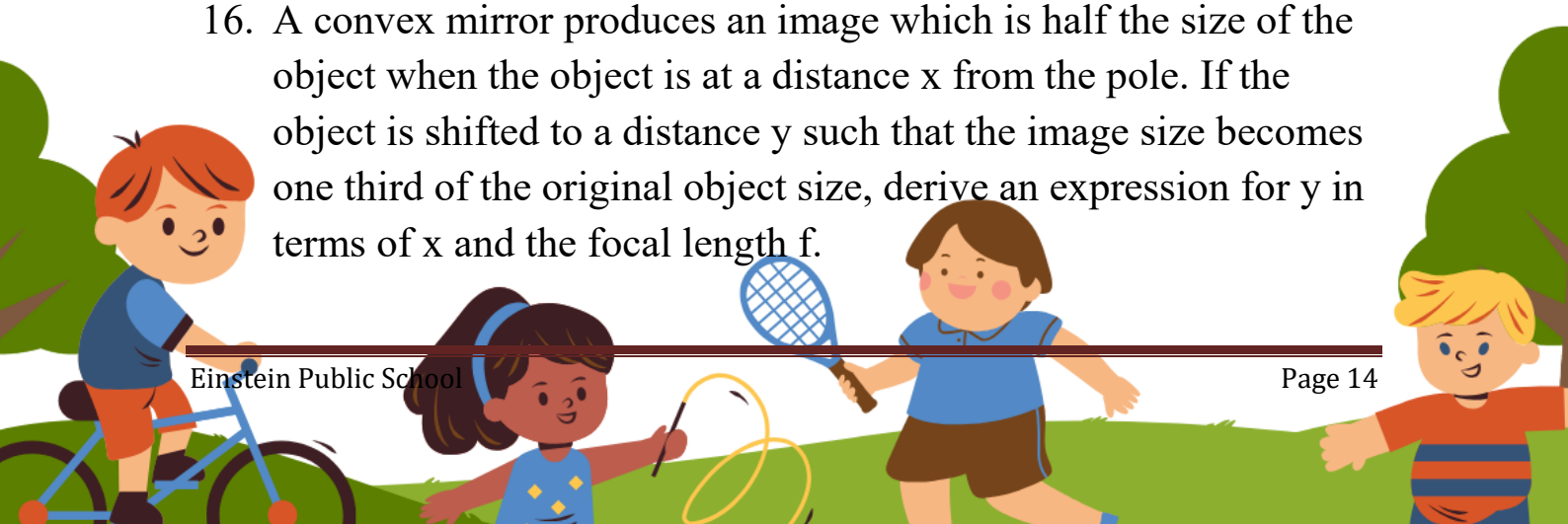
11. Assertion (A): Convex mirrors are commonly preferred as rear-view (wing) mirrors in vehicles. Reason (R): Convex mirrors always produce an erect, virtually diminished image, thereby offering a much wider field of view.
12. Assertion (A): When an object is shifted closer to the pole of a concave mirror from a starting position of u = -30 cm to u = -10 cm where the focal length is f = -15 cm, the numerical value of magnification shifts signs from negative to positive. Reason (R): A concave mirror can form both real and virtual images depending on whether the object distance is greater or smaller than its focal length magnitude.

SECTION C: VERY SHORT ANSWER TYPE QUESTIONS (VSATQ)

13. Calculate the radius of curvature of a convex mirror whose focal length is measured precisely to be +22.5 cm. State the sign convention rule applied.
14. Find the nature, focal length, and radius of curvature of a spherical mirror that forms an erect image three times the size of an object placed at a distance of 10 cm from its pole.

SECTION D: SHORT ANSWER TYPE QUESTIONS (SATQ)

15. An object 4 cm in height is placed at a distance of 25 cm in front of a concave mirror of focal length 15 cm.
    a. At what distance from the mirror should a screen be placed to obtain a sharp, focused image?
    b. Find the size and nature of the image formed.
16. A convex mirror produces an image which is half the size of the object when the object is at a distance x from the pole. If the object is shifted to a distance y such that the image size becomes one third of the original object size, derive an expression for y in terms of x and the focal length f.



SECTION E: LONG ANSWER TYPE QUESTION (LATQ)

17. Comprehensive Reflection Analysis.

I. Draw neat and labeled ray diagrams to show the formation of an image by a concave mirror when an object is placed:
   a. Between its focus (F) and pole (P).
   b. Between its center of curvature (C) and focus (F).

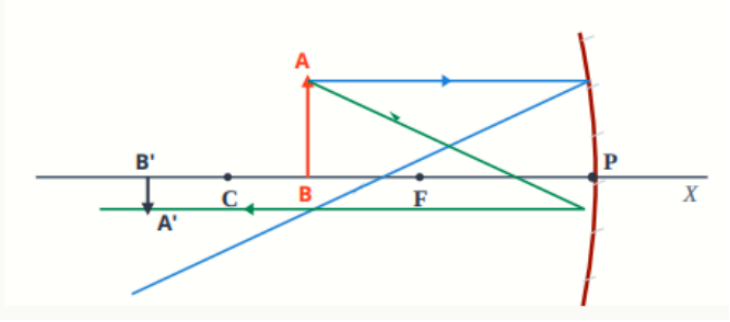
II. An object is placed at a distance of 30 cm from a convex mirror. If its image size is exactly 1/3 of the object size, compute the exact numeric value of the mirror's focal length and radius of curvature.

III. A linear object is placed along the principal axis of a concave mirror. Will the shape of the image be exactly identical to the object? Briefly justify your answer.

SECTION F: CASE-BASED QUESTION (CBQ)

18. Analysis of Reflection Pathways

A student conducts an optics experiment in the physics laboratory to analyze ray behaviors using a specific spherical mirror setup. An object AB is placed at a defined distance along the principal axis. The ray pathways are carefully marked out on a tracking grid as illustrated below:



a. Based directly on the ray diagram, identify the optical point marked C and state what happens to any separate light ray that passes explicitly through this point before striking the mirror surface.

b. If the object height AB = 3.0 cm, the object distance from the pole is 24 cm, and the focal length of this configuration is 16 cm, calculate the exact physical distance of the image point B' from the pole.
c. Using the dimensions provided in part (b), calculate the exact height of the inverted image A'B'. Show your complete formula steps clearly.

SECTION G: PRACTICAL & LAB MANUAL RECORD WORK

19. Experiment 1: Finding Focal Length Dynamically

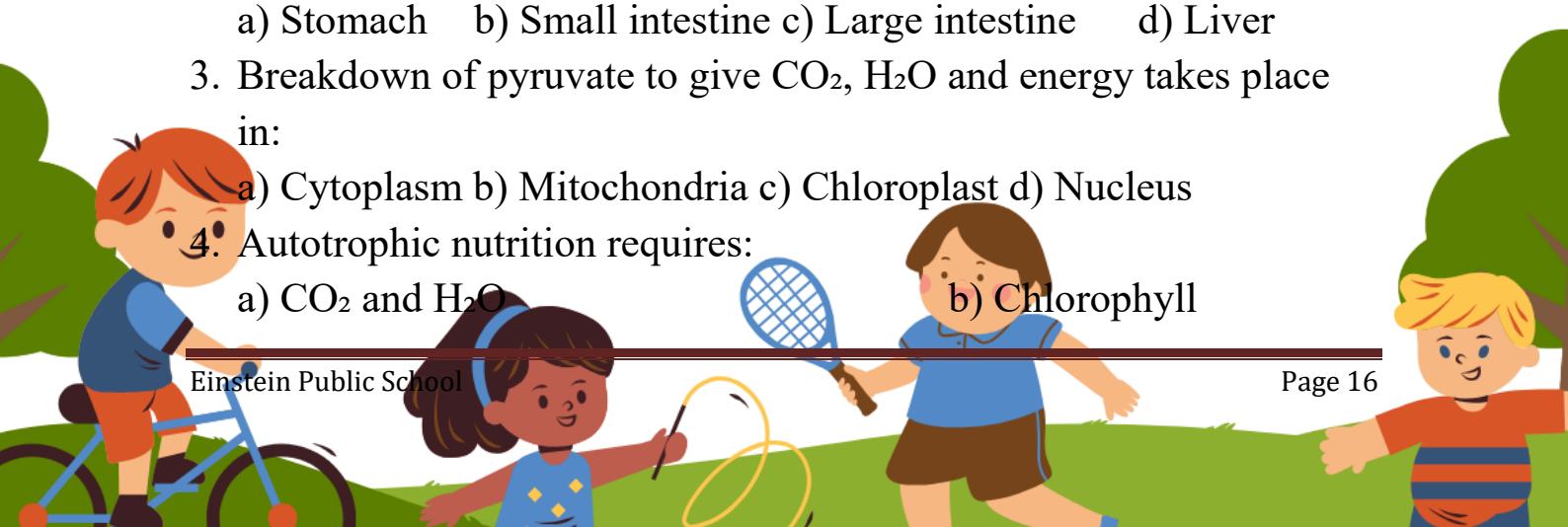
Aim: To find the value of focal length (f) of a given concave mirror by obtaining a sharp image of a distant object (e.g., a distant window pane or tree).

Numerical Analysis Task: In your mock table, if the measured distance between the mirror surface and the screen for three trials results in 14.8 cm, 15.2 cm, and 15.0 cm respectively, calculate the mean focal length and the absolute radius of curvature values to write into your report conclusion.

Biology

Multiple choice questions

1. Which enzyme is present in saliva?
   a) Pepsin b) Trypsin c) Amylase d) Lipase
2. Site of complete digestion in humans is:
   a) Stomach b) Small intestine c) Large intestine d) Liver
3. Breakdown of pyruvate to give CO_2, H_2O and energy takes place in:
   a) Cytoplasm b) Mitochondria c) Chloroplast d) Nucleus
4. Autotrophic nutrition requires:
   a) CO_2 and H_2O b) Chlorophyll



c) Sunlight d) All of these

5. During respiration, exchange of gases takes place in:
   a) Trachea b) Bronchi c) Alveoli d) Nose
6. The opening and closing of stomatal pore depends upon:
   a) Oxygen b) Guard cells c) CO_2 d) Temperature
7. Which of these is not a part of the human alimentary canal?
   a) Liver b) Oesophagus c) Stomach d) Duodenum
8. In anaerobic respiration in yeast, glucose is converted to:
   a) Lactic acid b) CO_2 + Ethanol c) Pyruvate d) O_2
9. 9. Energy currency of the cell is:
   a) ADP b) ATP c) AMP d) NADP
10. Villi are present in:
    a) Stomach b) Small intestine c) Large intestine d) Oesophagus

Assertion reason

a. Both A & R true, R explains A
b. Both true, R not correct explanation
c. A true, R false
d. A false, R true

11. **Assertion:** Raw materials needed for photosynthesis are CO_2 and H_2O.
    Reason: Chlorophyll traps solar energy to convert these into glucose.
12. **Assertion:** Aerobic respiration releases more energy than anaerobic.
    Reason: Complete breakdown of glucose occurs in presence of O_2.

Very short answer type questions

13. Name the acid present in gastric juice. What is its function?
14. Why do aquatic animals breathe faster than terrestrial animals?

Short answer type questions

15. Differentiate between autotrophic and heterotrophic nutrition. Give one example of each.
16. Draw a flow chart showing the breakdown of glucose by various pathways during respiration.

Long answer type questions

17. Describe the process of digestion in the human small intestine. Name the enzymes and their functions.

OR

18. Explain the mechanism of breathing in humans with a neat labelled diagram of the human respiratory system.

CBQ: 1 Question | Case Based

19. Rohan observed that his potted plant kept in a dark room for 3 days had yellow leaves.
    a. Why did the leaves turn yellow?
    b. What process was missing in the dark?
    c. Write the balanced equation for that process.
    d. Name the pigment responsible for the green color.

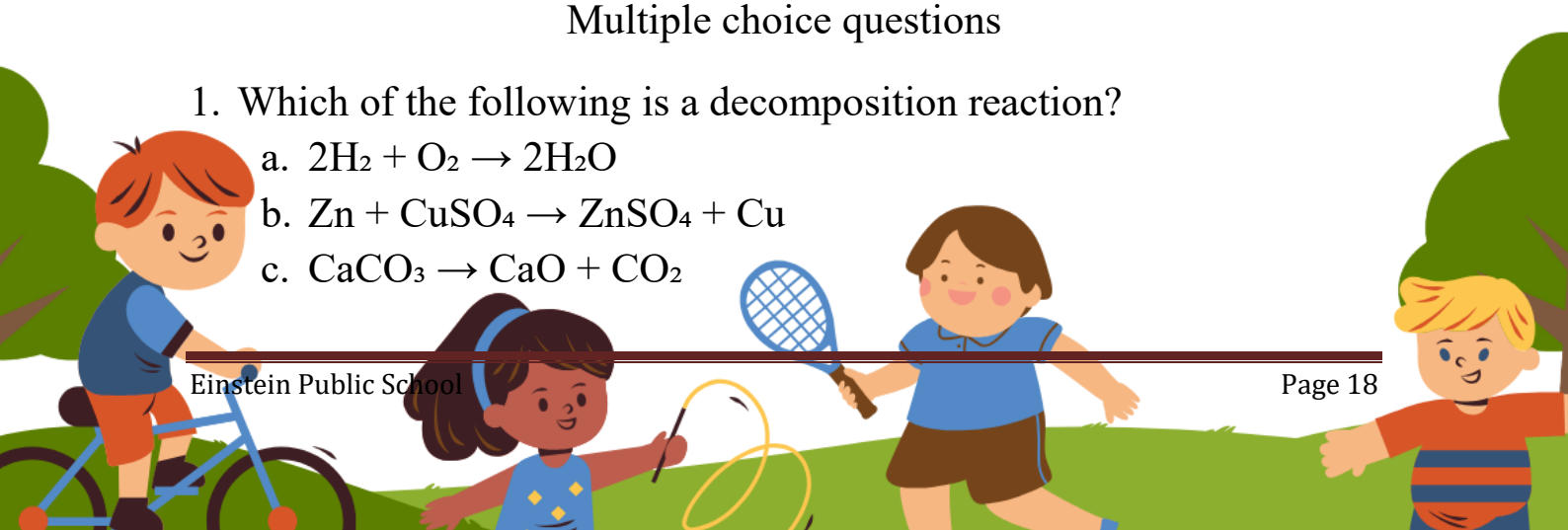
Practical: 2 Experiments from Lab Manual

20. Experiment 1: To prepare a temporary mount of a leaf peel to show stomata.
21. Experiment 2: To show experimentally that CO_2 is given out during respiration.

Chemistry

Multiple choice questions

1. Which of the following is a decomposition reaction?
    a. $2H_2 + O_2 \rightarrow 2H_2O$
    b. $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$
    c. $CaCO_3 \rightarrow CaO + CO_2$



d. $NaOH + HCl \rightarrow NaCl + H_2O$

2. The reaction $Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe$ is an example of:
   a) Combination reaction b) Double displacement
   c) Decomposition d) Displacement reaction
3. When magnesium ribbon burns in air, the ash formed is:
   a) Black b) White c) Yellow d) Red
4. Which of the following gases is used in storage of fat and oil containing foods for a long time?
   a) CO_2 b) O_2 c) N_2 d) Ne
5. A reddish-brown colored metal used in electrical wires, when heated in air, forms black coating. The black substance is:
   a) CuO b) Cu_2O c) $CuSO_4$ d) $CuCO_3$
6. $Pb + CuCl_2 \rightarrow PbCl_2 + Cu$. This reaction is an example of:
   a) Combination b) Decomposition
   c) Displacement d) Double displacement
7. To balance the equation: $BaCl_2 + Al_2(SO_4)_3 \rightarrow BaSO_4 + AlCl_3$, coefficient of $BaSO_4$ should be:
   a) 1 b) 2 c) 3 d) 4
8. Rancidity can be prevented by:
   a) Adding antioxidants
   b) Storing food in air tight containers
   c) Both a & b
   d) None of these
9. Which statement is correct about a chemical equation?
   a) It tells about physical state of reactants
   b) It tells whether reaction is exothermic or endothermic
   c) It tells if heat, catalyst used
   d) All of these
10. In the reaction $CuO + H_2 \rightarrow Cu + H_2O$, the substance oxidized is:
    a) CuO b) H_2 c) Cu d) H_2O

Assertion reason

a. Both A & R true, R explains A

b. Both true, R not correct explanation
c. A true, R false
d. A false, R true

11. **Assertion:** Burning of natural gas is an exothermic reaction.
Reason: Products formed have less energy than reactants.

12. **Assertion:** Corrosion of iron is a serious problem.
Reason: Every year a large amount of money is spent to replace damaged iron.

Very short answer type questions

13. Why do we apply paint on iron articles?

14. Write the balanced chemical equation for: Zinc + Silver nitrate → Zinc nitrate + Silver

Short answer type questions

15. What is a redox reaction? Identify the substance oxidized and reduced in: $MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$

16. Differentiate between displacement and double displacement reactions with one example each.

Long answer type questions

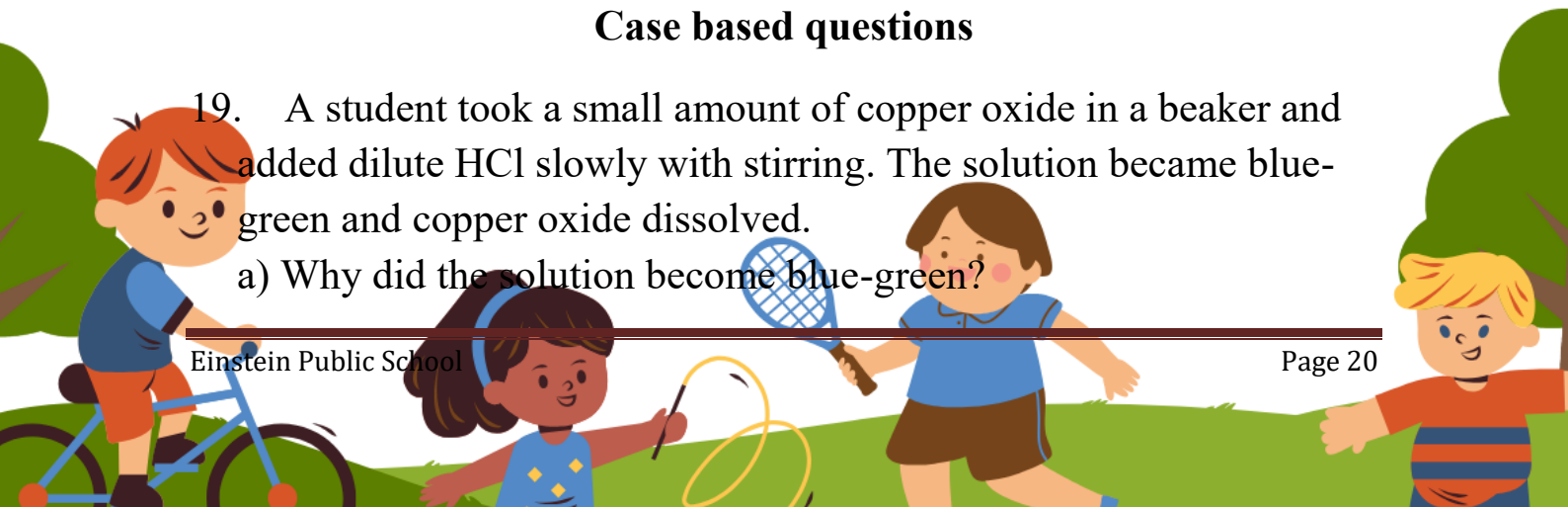
17. a) What is a balanced chemical equation? Why should equations be balanced?
b) Balance: $HNO_3 + Ca(OH)_2 \rightarrow Ca(NO_3)_2 + H_2O$

OR

18. Explain the types of chemical reactions with one example each: Combination, Decomposition, Displacement.

Case based questions

19. A student took a small amount of copper oxide in a beaker and added dilute HCl slowly with stirring. The solution became blue-green and copper oxide dissolved.
a) Why did the solution become blue-green?



b) Write the balanced chemical equation for the reaction.
c) What type of reaction is this?
d) What will happen if copper oxide is replaced with sodium hydroxide?

20. Practical: 2 Experiments from Lab Manual
    a. Experiment 1: To observe the chemical reaction when magnesium ribbon is burnt in air.
    b. Experiment 2: To observe reaction between sodium sulphate and barium chloride.
    c. Experiment 2: To observe reaction between sodium sulphate and barium chloride.

Artificial Intelligence

1-	Write and create a communication cycle with project.
2-	Explain self motivation with real life examples.
3-	Create a project of different ways of feedback.
4-	Draw non verbal communication pics and examples.
5-	Draw 7 Cs of effective communication
6-	Explain Stress in your version. What is A B C in Stress?
7-	What is S M A R T goal.