Delhi International School
## Class –X
Subject – Physics
Summer Vacation Homework (2018-19)

1. Draw image formation when an object is placed in front of a concave mirror at different positions.

2. The refractive index of glass is 1.5. What is the meaning of this statement?

3. Why absolute refractive index is always greater than 1?

4. What is the cause of dispersion of light? How rainbow is formed? Write conditions to observe rainbow.

5. A concave mirror produces three times magnified (enlarged) real image of an object at 10cm in front of it. Where is the image located?

6. Incident ray AB falls on a lens the refracted ray is BC as shown in figure. Name the lens in each case.

Lens   Lens
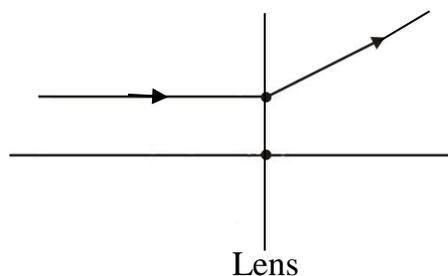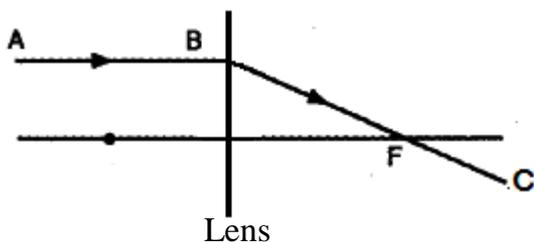
7. How can you identify the three types of mirrors without touching?

8. Refractive indices of media A, B, C and D are given below:

Media	Refractive index
A	1.33
B	1.44
C	1.52
D	1.65

   In which of these four media is the speed of light (i) maximum (ii) minimum? Find refractive index of medium D w.r.t. medium A.

9. Explain with the help of a diagram, why a pencil partly immersed in water appears to be bent at the water surface?

10. A person needs a lens of power – 5.5 dippers for correcting distinct vision. For correcting his near vision, he needs a lens of power +1.5 dioptre. What is the focal length of the lens required for correcting (i) distinct vision (ii) near vision?

11. Why does it take some time to see objects in a cinema hall when we just enter the hall from bright sun light? Explain.

12. Why do we have two eyes instead of one eye?

13. How is a normal eye able to see distinctly distant as well as nearer objects? What is the distance of distinct vision?

14. Describe an activity to show that the apparent depth of a coin at the bottom of bucket filled with water is less than the real depth of the coin in water.

15.   Draw diagrams for the following: -
     (i)   Hypermetropic eye and its correction.
     (ii)   Myopic eye and its correction.
     (iii)   To find angle of deviation through a glass prism.
     (iv)   Dispersion of white light through a glass prism.
     (v)   Refraction of light through glass slab.
     (vi)   Formation of rainbow.
     (vii)   Twinkling of stars.
     (viii) Image formation with convex lens (all six cases).

Note: (i)   Every student would prepare one chart related to physics.
       (ii)   Student will prepare the project/activity related to science [theoretically + practically].

Delhi International School
Class –X
Subject – Chemistry
Summer Vacation Homework (2018-19)

1. How are alveoli lungs designed to maximize the exchange of gases?
2. How are fats digested in our bodies? Where does this process take place?
3. How is food transported in a plant?
4. What are different components of blood? Give functions of them.
5. (a) Name the blood vessel that brings deoxygenated blood to human heart.

   (b) Which chamber of the human heart receives deoxygenated blood?

   (c) Describe how deoxygenated blood from this chamber is sent to lungs for oxygenation.
6. Draw human digestive system.
7. How are water and minerals dbsonsed and transported in the plants?
8. Draw structure of human respiratory system.
9. Describe the structure and function of Nephron.
10. What is effect of life style on gastric juice?
11. Why do fishes die when taken out of water?
12. "All plants give out O_2 during day and CO_2 during night." Do you agree with this statement? Give reasons.
13. Why are ventricles think walled and muscular?
14. What is the composition of urine? Are glucose and present in it? It not why?
15. What will happen if platelets were absent in blood?
16. How many chambers are present in filsh heart?
17. Which pancreatic enzyme is effective in digesting proteins?
18. Which enzyme is responsible for fat digestion?

Delhi International School
Class –X
Subject – Biology
Summer Vacation Homework (2018-19)

1. Explain the term thermal decomposition giving a suitable example.

2. What changes in the colour of iron nails and copper sulphate do you observe after keeping the iron nails dipped in copper sulphate solution for about 30 minutes?

3. What happens when aqueous solutions of sodium sulphate and barium chloride are mixed? What type of reaction is it?

4. Give reasons for the following:

   (i) Blue colour of copper sulphate solution fades if a zinc rod is immersed in it.

   (ii) White silver chloride turns grey if kept in sunlight.

   (iii) Magnesium ribbon is cleaned with sand paper before burning.

   (iv) Silver articles turn black if left exposed to atmospheric conditions for few days.

   (v) Chips are packed under the atmosphere of nitrogen.

5. Zinc liberates hydrogen as when reacted with dilute hydrochloric acid, whereas copper does not. Explain.

6. Will the reaction of granulated zinc with dilute $HC\ell$ and CH_3COOH be same or different? Explain giving reactions.

7. What is milk of magnesia? Give its use. Predict its pH.

8. What happens when:

   (i) Sodium hydrogen carbonate is heated strongly.

   (ii) Aqueous solution of sodium chloride is electrolyzed.

   (iii) Gypsum is heated at 373K.

9. How does the conc. of H_3O^+ conc. get affected if the solution of acid is diluted?

10. A compound of sodium 'X' is used as an antacid and is also used in fire extinguisher.

    (i) Identify the compound and give its common name.

    (ii) Why is it used as an antacid?

    (iii) What is the role of 'X' in fire extinguisher?

    (iv) Con we make use of baking powder instead of 'X' while baking cake? Why?

11. Why should curd and some substances not be kept in brass and copper vessels?

12. Write the equations to represent the reaction of sodium hydroxide:

    (i) with zinc metal

    (ii) with carbon dioxide

    (iii) with hydrochloric acid

13. The pH value of fresh sample of milk is very near to 6. How will the pH change when milk is changed to curd? Explain.

14. Why does an aqueous solution of ammonium chloride have acidic nature?

15. Write the chemical reactions involved in formation of washing soda?

16. Are all combustion reactions, oxidation reactions? Why?

17. What happens chemically when quick lime is added to water filled in a bucket?

18. Write the name and chemical formula of the products formed by heating gypsum at 373K?

19. What is water of crystallization in a substance? How would you show that blue copper sulphate crystals contain water of crystallization?

20. Complete the following word equations:

    (i)   Zinc + Hydrochloric acid $\longrightarrow$

    (ii)   Magnesium Carbonate + Hydrochloric acid $\longrightarrow$

    (iii)   Calcium hydrozide + Nitric acid $\longrightarrow$

    (iv)   Carbonic acid + Sodium hydroxide $\longrightarrow$

    (v)   Calcium carbonate + Sulphuric acid $\longrightarrow$

Delhi International School
Class –X
Subject – Social Science
Summer Vacation Homework (2018-19)

I.   Show on the political map of Indian the following (use separate map of different items).

1.   Any 10 multipurpose river valley projects.

2.   Food crops grown in India.

3.   Oilseed crops grown in India.

4.   Beverage crops grown in India.

5.   Horticulture crops grown in India.

6.   Different type of Soils in India.

7.   Oil fields in India.

8.   Coal mines in India.

9.   Iron ore bets in India.

10.   Thermal and Nuclear power plants in India.

11.   Iron and Steel Industries.

12.   Cotton and Jute textile industries.

13.   Why did the U.S. entry into the Vietnamese War proved costly to Vietnam as well as to the America? (The Nationalist Movement in Indo China)

14.   Why political parties are considered as a necessary condition for democracy? (Political Parties)

15.   Elaborate the role of WTO in Globalisation. (Globalisation)

16.   Every group will prepare a working model assigned to them and submit it on the reopening of the school.

Delhi International School
Class –X
Subject – Mathematics
Summer Vacation Homework (2018-19)

I. ONE MARKS QUESTIONS:

1. If LCM (77, 99) = 693, find HCF.   [HCF=11]

2. How many maximum number of zeroes that a polynomial of degree 3 can have?   [3]

3. Is sequence $\sqrt{3}, \sqrt{6}, \sqrt{9}, \sqrt{12}, \_\_\_\_$ an AP? Give reason.

4. If $\left[3, \frac{3}{4}\right]$ is the midpoint of the line segment joining the points (k, 0) and $\left[7, \frac{3}{2}\right]$; find the value of k.   [k = −1]

5. If tan A = cot B, prove that A + B = 90^0.

6. What is the angle of elevation of a 15 metres high tower from a point 15 metres away from its foot?   [45^0]

7. In the figure, if PT is a tangent to the circle with centre 0 and $\angle TPO = 25^0$, then find the measure of x^0.   [115^0]
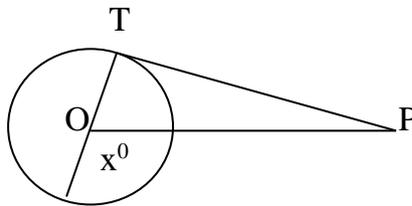
8. By geometrical construction, is it possible to divide a line segment in the ratio $\left(\sqrt{2} + 1\right) : \left(\sqrt{2} - 1\right)$? Give reason.   [No.]

9. Find the class mark of the class interval 17 – 19.   [18]

10. A die is thrown once. Find the probability of getting a number which is not a factor of 36. $\left[\frac{1}{6}\right]$

II. TWO MARK QUESTIONS:

1. Chances of winning a game are 60%. If Anil has played the game 20 times, how many times he can expect to lose?   [8 games]

2. In a class test, marks scored by students are given in the following frequency distribution:

Marks	0 – 6	6 – 12	12 – 18	18 – 24	24 – 30
No. of Students	1	4	9	3	3

Find the median of the data?   [15.3]

3. Draw a line segment of length 18cm and divide it in the ratio 1:3. Measure each part.

$$\begin{bmatrix} AP = 4.5cm \\ BP = 13.5cm \end{bmatrix}$$

4. In two concentric circles, a chord of length 24cm of larger circle becomes a tangent to the smaller circle whose radius is 5cm. find the radius of the larger circle.   [13cm]

5. Prove that: $\left[\frac{sinA}{1+cosA} + \frac{1+cosA}{sinA}\right] . \left[\frac{sinA}{1-cosA} - \frac{1-cosA}{sinA}\right] = 4$ cosec A . cot A.

6. In A.P : 56, 63, 70, $\_\_\_\_$, 497, how many terms are there?   [64]

7. If the points (1, 2), (4, y), (x, 6) and (3, 5) are the vertices of a parallelogram taken in order, find values of x and y.   [x=6; y=3]

8.	The tops of two poles of heights 18m and 12m are connected by a wire. If the wire makes on angle of 30^0 with the horizontal, find the length of the wire.	[12m]

9.	Find HCF of the numbers 31, 310 and 3100.	[31]

10.	If one zero of the polynomial $x^2 - 4x + k$ is 2, then find the value of k.	[4]

## III.	THREE MARK QUESTIONS:

1.	Prove that $\sqrt{5}$ is an irrational number.

2.	What should be added in the polynomial $x^3 + 2x^2 - 9x + 1$ so that it is completely divisible by $x + 4$?	[–5]

3.	The 8th term of an AP is 0. Prove that its 38th term is triple of its 18th term.

4.	Find the point on the x-axis which is equidistant from the points (2, –5) and (–2, 9). Also find the area of the isosceles triangle so formed.	[Point (–7, 0)]
	[Area = 53 sq. units]

5.	Given that cos (A + B) = cos A. cos B – sin A . sin B. Find the value of cos 750.	$\left[\frac{\sqrt{3}-1}{2\sqrt{2}}\right]$

6.	The horizontal distance between two towers is 60m. The angle of elevation of the top of the taller tower as seen from the top of the shorter one is 30^0. If the height of the taller tower is 150m, then find the height of the shorter tower?	[115.36m]

7.	Prove that the parallelogram circumscribing a circle is a rhombus.

8.	Draw a ΔABC with sides BC = 6cm, AB = 5cm and $\angle$ABC = 60^0. Construct a ΔA'BC' similar to ΔABC such that sides of ΔA'BC' are ¾ of the corresponding sides of ΔABC.

9.	A number x is chosen from –5, –4, –3, –2, –1, 0, 1, 2, 3. Find the probability that $|x| < 3$.

10.	The following table gives production yield per hectare of pulses of 100 forms:

Yield (kg/ho)	25 – 30	30 – 35	35 – 40	40 – 45	45 – 50	50 – 55	55 – 60
No. of forms	2	7	x	36	y	5	2

	If the mean production is 43 kg/ha, find the messing frequencies x and y.	[x=17; y=31]

## IV.	FOUR MARK QUESTIONS:

1.	From the top of a tower the angle of depression of an object on the horizontal ground is found to be 60^0. On descending 20m vertically downwards from the top of the tower, the angle of depression of the object is found to be 30^0. Find the height of tower?	[30m]

2.	Prove that:	$\sqrt{\frac{sec\theta-1}{sec\theta+1}} + \sqrt{\frac{sec\theta}{sec\theta}} = 2\ cosec\ \theta$

3.	If XY and PQ are two parallel tangents to a circle with centre O and another tangents AB with point of contact C intersecting XY at A and PQ at B, prove that $\angle$AOB = 90^0.
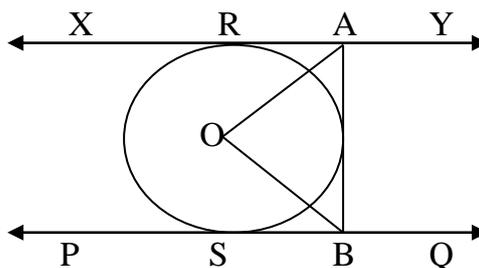
4.	Draw a circle of radius 3cm. Take two points P and Q on the extended diameter each at a distance of 7cm from the centre. Draw tangents to the circle from these points P and Q.

5. Two dice are thrown simultaneously. Find the probability of getting:
   (i)   a sum less than 5   (ii)   a sum greater than 3
   (iii) a sum more than 8   (iv)   a product less than 12

6. Following is the age distribution of cardiac patients admitted during a month in a hospital:

Age (in yrs)	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80
No. of Patients	2	8	15	12	10	5

   Draw a 'less than type' and a 'more than type' ogives and from the curves, find median.

   [50.8 years]

7. What is the HCF and LCM of two prime numbers a and b? [HCF = 1, LCM = ab]

   Three alarm clocks ring at intervals of 6, 9 and 15 minutes respectively. If they start ringing together, after what time will they next ring together? [90 minutes]

8. If the polynomial $8x^4 + 14x^3 - 2x^2 + 8x - 12$ is divided by $4x^2 + 3x - 2$, the remainder comes out to be ax + b. Find a and b. [a = 15, b = –4]

9. If third and ninth terms of an AP are 4 and – 8 respectively, then is there any term of this AP which is zero? [fifth term]

10. Prove that the points A(0, 0); B(0, 2) and C(2, 0) are the vertices of an isosceles right triangle. Also find its area. [2 sq. units]

Delhi International School
Class –X
Subject – Hindi
Summer Vacation Homework (2018-19)

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