



**Brain International School**

Vikas Puri, New Delhi

Honoured with  
●● BRITISH COUNCIL International  
●● COUNCIL School Award  
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Class-IX

Session 2017-18

**Summer is the time to have a respite from heat**

**Let's do something creative for intellectual treat**

**So, balance your study and rest hours,**

**Help your mom - dad and add more power.**

**With your values and discipline explore new heights,**

**Let you and us be glad that *you are a BRAINITE.***

**Wish you all happy and healthy holidays!**

## **ENGLISH**

Instruction: **Attempt all the given questions in the Writing Skills Notebook**

### **Writing and Reading Skills**

1. Life is full of adventure for those who are willing to take risk. In the light of the given statement write an article on “Adventure is another name for life” after reading the MCB Unit-2 Adventure.
2. M.C.B. Unit-2 ‘Adventure’ Do Q A.3 and A.4 after reading A.2 (Do in book only) and C.4 after reading C.3.

**Novel: Gulliver’s Travel: Read part 1 and Part 2 and attempt the following:**

3. Gulliver was a man of intelligence, skill hard work and honour. Discuss.
4. Write a brief character sketch of Liliputian king.
5. How do you know Liliputians had a good knowledge of Maths?
6. Why was it difficult for Gulliver to swim across the violent storm?
7. Based on your reading comment- ‘Is Gulliver a misanthropist’?
8. Write a short character sketch of : Gulliver and Captain Robinson

## **HINDI**

- गांधी जी की आत्मकथा ‘सत्य के प्रयोग’ पढ़कर उसका सारांश लगभग 100 शब्दों में लिखें।
- आवर्ती परीक्षा हेतु निम्न वर्कशीट करें।

प्रश्न १ निम्नलिखित गद्यांश पर आधारित प्रश्नों के संक्षिप्त उत्तर दीजिए-

राजा अम्बरीश मार्ग से गुज़र रहे थे। उन्होंने देखा एक युवक खेत में हल जोत रहा है और बहुत प्रसन्न है। राजा ने उससे पूछा “ युवक, तुम्हें इतनी मेहनत करते हुए भी प्रसन्न देख कर मैं हैरान हूँ। तुम्हारी इस मस्ती का क्या रहस्य है? “ युवक ने उत्तर दिया , “ मैं हर क्षण भगवान को याद करके संतुष्ट रहता हूँ। इसलिए सदा प्रसन्न और मस्त रहता हूँ। “ राजा ने पूछा, “ तुम कितना कमा लेते हो? “ वह बोला , “राजन , मैं रोज़ एक रुपया कमाता हूँ और उसे चार जगह बाँटता हूँ। माता-पिता ने मुझे पाला-पोसा है अतः चार आने उनको भेंट करता हूँ, चार आने अपने परिवार के भरण पोषण के लिए देता हूँ, चार आने

अपने बच्चों के भविष्य के लिए सुरक्षित रख देता हूँ और शेष चार आने ज़रूरतमंद लोगों की सेवा में लगा देता हूँ। “ राजा को उसकी मस्ती का रहस्य समझ में आ गया ।

१. राजा किसे देखकर हैरान हुआ और क्यों?

२. युवक की प्रसन्नता का क्या कारण था?

३. गद्यांश का संदेश अपने शब्दों में लिखो।

प्रश्न २ निम्न प्रश्नों के संक्षेप में उत्तर में दीजिए-

१. धूल के सम्बंध में लेखक के विचार सामान्य लोगों से कैसे भिन्न हैं?

२. गोधुलि शब्द का अर्थ स्पष्ट करते हुए उस दृश्य का वर्णन कीजिए।

३. फुटपाथ पर बैठी वृद्ध महिला की दशा का वर्णन करें।

४. लेखक को क्यों लगा कि दुखी होने का भी एक अधिकार होता है?

५. पाठ ' दुःख का अधिकार ' के आधार पर समाज में व्याप्त अंधविश्वासों का वर्णन कीजिए।

६. सिद्ध कीजिए कि संत कवि रैदास स्वयं को ईश्वर की तुलना में तुच्छ समझते हैं?

७. रैदास प्रभु की कैसी भक्ति करना चाहते हैं और क्यों?

प्रश्न ३ विस्तार से उत्तर दीजिए-

१. सिद्ध कीजिए कि गिल्लू लेखिका से उतना ही प्यार करता था जितना लेखिका को गिल्लू से लगाव था।

२. महादेवी वर्मा ने गिल्लू की मृत्यु को किस रूप में स्वीकार किया?

प्रश्न ४ निर्देशानुसार उत्तर दीजिए-

१. वर्ण विच्छेद करो- प्रतीक्षा , सहानुभूति

२. उचित स्थान पर अनुस्वार, अनुनासिक या नुक्ता का प्रयोग करें जमीन, फरिश्ता, सस्कार, दडित , पाच, आख।

3. चिह्न बताएँ - लाघव, कोष्ठक, त्रुटिपूरक, विस्मयबोधक चिह्न।  
प्रश्न ५ 'परिश्रम सफलता की कुंजी है' - विषय पर ८०- १०० शब्दों में अनुच्छेद लिखिए।

प्रश्न ६ अपने पिताजी को प्रतियोगिता में प्रथम आने की सूचना देते हुए पत्र लिखिए।

प्रश्न ७ दिए गए चित्र का वर्णन लगभग ४० शब्दों में कीजिए -



## **MATHS**

Instruction: Complete the following in the register maintained for the reference book by R.S Aggarwal

a) Page 91 of the reference book: Q 1-20 and Exercise 4(C)

b) Complete the given Worksheet

### **TOPIC- NUMBER SYSTEM**

1. Simplify:  $\sqrt[4]{\sqrt[3]{x^2}}$  and express the result in the exponential form of x.
2. Simplify:  $8\frac{2}{3} - \sqrt{9} \times 10^0 + (\frac{1}{144})^{-1/2}$
3. Evaluate after rationalising the denominator of  $\frac{25}{\sqrt{40}-\sqrt{80}}$  (Use  $\sqrt{5}=2.236$  and  $\sqrt{10}=3.162$ )
4. Visualise the representation of  $4.\overline{67}$  on the number line upto 4 decimal places.

5. If  $x$  is a positive real number and exponents are rational numbers,  
simplify:  $\left[\frac{x^b}{x^c}\right]^{(b+c-a)} \times \left[\frac{x^c}{x^a}\right]^{(c+a-b)} \times \left[\frac{x^a}{x^b}\right]^{(a+b-c)}$
6. Simplify:  $\left(\frac{64}{25}\right)^{-3/2}$
7. Simplify:  $\frac{2^{p-q}}{2^{r-q}} \times 2^{r-p}$
8. Simplify:  $\frac{\sqrt{6}}{\sqrt{2}+\sqrt{3}} + \frac{3}{\sqrt{6}+\sqrt{3}} - \frac{4\sqrt{3}}{\sqrt{6}+\sqrt{2}}$
9. Express  $2.\overline{36} + 0.\overline{23}$  as a fraction in simplest form.
10. Insert five rational numbers between  $\frac{\sqrt{5}}{7}$  and  $\frac{4}{9}$
11. If  $2^x = 6^y = 18^z$  then prove that  $\frac{2}{y} = \frac{1}{x} + \frac{1}{z}$
12. Express (i)  $0.33\overline{7}$  (ii)  $0.7\overline{283}$  (iii)  $0.47$  as a number in the form  $\frac{p}{q}$ , where  $p$  and  $q$  are integers and  $q \neq 0$
13. If  $p = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$  and  $q = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$  find  $p^2+q^2$
14. Simplify:  $\left[\frac{x^p}{x^q}\right]^{p+q} \times \left[\frac{x^q}{x^r}\right]^{q+r} \times \left[\frac{x^r}{x^p}\right]^{r+p}$
15. Rationalize the denominator of  $\frac{4}{2+\sqrt{3}+\sqrt{7}}$
16. If  $q = \frac{5-\sqrt{21}}{2}$  then prove that  $(x^3 + \frac{1}{x^5}) - 5(x^2 + \frac{1}{x^2}) + (x + \frac{1}{x}) = 0$
17. Express  $\frac{\sqrt{a^2-b^2}+a}{\sqrt{a^2+b^2}+b} \div \frac{\sqrt{a^2+b^2}-b}{a-\sqrt{a^2-b^2}}$  in the simplest form.
18. Evaluate:  $(0.00032)^{-\frac{2}{5}}$
19. Give an example of two irrational numbers whose  
(i) Sum is rational  
(ii) Product is rational  
(iii) quotient is rational
20. If  $x=3+2\sqrt{2}$ , find the value of  $(\sqrt{x} - \frac{1}{\sqrt{x}})$
21. Write the following in the ascending order of their magnitude .  
 $\sqrt{3}, \sqrt[3]{4}, \sqrt[4]{6}$
22. Find the product of  $\sqrt[3]{2}, \sqrt[4]{2}$  and  $\sqrt[12]{32}$
23. Simplify  $\frac{1}{2+\sqrt{5}} + \frac{1}{\sqrt{5}+\sqrt{6}} + \frac{1}{\sqrt{6}+\sqrt{7}} + \frac{1}{\sqrt{7}+\sqrt{8}}$
24. Rationalize the denominator of  $\frac{1}{\sqrt{7}+\sqrt{6}-\sqrt{13}}$
25. Let  $x$  and  $y$  be rational and irrational numbers respectively. Are  $x+y$  and  $xy$  irrational ?  
Justify your answer by an example for each.
26. Find three rational numbers between  $\frac{3}{5}$  and  $\frac{7}{8}$
27. Rationalize the denominator and hence find the value if  $\sqrt{5} = 2.236$  and  $\sqrt{3} = 1.732$ :  
 $\frac{6}{\sqrt{5}+\sqrt{3}}$

28. Simplify:  $\left[\frac{81}{36}\right]^{-3/4} \times \left[\left(\frac{25}{9}\right)^{-3/2} \div \left(\frac{5}{2}\right)^{-3}\right]$
29. Solve for x:  $5 \cdot 9^x = 3^{2x+2} - 324$  (Ans: x=2)
30. Find p and q if  $\frac{\sqrt{3}-1}{\sqrt{3}+1} = p+q\sqrt{3}$
31. If  $\frac{5+2\sqrt{5}}{7+4\sqrt{3}} = a+b\sqrt{3}$ . Find the value of a and b.
32. Find the values of a and b if  $\frac{7+3\sqrt{5}}{3+\sqrt{5}} - \frac{7-3\sqrt{5}}{3-\sqrt{5}} = a+\sqrt{5}b$
33. If  $\frac{5+2\sqrt{3}}{7+4\sqrt{3}} = a+b\sqrt{3}$  then find the values of a and b .
34. Simplify  $\frac{2}{\sqrt{5}+\sqrt{3}} - \frac{3}{\sqrt{5}+\sqrt{2}}$
35. Find the two irrationals between  $1/7$  and  $2/7$
36. Simplify by rationalizing the denominator  $\frac{6-4\sqrt{3}}{6+4\sqrt{3}}$
37. Find the value of :  $\frac{4}{216^{-2/3}} - \frac{1}{256^{-3/4}}$
38. Represent  $\sqrt{4.5}$  on the number line
39. If  $24^x = \frac{16}{9^y}$  find x and y. (Ans : x = 4/3 and y= -2/3)
40. Find the value of :  $256^{0.16} \times 256^{0.09}$
41. If  $x = \frac{\sqrt{p+2q} + \sqrt{p-2q}}{\sqrt{p+2q} - \sqrt{p-2q}}$  then prove that  $qx^2 - px + q = 0$
42. If  $5^{x-3} \cdot 3^{2x-8} = 225$  then find x.
43. Show that:  $\frac{1}{3-\sqrt{8}} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-2} = 5$
44. Prove that  $\left(\frac{x^l}{x^m}\right)^{1/lm} \left(\frac{x^m}{x^n}\right)^{1/mn} \left(\frac{x^n}{x^l}\right)^{1/nl} = 1$
45. If  $x = 3-2\sqrt{2}$ , then find the value of  $(x^2 - \frac{1}{x^2})$

## SCIENCE

Instruction: **Attempt all the given questions in the respective subject notebooks.**

### Physics:

1. Define uniform circular motion with examples.
2. Define uniform and non-uniform motion with examples.
3. Derive (i)  $v = u + at$  (ii)  $s = ut + \frac{1}{2}at^2$  (iii)  $v^2 = u^2 + 2as$ .
4. Draw v-t graph for a body moving with positive acceleration and negative acceleration.

5. A bullet is moving at a speed of 100 m/s when it embeds into a lump of moist clay. The bullet penetrates for a distance of 10 m. Determine the acceleration of the bullet while moving into the clay. (Assume a uniform acceleration.)      Ans: 500m/s<sup>2</sup>
6. A coin is dropped into a deep well and is heard to hit the water 3.41 s after being dropped. Determine the depth of the well.  
Ans: 57m
7. A kangaroo is capable of jumping to a height of 2.62 m. Determine the takeoff speed of the kangaroo.      Ans:  
7.17m
8. Why can dust be removed by shaking it, or beating it by a carpet?
9. Why is it advised to tie a rope on the luggage while you travel by the bus?
10. Why do passengers jumping out of a rapidly moving bus fall forward with his face downwards, if he does not run forward?
11. Why the cricket player moves his hand backwards on catching a fast cricket ball?
12. Derive  $F = ma$ , using Newton's second law of motion.
13. There are three solids made up of aluminium, steel and wood, of the same shape and same volume. Which of them would have highest inertia?
14. Two identical bullets are fired one by a light rifle and another by a heavy rifle with the same force. Which rifle will hurt the shoulder more and why?
15. An object starting from rest travels 20 m in first 2 s and 160 m in next 4 s. What will be the velocity after 7 s from the start?      Ans:  
70m/s

### **Chemistry :**

**Topic:** Matter in Our Surroundings.

1. Define latent heat of fusion and latent of vaporization .Also write their S.I. units.
2. What is meant by diffusion? Why do gases diffuse very fast?
3. What is the difference between a gas and a vapour?
4. What are the characteristics of the particles of matter?
5. What is meant by sublimation?
6. What is the difference between boiling and evaporation? Is latent heat absorbed during evaporation also?
7. What is meant by plasma?
8. Why are gases compressible but liquids are not?

9. Convert the following temperatures in to Celsius scale: (a) 123K (b)373K (c)400K (d) 573K
10. Convert the following temperatures in to Kelvin scale: (a) 50 °C (b) 127° C (c) 27 °C (d) -23° C
11. Explain briefly, how gases can be liquefied ?
12. Draw a labeled diagram of the experiment set-up to demonstrate the sublimation of ammonium chloride.
13. Draw the states of matter triangle to show the inter conversion of states of matter.
14. Explain why, naphthalene balls kept in stored clothes in our homes disappear over a period of time.
15. Would you cool a bucket of water more quickly by placing it on ice or by placing ice in it?  
Give reason for your answer.

### **Biology :**

#### **Topic: The Fundamental Unit of Life**

1. Where will you find more number of ribosomes- in cancer cells or fat cells?
2. A solution of 3% glucose and a solution of 8% glucose are kept in a trough separated by a semi-permeable membrane. What will you observe after 1 hour?
3. Write down the names of two nucleic acids. What are their functions?
4. Name the cell organelle that serves as channels for the transport of materials between various regions of cytoplasm.
5. Draw a neat and labelled structure of mitochondria.
6. Why does the skin of your finger shrink ,when you wash clothes for a long time?
7. Draw a plant cell and label the parts which
  - (a) Determines the function and development of a cell
  - (b) Packages materials coming from the endoplasmic reticulum.
  - (c) Provides resistance to microbes to withstand hypotonic external media without bursting .
  - (d) Is the site for many biochemical reactions necessary to sustain life.
  - (e) Is a fluid contained inside the nucleus.



8. State what happens when:

(a) Dry apricots are left for sometime in pure water and later transferred to sugar solution.

(b) Rheo leaves are boiled in water first and then a drop of sugar syrup is put on it?

(c) Golgi apparatus is removed from the cell?

9. How is a bacterial cell different from an onion peel?

10 How are chromatin, chromatid, and chromosomes related to each other?

**Topic: Tissues-Plant tissues**

11. Write the difference between tracheids and vessels.

12. Compare xylem and phloem.

13. Give reasons:

(a) Meristematic cells have a prominent nucleus and dense cytoplasm but they lack vacuole.

(b) Inter cellular spaces absent in sclerenchymatous tissue.

(c) Branches of a tree move and bend freely in high wind velocity.

(d) It is difficult to pull out the husk of a coconut tree.

14. List the characteristics of cork. How are they formed?

15. Why is epidermis important for plants?

16. Draw well labelled diagrams of sclerenchyma and parenchyma tissues.

**SOCIAL SCIENCE:**

**Activity 1**

Write a report on any one Natural disaster and suggest some remedial measures. The report would be assessed based on the following parameters:

- a) Content Accuracy and originality (1)
- b) Presentation and creativity (1)
- c) Process of project completion (1)
- d) Viva/ written test for content assimilation (2)

**Activity 2**

Make a collage with the help of Newspaper articles depicting the usage of “Freedom of Expression” in our day to day life. Parameters on which the collage would be marked are as follows:

- a) Content chosen (2)
- b) Understanding/relevance (2)
- c) Presentation (1)

## **FOUNDATION OF I.T.**

In Openoffice.org writer, type the following documents. Take the printouts of the following activities and file it in a ring file.

- a) **Formal letter writing**-Write a letter to the school asking for sports scholarship for the students who have participated at National Level.
- b) **Report Writing**- Write a brief report on ‘International No diet Day’ observed on 6<sup>th</sup> May 2017’ . Your report should contain real information like actual facts, data, tables, diagrams, illustrations, charts etc related to the theme.

## **FRENCH**

- **Task 1:** Students can make project on Famous & Renowned Universities (5 each) to do Technical and professional courses in France. They will learn about Universities and education system of French Universities.
- **Task 2 :** Do the work sheet based on chapter 1 & 2

### **REVISION SHEET**

#### **Q1. Complétez avec les articles défini ou indéfinis.**

1. J’adore ..... café très fort et sans sucre.
2. C’est ..... bière que je préfère.
3. Il boit ..... bière après le travail.
4. Nous écoutons ..... disques toute la journée.
5. .... disques d’Edith Piaf sont en vente chez tous les disquaires.
6. .... Anglais aiment beaucoup leur reine.
7. J’ai vu ..... Anglais au cinéma.
8. Il y a ..... étudiants dans la classe.
9. Nous aimons beaucoup ..... symphonies de Beethoven.
10. J’ai entendu ..... symphonie de Mozart à la radio.

#### **Q2. Trouvez les questions auxquelles les mots soulignés sont les réponses:-**

1. Il va à Paris.
2. Nous partirons pour Rome demain.
3. Tous les matins, il se réveille à six heures.
4. Marie est triste parce que son ami est malade.

5. J'ai trois livres dans mon sac.
6. le livre est sur la table?

**Q3. Complétez avec les adjectifs possessifs.**

1. C'est la photo de Caroline. - C'est \_\_\_\_\_ photo.
2. Ce sont les livres de Thyra. - Ce sont \_\_\_\_\_ livres.
3. Voici la voiture de Derrick. - Voici \_\_\_\_\_ voiture.
4. Ce crayon est à toi. - C'est \_\_\_\_\_ crayon.
5. C'est la vieille maison de Bart Simpson. - C'est \_\_\_\_\_ vieille maison.
6. La bouteille d'eau est à moi. - C'est \_\_\_\_\_ bouteille d'eau.
7. C'est un ami à toi? - Oui, c'est \_\_\_\_\_ ami.
8. La table est à Lore. - C'est \_\_\_\_\_ table.
9. Ce sont les copines de Bert? - Non, ce ne sont pas \_\_\_\_\_ copines.
10. La radio est à moi. - C'est \_\_\_\_\_ radio.

**Q4. Complétez avec les prépositions de lieu (a/au/aux/en/de/du/d'/des)**

1. Soulignez la préposition ou locution prépositionnelle correcte. Marianne écrit à ses amis français qui habitent en/ au Portugal. Ils vivent à /en Lisbonne. « Je veux vous présenter ma chambre .C'est la pièce de ma maison que je préfère ! Elle se trouve loin de /dans un petit appartement à /en Paris, en/ à France. Regardez bien la photo. Ma chambre est à droite de / au milieu de la chambre de mes parents. Sur / dans ma chambre, j'ai un lit , une armoire, un bureau, des étagères et un beau tapis à côté / au milieu. Les étagères sont entre / sur la petite porte et la fenêtre. Derrière / à gauche de mon lit il y a ma table de nuit. L'armoire est devant / sous la porte et le bureau est sur/près de l'armoire. »

**NOTE: Revise PT 1 Syllabus of all the subjects.**