**THE ROYAL COLLEGE**

**SUMMER HOLIDAY HOMEWORK**

**SESSION 2018 - 2019**

**STD. :- IX**

 **English**

Q1- Read chapter 1 to 5 from your supplementary reader book ‘Moment’. Write summaries of all the chapters and do all relevant exercises and Questions Answers given at the end of the chapter in a separate note book.

2- In holiday you have used Mobile and Internet. Write in a diary its impact on your mind, time for family and interest, time for reading, writing. Facts for the topic could be imagined (about 250 words)

**Hindi**

Read the chapter 1,2,3 from your Hindi book ‘Sanchayan’ and complete the Question Answer in a separate note book.

Write the biography of Mahadevi Verma, Harivansh Rai Bachan Both in 100 to 120 words.

 **Maths**

Q1- If a = 5+2$√6$ and b= 1/a, then find the value of a2 +b2

Q2- A point lies on the x-axis at a distance of 7 units from y-axis, what are its co ordinates? What will be the coordinates if it lies on y-axis at a distance of units from x-axis?

Q3- Find the zeros of the polynomial.

P(x) = (x-2)2 - (x+2)2

Q4- If the polynomials (2x3+ax2+3x-5) and (x3-x2-4x+a) leave the same remainder when divided by (x-2), find the value of ‘a’.

Q5- writes a short note on any two mathematicians? (120-150 words)

Q6- simplify: [5{81/3 + 271/3 }]1/4

Q7- If X= 7+ $√48$, find the value of $\sqrt{x}+ 1$

 $√x$

Q8- Write the Co-ordinate of the vertices of a rectangle whose length and breadth are 5 and 3 units respectively, one vertex at the origin, the longer side lies on the x-axis and one of the vertices lies in the third quadrant.

Q9-If a+b+c=9 and ab + bc+ ca = 26, find a2+b2+c2 .

Q10- Simplify: (91/3x27-1/2)

 (31/6x3-2/3)

Q11- Plot the point p (-3,6) on graph and from it draw PM and PN Perpendicular to x-axis and y-axis respectively, write the co-ordinate of M and N

Q12-If x3+mx2-x+6 has (x-2) as a factor and leaves a remainder ‘n’ When divided by (x-3), find the value of m & n

Q13- If a+b+c =5 an ab+bc+ca = 10, then prove that a3+b3+c3-3abc= -25

Q14- ABC is an equilateral triangle with Co-ordinate of B and C as (1,0) and (5,0) Respectively Find the Co-ordinate of A.

Q15- If X2+1=14, Find the value of x3+1

 X2 X3

Q16- Prove that: (2a/2b) a+b x (2b/2c)b+c x (2c/2a)c+a=1

Q17- If 5x-3 x 32x-8 =225, then find the value X.

Q18- Is (8/15)3-(1/3)3-(1/5)3=(8/75)? How will you justify your answer actually calculating cubes?

Q19- Represent 8/5 and -8/5 on the number line?

Q20- Find the decimal representation of -16/45

Q21- Express each of the following decimal in the form of p/q:

1. 0.35 (2) 0.585

Q22-**(**Xa/Xb**)**1/ab **(**Xb/Xc**)**1/bc (Xc/Xa**)**1/ac = 1

Prove : LHS= RHS

Q23- If 9x+2 = 720+9x, find the value of (4x)1/x

Q24-Simplify: (81/16)-3/4 x [(25/9)-3/2 ÷ (5/2)-3]

Q25- Rationalize the denominator:

1. 3+$\sqrt{7}$

3-$√7$

1. 5+$\sqrt{3}$

7-4$√3$

Q26- Prove that:

 1 - 1 - 1 - 1 + 1 = 5 3-$√8$ $\sqrt{8}-√7$ $\sqrt{7}-\sqrt{6}$ $\sqrt{6}-\sqrt{5}$ $\sqrt{5}-2$

Q27- Evaluate by using identities

1. 105 X 106
2. 185 X 185 -115 X 115
3. 103 X 97
4. (0.99)2

Q28- Factorize each by splitting the middle term:

1. X2+3$\sqrt{3x}+6$
2. X2+$\sqrt{3x}-30$

Q29- Factorize:

1. (x+1)3 –(x-1)3
2. 8(x+y)3-27(x-y)3

Q30- Prove that:

 a3+b3+c3 – 3abc = ½ (a+b+c) {(a-b)2 + (b-c)2 +(c-a)2 }

Q31- If P(x) = x4 – 3x2 + 2x +5. Find the remainder when P(x) is divided by (x-1)

Q32- Find the value of K, if (x+3) is a factor of 3x2 + kx +6

Q33- Using factor Theorem, Factories p(x) = x3 – 6x +11x – 6

Q34-An angle is equal to one – third of its supplement. Find its measure?

Q35- In angle equal to five times its Complement, Determine its measure?

Q36- In given fig: Lines XY and MN intersect at O. If POY = 90º and a:b = 2:3, find C P

 M

 b a

 X o Y

 C N

Q37- If L ll M, then x= ?

L

 65 º X

 M 40 º

Q38- From given fig. Find the value of PRQ

 S

|  |
| --- |
| 135º |

 P p

|  |
| --- |
| 110º |

 T Q R

Q39- A cuboidal oil tin is 30cm by 40cm by 50m find the cost of the tin required for making 20 such tins if the cost of tin sheet is Rs. 20 per square meter?

Q40- Each edge of cube is increased by 50% find the percentage increase in the surface area of the cube.

Q41- How many 3 meter cubes can be cut from a cuboids measuring 18mX 12mX9m.

Q42- A cylindrical pillar is 50 cm in diameter and 3.5m in height find : T.S.A, C.S.A & volume?

Q43- The radius and height of a cone are in the ratio 4:3. The area of the base is 154cm2. Find C.S.A ?

Q44- The radius of the sphere is 14cm find. T.S.A & volume

Q45- The radius of the hemisphere is 77cm. find the C.S.A, T.S.A and Volume .

Q46- The largest sphere is carved out of a Cube Of side 7cm . find the volume of the sphere.

Q47- The water tax bills (in rupees) of 30 houses in a locality are given below. Construct a grouped frequency distribution table with class size of 10.

30,32,45,54,74,78,108,112,66,76,88,40,14,20,15,35,44,66,75,84,95,96,102,110,88,74,112,14,34,44

Q48- The population of Delhi state in different census years is as given below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Census year  | 1961 | 1971 | 1981 | 1991 | 2001 |
| Population in lakh | 30 | 55 | 70 | 110 | 150 |

 Q49- Construct a histogram:-

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Monthly fee | 30-60 | 60-90 | 90-120 | 120-150 | 150-180 | 180-210 |
| No of school | 5 | 12 | 14 | 18 | 10 | 9 |

Q50- Two coins are tossed simultaneous 1000 times with the following frequencies of different outcomes

Two heads: 210 times

One heads: 550 times

No heads: 240 times

Find the probability of occurrence of each of these events

Q51- Solve: $\sqrt{25}-x$2 = (x-1)

Q52- The present age of A,B,C are in the ratio 4:7:9. Eight years ago the sum of their ages was 56. Find their Present ages?

Q53- Simplify:

 0.324 x 0.081 x 4.624 **= ?**

 1.5625 x 0.0289 x 72.9 x 64

Q54- Find the HCF of ( 22x23x5x74) , ( 23 x 32 x 52 x 73) and ( 24x 53 x75)

Q55- Simplify: 1/3 + 3/4 (2/5-1/3) **=?**

 5/3 of ¾ -1/4 of 4/5

Q56- Simplify :

86/21-41/14+12/7 ÷ 35/7 =?

16/9 x 97/48 ÷ 97/27

Q57- Find square root of 0.0004096?

Q58- If 22x-1  = 1 , then x = ?

 8(x-3)

Q59-A pack of 52 cards and card is selected at random: find the probability to get:-

1. Red card
2. Face card
3. Card of spade
4. Jack of black color

Q60- A dice is thrown. find the probability to get:

1. Prime numbers
2. Add numbers
3. Numbers b/w 3 & 7
4. Number less than 5

 **S.ST**

Answer all the questions in about 30-40 words in a separate notebook.

1. Write a short note on Estate General?
2. Who were known as sans-culotees?
3. Write the chronology of abolition and re introduction of slavery in France.
4. Explain any three features of the constitution of France drafted in 1791.
5. Explain the process of slave trade in France. How was it abolished and when?
6. Which laws were made by the revolutionary government to improve the condition of the women?
7. Discuss how India occupies an important strategic position in south Asia.
8. Justify the name of Indian Ocean after India?
9. What do you know about India and her neighbours?
10. Highlight the basic constrains in raising productions from a farm.
11. Explain physical capital with examples.
12. Differentiate b/w Kharif & Rabi Season.
13. What do you mean by Green Revolution?
14. What is land? Suggest any three ways to sustain land?
15. Differentiate b/w Traditional & Modern Farming.
16. Differentiate b/w single cropping, double cropping and multiple cropping.
17. Why do small farmers borrow money in Palampur?
18. How do the chemical fertilizers cause pollution?
19. What are the three types of plate movements in India?
20. List some major Mountain Peaks of Himalayas?
21. Mention division of North Plains marked by rivers?
22. Differentiate b/w Bhabhar & Terai.
23. What is a Deccan Trap?
24. How do the physical divisions of India complement each other?
25. What is a geosyncline?
26. How would you explain the rise of Napoleon in your views?
27. Explain Reign of Terror.
28. Mention a few values associated with the Declaration of the Rights of Man and Citizens.
29. Why were the women disappointed by the constitution of 1791?
30. What is the difference b/w the duration of days and nights hardly felt at Kanya Kumari but not so in Kashmir?
31. India’s land routes have been important since ancient times Explain.
32. What is a sub continent?
33. Write the size & extent of India?
34. Differentiate b/w Western Ghats & Eastern Ghats?
35. Write a short note on Indian Desert?

**SUBJECT:- SCIENCE**

 **PHYSICS**

1. A bus decreases its speed from 80 km/h to 60 km/h in 5s. Find the acceleration of the bus.
2. A trolley while going down an inclined plane, has an acceleration of 2cm/s². What will be its velocity 3s after the start?
3. A racing car has a uniform acceleration of 4m/ s². What distance will it cover 10s after start?
4. Distinguish between displacement and distance covered by a body in given time.
5. Rakesh went from Delhi to Agra on his motorbike. The odometer of the bike reads 4200km at the start of the trip and 4460km at the end of his trip. If Rakesh took 4h 20min to complete his trip, find the average speed in km/h as well as m/s.
6. Name a device that measures distance travelled by automobiles. A body travels a distance of 15m from A to B and then moves a distance of 20 m at right angle to AB. Calculate the total distance travelled and the displacement.
7. (a) A train 100m long is moving with a constant velocity of 60km/h find the time it takes to cross the bridge 1km long.

(b) The slope of the line on a position-time graph reveals information about an object’s velocity. What conclusion can you draw regarding the motion of an object, if the position-time graph is a:-

1. horizontal line parallel to time axis.
2. Straight line at 45° to time axis.
3. Curve.
4. Draw velocity time graph for a body that has initial velocity ‘u’ and is moving with uniform acceleration ‘a’. Use it to derive all three equations of motion.
5. Define uniform circular motion. Is an accelerated motion? If yes, what is the direction of acceleration? Give an example of this type of motion.
6. A cricket player lowers his hands slightly while catching a ball. Explain it in the light of Newton’s second law of motion.
7. A ball is moving over a horizontal smooth surface with a constant velocity. What types of forces are acting on the ball?
8. Give reasons:-

(a)A karate player suddenly reduces the speed of his hand while hitting an ice slab.

(b)Glass ware are covered with paper and straw while transportation.

1. What are action and reaction forces? Give two examples from our daily life which demonstrate them.
2. Distinguish between balanced and unbalanced force. Give one example of each.
3. State reason for the following:-
4. Mudguards are provided in bikes and cars.
5. All cars are provided with seat belts.
6. Derive Newton’s first law of motion from the second law.
7. State Newton’s first law of motion. If first law holds good, why does a rolling football comes to rest on its own?
8. A boy of mass 50kg running at 5m per sec jumps on to a

20kg trolley travelling in the same direction at 1.5m/s. Find their common velocity

1. Name and define the three types of inertia. Illustrate each of them with suitable example.
2. State and prove the law of conservation of momentum.

**BIOLOGY (Question Bank)**

1. Distinguish between prokaryotic and eukaryotic cells.
2. Write down the difference between nucleus and nucleoid.
3. Give a brief account of discovery of cell.
4. Enumerate functions of plasma membrane.
5. What would happen when eukaryotic cells are placed in hypotonic, hypertonic and isotonic solutions?
6. What will happen in a cell if the nucleus is removed? Give reasons in support of your answer.
7. Write down the main functions of
8. Endoplasmic reticulum
9. Lysosomes
10. “Lysosomes are known as suicide bags”. Why?
11. Where do ribosomes get synthesized?
12. What are the genes? Where are they located in the cell?
13. Which organelle is the “power plant” of the eukaryotic cell? Write in brief its functions.
14. What are centrioles? Write about their functions.
15. Give the main difference of plant cell and animal cell?
16. What would happen if the plasma membrane ruptures or break down?
17. Draw a well labeled diagram of plant cell and animal cell.
18. Why the cell is called the structural and functional unit of life? Explain.
19. Describe briefly the term “Division of Labour”.
20. Give an illustrated account of nucleus with the help of a diagram.
21. Draw the internal sectional view of chloroplast.
22. Define the following terms :-
23. Cytosol
24. Chloroplast
25. Osmosis
26. Protoplasm
27. Nucleoplasm

**CHEMISTRY**

1. State two characteristics of matter demonstrated by :-
2. Diffusion
3. Brownian motion
4. Explain the characteristics of particle with example for each.
5. State the characteristics properties of three states of matter.
6. What is meant by diffusion? Give one example of diffusion in gases. Name two gases of air which dissolve in water by diffusion.
7. What is Brownian motion? Draw a diagram to show the movement of particle during Brownian motion.
8. What do you understand by the term “latent heat”. What are the two types of latent heat?
9. Define “melting point” of substance? What is the melting point of ice?
10. Define “boiling point” of substance? What is the boiling point of water?
11. a. What are the two ways in which physical states of matter can be changed?

b. Draw the “states of matter triangle” to show the interconversion of states of matter.

1. What is evaporation? State the various factors which affect evaporation.
2. Comment upon the following properties:-
3. Rigidity
4. Compressibility
5. Fluidity
6. Kinetic energy
7. Convert the following to celsius scales:-
8. 300K ii. 573K iii. 293K iv. 470K
9. Convert the following to Kelvin scales:-

i. 25 °C ii. 373 °C iii. 100 °C iv. 27 °C

1. Draw the diagram to show the arrangement of particles in solids, liquids and gases.
2. Why solids, liquids and Gases have different properties? Explain.
3. Define the following terms:-
4. Melting
5. Vaporisation
6. Condensation
7. Freezing
8. What is sublimation? Name two substance which undergo sublimation.
9. Give an experiment to show the presence of water vapour in air.
10. Give reasons:-
11. A gas fills the vessel completely in which it is kept.
12. A gas exerts pressure on the walls of the container.
13. A wooden table should be called a solid.
14. Give reasons for the following:-
15. Why does a desert cooler, cool better on a hot dry day.
16. How does water in an earthen pot (matka) become cool during summer.
17. Why do our palms feel cold when we put some acetone or petrol or perfume on it.
18. Why are we able to sip hot tea or milk faster from a saucer than a cup.
19. Why should we wear cotton clothes during summer.