

Vaish Model Sr. Sec. School, Bhiwani

Summer Vacation Home Assignment

Session 2019-20

Class : X

Parents are requested to take care of their ward/s that they learn and revise the syllabus meant for Periodic Tests, July-2019 which has been given to the student in the school diary.

English:

1. It has been rightly said 'United we stand, divided we fall'. A nation which is not united falls like a house of cards. Make a project of 7-8 pages, emphasizing on 'The Significance of National Integration', using your own ideas and inputs. Your project should include obstacles and factors affecting national integration. Use pictures also to make it attractive.
2. Do Reading Tasks (Comprehension passages) in BBC Module-1 Pg. 56 to 61.
3. Do Writing Tasks (Letter to Editor) in BBC Module-3 Pg. 168 to 175.
4. Solve assignments (Editing, Omission & Sentence Reordering) in BBC Module-6 Pg. 264 to 281.
5. Solve poetic extracts in BBC Module-7 Pg.- 373 to 385.
6. Learn and revise the following : -
 - First Flight : - 1) A Letter to God,
 - 2) Nelson Mandela : Long walk to Freedom
 - 3) Two Stories about Flying
 - i) His First Flight
 - ii) The Black Aeroplane
 - 4) From the Diary of Anne Frank
- Footprints without Feet : - 1) A Triumph of Surgery
- 2) The Thief's Story
- 3) The Midnight visitor

Hindi :

➤ क्षितिज काव्य खंड :

पाठ-(1) पद-सूरदास

पाठ-(2) राम-लक्ष्मण-परशुराम संवाद

गद्य खण्ड : पाठ-(10) : नेताजी का चश्मा

पाठ-(11) : बालगोबिन भगत

कृतिका - पाठ-(1) : माता का अँचल

उपर्युक्त पाठ याद कीजिए।

व्याकरण : - रचना के आधार पर वाक्य भेद, पद-परिचय पढ़िए व समझिए।

पाँच अनौपचारिक पत्र लिखिए।

पाँच समस्यात्मक निबंध लिखिए।

परियोजना कार्य : 'पद-परिचय' विषय पर एक परियोजना तैयार कीजिए।

Mathematics

General Guidelines for students: -

- 1) Prepare a colourful chart on flash card on any mathematical topic of your choice.
- 2) Revise Chapter : 1, 2, 3, 8, 9 from N.C.E.R.T Book.
- 3) Do the homework in the separate notebook.
- 4) Prepare a Project Report on the topic as mentioned against your Roll Number.

Topic	Roll No.
(a) Use of Trigonometry in daily life.	1, 6, 11, 16, 21, 26, 31, 36, 41, 46
(b) Investigation of Various aspects of the number π (pie)	2, 7, 12, 17, 22, 27, 32, 37, 42, 47
(c) Analysis of class test result and Interpretation.	3, 8, 13, 18, 23, 28, 33, 38, 43, 48
(d) Application of Co-ordinate geometry in real life.	4, 9, 14, 19, 24, 29, 34, 39, 44, 49
(e) To find the Volume and surface area of different types of 3-D combinational solids.	5, 10, 15, 20, 25, 30, 35, 40, 45, 50

The above mentioned project report must containing the following pages

- (i) Front Page
- (ii) Introduction Page
- (iii) Certificate
- (iv) Verification
- (v) Acknowledgement
- (vi) Objective
- (vii) Material Required
- (viii) Procedure
- (ix) Observation and Result
- (x) Bibliography

Worksheet

1. Show that the square of an odd positive integer is of the form $8m + 1$, for some whole number.
2. Show that the square of any positive integer cannot be of the form $5m + 2$ or $5m + 3$ for some integer m .
3. Prove that $\frac{1}{2+\sqrt{3}}$ is an irrational number.
4. Without using long division, show that the rational number $\frac{21}{1120}$ has a terminating decimal expansion. Also, find its decimal expansion.
5. Find the Zeroes of $2s^2 - (1 + 2\sqrt{2})s + \sqrt{2}$ by factorization method and verify the relationship between the Zeroes and coefficients of the polynomials.
6. If one zero of the polynomial $3x^2 - 8x - (2k + 1)$ is seven times the other, find both zeroes of the polynomial and the value of k .
7. If α, β and γ are zeroes of the polynomial $6x^3 + 3x^2 - 5x + 1$, then find the value of $\alpha^{-1} + \beta^{-1} + \gamma^{-1}$
8. Find a quadratic polynomial with zeroes $3+\sqrt{2}$ and $3-\sqrt{2}$.
9. If $(x + a)$ is a factor of two polynomials $x^2+px + q$ and $x^2+mx + n$ then prove that a
$$= \frac{n-q}{m-p}$$

10. If One zero of the quadratic polynomial $p(x) = x^2 + 4kx - 25$ is negative of the other, find the value of k .
11. What must be subtracted from $8x^4 + 14x^3 - 2x^2 + 7x - 8$ so that the resulting polynomial is exactly divisible by $4x^2 + 3x - 2$.
12. Find the values of a and b so that $x^4 + x^3 + 8x^2 + ax + b$ is exactly divisible by $x^2 + 1$.
13. If one zero of the polynomial $ax^2 + bx + c$ is double of the other, then show that $2b^2 = 9ac$
14. Draw the graphs of the following equations on the same graph paper.

$$2x + 3y = 12; \quad x - y = 1$$

Find the co-ordinate of the vertices of the triangle formed by these two straight lines and the y-axis. Also determine the area of the triangle.

15. Determine the values of m and n so that the following system of linear equations have infinite number of solutions.

$$(2m - 1)x + 3y - 5 = 0$$

$$3x + (n - 1)y - 2 = 0$$

16. Two places 'A' and 'B' are 120km apart from each other on a highway. A car starts from 'A' and another from 'B' at the same time. If they move in the same direction, they meet in 6 hours and if they move in opposite direction, they meet in 1 hour and 12 minutes. Find the speed of each car.
17. A boat goes 24 km upstream and 28km downstream in 6 hours. It goes 30 km upstream and 21km downstream in 6 hours 30 minutes. Find the speed of the boat in still water.
18. A takes 6 days less than B to do a work. If both A and B working together can do it in 4 days, how many days will B take to finish it?
19. A bird flying in the same direction as that of the wind covers a distance of 45km in 2 hours 30 minutes. But it takes 4 hours 30 minutes to cover the same when it flies against the direction of the wind. Ignoring conditions other than the wind conditions. Find
1. The speed of the bird in still air.
 2. The speed of the wind.

20. If $4 \sin \theta = 3$, find the value of x , if $\sqrt{\frac{\operatorname{cosec}^2 \theta - \cot^2 \theta}{\sec^2 \theta - 1}} + 2 \cot \theta = \frac{\sqrt{7}}{x} + \cos \theta$

21. If $\tan^2 \alpha = 1 + 2 \tan^2 \beta$, Prove that $2 \sin^2 \alpha = 1 + \sin^2 \beta$

22. Without using trigonometric tables, evaluate the following :

$$\frac{\cos^2 20^\circ + \cos^2 70^\circ}{\sec^2 50^\circ - \cot^2 40^\circ} \times 2 \operatorname{Cosec}^2 58^\circ - 2 \cot 58^\circ \tan 32^\circ - 4 \tan 13^\circ \tan 37^\circ \tan 45^\circ \tan 53^\circ \tan 77^\circ$$

23. Prove that $\frac{1}{\operatorname{cosec} A - \cot A} - \frac{1}{\sin A} = \frac{1}{\sin A} - \frac{1}{\operatorname{cosec} A + \cot A}$

24. Prove that : $\frac{\cos^3 \theta + \sin^3 \theta}{\cos \theta + \sin \theta} + \frac{\cos^3 \theta - \sin^3 \theta}{\cos \theta - \sin \theta} = 2$

25. If $\sin \theta + \cos \theta = p$ and $\sec \theta + \operatorname{cosec} \theta = q$, show that $q(p^2 - 1) = 2p$

26. Find the value of k , if $\frac{\cos 35^\circ}{\sin 55^\circ} + \frac{2 \sin \theta}{\cos(90^\circ - \theta)} = \frac{k}{2}$

27. Without using trigonometric tables, Prove that

$$\sin^2 5^\circ + \sin^2 10^\circ + \sin^2 15^\circ + \dots + \sin^2 85^\circ + \sin^2 90^\circ = 9 \frac{1}{2}$$

28. A tower is $100\sqrt{3}m$ high. Find the angle of elevation of its top from a point 100m away from its foot.
29. An aeroplane at an altitude of 1200m. Find that two ships are sailing towards it in the same direction. The angles of depression of the ships as observed how the aeroplane are 60° and 30° respectively. Find the distance between the two ships.
30. From the top of a building 60m high, the angles of depression of the top and the bottom of a tower are observed to be 30° and 60° . Find the height of the tower.
31. The angle of elevation of a jet plane from a point A on the ground is 60° . After a flight of 30 seconds, the angle of elevation changes to 30° . If the jet plane is flying at a constant height of $3600\sqrt{3}m$, find the speed of the jet plane.
32. An aeroplane when flying at a height of 4000m from the ground passes vertically above another aeroplane at an instant when the angles of the elevation of the two planes from the same point in the ground are 60° and 45° respectively. Find the vertical distance between the aeroplanes at that instant.
33. The angle of a cloud from a point 60 m above a lake is 30° and the angle of depression of the reflection of cloud in the lake is 60° . Find the height of the cloud.
34. The tops of two towers of height x and y , standing on level ground, subtend angles of 30° and 60° respectively at the centre of the line joining their feet, then find $x : y$.
35. From the top of a light house, the angle of a depression of a ship sailing towards it was found to be 30° , after 10 seconds, the angle of depression changes to 60° . Assuming that the ship is sailing at uniform speed, find how much time it will take to reach the light house.
36. Solve for x : $\frac{1}{2a+b+2x} = \frac{1}{2a} + \frac{1}{b} + \frac{1}{2x}$
37. If the roots of the equations $ax^2 + 2bx + c = 0$ and $bx^2 - 2\sqrt{ac}x + b = 0$ are simultaneously real, then prove that $b^2 = ac$.
38. If -5 is a root of the quadratic equation $2x^2 + px - 15 = 0$, whereas the quadratic equation $p(x^2 + x) = -k$ has equal roots, find the value of p and k .
39. Find that nonzero value of k , for which the quadratic equations $kx^2 + 1 - 2(k - 1)x + x^2 = 0$ has equal roots. Hence, find the roots of the equation.
40. An aeroplane left 30 minutes later than its scheduled time and in order to reach its destination 1500km away in time, it had to increase its speed by 100 km/h from its usual speed. Determine its usual speed.
41. Out of a number of Saras birds, one fourth of the member are moving about in lotus plant, $\frac{1}{9}$ th coupled with $\frac{1}{4}$ th as well as 7 times the square root of the member move on a hill, 56 birds remain in vakula trees, what is the total member of birds.
42. If two pipes function simultaneously, a reservoir will be filled in twelve hours. First pipe fills the reservoir 10 hours faster than the second pipe. How many hours will the second pipe take to fill the reservoir ?

Science:

Note: Do the Holiday work in your class note-book.

Biology : -

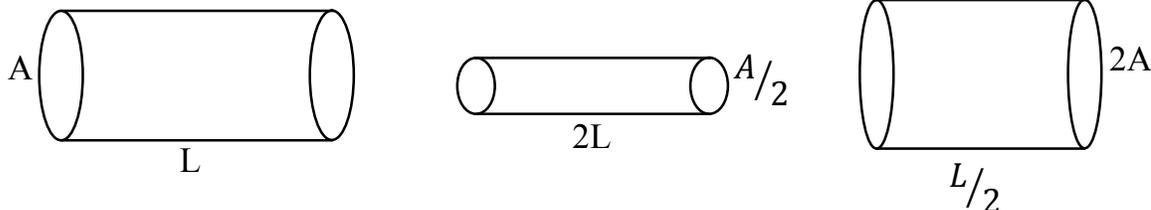
- Draw the diagrams (Well labelled) of the following : -

a) Cross reaction of a leaf	b) Open and closed stomata
c) Sectional view of the human heart	d) Excretory system
e) Structure of nephron	f) Digestive system
g) Respiratory system	

2. Write down the conclusion of following activities from chapter 6 life process: -
Activity 6.1, Activity 6.2, Activity 6.3, Activity 6.4, Activity 6.5, Activity 6.6

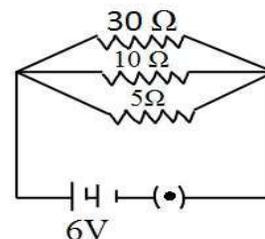
Physics : -

1. The figure below shows three cylindrical copper conductors along with their face areas and lengths. Discuss in which geometrical shape the resistance will be highest.

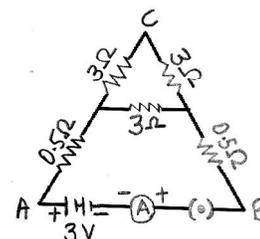


2. Two wires A and B are of equal length and have equal resistance. If resistivity of A is more than that of B which wire is thicker and why?
3. For the electric circuit given below calculate: -

- (i) Current in each resistor.
(ii) Total current drawn from the battery.
(iii) Equivalent resistance of the circuit.

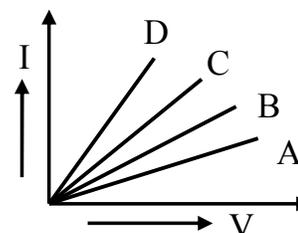


4. Five resistors are connected in a circuit as shown. Find the ammeter reading when circuit is closed.



5. Study the I-V graph for four conductors A, B, C and D having resistance R_A , R_B , R_C , R_D respectively, answer the following questions:

- (i) Which one of these is best conductor?
(ii) If all the conductors are of same length and same material, which is thickest?
(iii) If all the conductors are of same thickness and of same material, which is the longest?
(iv) If dimensions of all the conductors are identical, but their materials are different which one would you use as (a) resistance wire (b) connecting wire?



6. A $9\ \Omega$ resistance is cut into three equal parts and connected in parallel. Find equivalent resistance of combination.

Chemistry : -

1. Write the chemical formula for the following : -

Aluminium Sulphate,

Ferric oxide

Calcium Chloride

Barium Sulphate

Slaked lime

Quick lime

Glucose	Ferrous Sulphate
Lead nitrate	Calcium carbonate
Ammonium Chloride	Manganese dioxide
Barium chloride	Potassium iodide
Silver Bromide	Silver Chloride
Copper (II) Chloride	Silver Nitrate
Ammonium nitrate	Alumina
Sodium nitrate	Copper sulphate
Lead Chloride	

2. Write the balanced Chemical equation from the following :-

- Calcium oxide + water \longrightarrow Calcium hydroxide
- Lead nitrate $\xrightarrow{\Delta}$ Lead oxide + Nitrogen dioxide + oxygen
- Lead nitrate + Potassium Iodide \longrightarrow Lead Iodide + Potassium nitrate
- Ferrous Sulphate $\xrightarrow{\Delta}$ Ferric oxide + Sulphur dioxide
- Nitrogen pentaoxide + water \longrightarrow Nitric acid
- Zinc hydroxide + Sodium hydroxide \longrightarrow Sodium Zincate + Water
- Barium Carbonate + Nitric acid \longrightarrow Barium nitrate + Carbondioxide + water
- Sodium hydroxide + Ferrous Sulphate \longrightarrow Sodium sulphate + Ferrous hydroxide
- Sodium bicarbonate \longrightarrow Sodium carbonate + carbon dioxide + water
- Calcium hydroxide + carbondioxide \longrightarrow Calcium carbonate + water

Note: - Complete your class Note book and practical file in all respect.

S. St.

- Written Work: - Complete your note-books of S.St.
- Project Work: - Prepare a project report on “Consumer’s Awareness” based on the 5th chapter of Economics “Consumer’s Right”.
परियोजना कार्य : – अर्थशास्त्र के पाँचवें अध्याय “उपभोक्ता अधिकार” पर आधारित “उपभोक्ता जागरुकता” पर एक परियोजना रिपोर्ट तैयार कीजिए।

Information Technology

- Revise and Complete your notebook. (Syllabus covered upto Summer Vacation)
- Find out all the abbreviations from Unit-2 and Unit-3 and write in the fair notebook.
- Write the procedure for the following activities in the fair notebook: -
 - E-Reservation steps for getting railways or Air tickets using any Govt. E-Reservation website like IRCTC.
 - Latest technologies used to transfer data.
- Prepare a project file using word processor software on any application software.
 - MS-Word/ Writer
 - MS-Excel / Spreadsheet/ OOo Calc
 - MS-Powerpoint / Impress