

BANASTHALI PUBLIC SCHOOL
SUMMER HOLIDAY HOMEWORK, SESSION 2024-25

Circular No. BPS/24-25/13(XII Sci.)

Date: 27.05.2024

CLASS – XII (SCIENCE)

The summer days are back again!!
And its vacation time again!
There's sun and shade
And water to wade
Time for some fun and frolic
With ice creams to lick
Activities to indulge in
Places to explore
Yes!! It's vacation time again!!!



Dear Parents

We believe children are natural learners and have an innate curiosity. They take pleasure in discovery. Hence, we have made an endeavour to induce and enhance thinking skills in them by making them be actively doing things for themselves. Through a lot of physical activity, movement, exploring and first-hand learning by doing things on their own, we facilitate that their learning goes into their long-term memory. We are sure you are there with us in this endeavour of ours.

SUMMER VACATION of the Session 2024-25, for the students of **CLASS XII** will commence from **29th May 2024 (Wednesday) to 30th June 2024 (Sunday)**. The classes will resume from **01st July 2024 (Monday)** onwards. However, the **school office** will remain open from **8:30 a.m. to 12:30 p.m.** on all working days during summer vacation.

Dear Student

Summer vacation is that time of the year when we have the time of our life. We relax, spend time with our family and friends and visit places galore. It's also the time to explore our talents, learn new skills and engage in different activities.

Some suggestions to make the summer break time more special and exciting for you.

1. Learn a new sport or skill and engage in physical activities.
2. Learn dignity of labour by doing things yourself.
3. Plant a sapling and take care of it.
4. Spend quality time with your family members.

GENERAL INSTRUCTIONS:

1. Complete the C.W./H.W. of all the subjects, in the respective subject notebook in neat and clean Handwriting, if still pending.
2. Holiday Homework will be a part of Internal Assessment. It must be done properly according to the instructions given by the teachers. Beautiful and systematic work will carry extra marks.
3. After summer vacation, the Summer Holiday Homework Notebook/Scrapbook/Project File/Lab Manuals (which-ever applicable) must be submitted in the School for Internal Assessment.
4. Parents kindly make sure your ward completes all the work assigned. Work to be done on regular basis.
5. Do project work of all subjects in respective Notebook provided in the Book set.

Wishing every child, constructive holidays!

Subject Name	Details
English	<p>I. AIL (Art Integrated Projects): Illuminate Your Imagination Get ready to dive into the heart of literature and society through captivating projects that blend artistry with academics. Project Guideline: The Project-Portfolio may include the following:</p> <ul style="list-style-type: none"> ● Cover page, with title of project, school details/details of students. ● Statement of purpose/objectives/goals ● Certificate of completion under the guidance of the teacher. ● Students Action Plan for the completion of assigned tasks. ● Materials such as scripts for the theatre/role play, questionnaires for interview, written assignments, essays, survey-reports and other material evidence of learning progress and academic accomplishment. ● The 800-1000 words Essay/Script/Report. ● Student/group reflections. ● If possible, Photographs / Drawings that capture the positive learning experiences of the student(s) ● List of resources <p>TOPIC 1 - The Last Lesson (Roll No.: 1-8)</p> <ul style="list-style-type: none"> • Elaborate the theme of Linguistic Chauvinism and Procrastination and importance of Time Management. • Collect data about countries where people have these tendencies. • How do they give importance to their mother tongue? <p>TOPIC 2 - The Lost Spring (Roll No.: 9-16)</p> <ul style="list-style-type: none"> • Collect data about various slums in our country and living conditions there. Also elaborate whether children have access to education there. • How are children engaged in various kinds of work (Below 14)? • Collect all information about the biggest slum. <p>TOPIC 3 - My Mother at Sixty-six (Roll No.: 17-23)</p> <ul style="list-style-type: none"> • Explain the importance of parents in the family. • In the context of the poem how do you love and care your mother? • Collect data about condition of old age homes in our country, living condition there, number of old age homes in Delhi and Lakshadweep. <p>TOPIC 4 - The Third Level (Roll No.: 24-30)</p> <ul style="list-style-type: none"> • Why 'hurry and worry' are trademarks of modern men? • How far today's life is insecure? Why do modern men want to escape? • Interview two counsellors to know the problems (stress, fear, anxiety etc.) faced by the students on the virtual platform. (Place a copy of the questionnaire in the project file) <p>II. Complete BBC Assignments: Reading: Practice Assignment-1, 2 Writing: Practice Assignment-11, 12, 14, 15 Literature: Pg. No.: 246 – 249, Pg. No.: 299 – 302</p>
Physics	<p>Complete the Assignment given in Annexure I in class work register.</p>
Math	<p>Q1. Do Chapter-test assignment in the assignment notebook of the following Chapters: Ch. 3 Matrices Ch. 4 Determinants</p> <p>Q2. Do all Case-studies of Ch. 1 Relation & Function Do only unsolved case studies of Ch. 2 Inverse Trigonometry Do all Case-studies of Ch. 3 Matrices & Ch. 4 Determinants</p> <p style="text-align: center;"><u>Lab Manual Activities.</u></p> <p>Complete the Lab manual activities.</p> <ol style="list-style-type: none"> 1. Relation and function Relation R in the set L of all lines in a plane. 2. To find limit of a function F(x) at x = c and to check continuity of a function at that point.

Computer Science	<p>Theory Work: Learn UT-1 syllabus. Practice the questions of Ch. 2, 7, 8 covered in CBSE-2023 examination.</p> <p>Project Work: Complete your Project File soft copy in standard format as discussed in the class.</p> <p>Practical Work:</p> <ol style="list-style-type: none"> 1. Complete Practicals of SQL Statements (Practical 9 to 12) 2. Complete Practicals of Python-MySQL Interface (Practical 13 to 16) 3. Complete Practicals of Functions (Practical 17 to 20) <p>Note: Practical questions are to be written in Practical File as well along with the output of each program. Soft Copy of Practical file & Project File to be prepared and then mail it on: pythoncsnip@gmail.com with proper nomenclature. File Naming: BPS_CLASS_SUBJECT_NAME_PRACTICAL FILE_2024-25 Example: BPS_12 C_CS_RISHABH THAKUR_PRACTICAL FILE_2024-25</p>																																																				
Physical Education	<p>Learn & Revise the whole syllabus covered in the class so far. Write Practicals 1 to 3 in the lab manual and draw neat diagrams wherever needed.</p> <p style="text-align: center;"><u>Practical Work</u></p> <p>Practical 1: Fitness tests administration for all items. Practical 2: Procedure for Asana, Benefits & Contraindication for any two Asana for each lifestyle disease. Practical 3: Anyone one IOA recognised Sport/Game of choice. Draw Labelled diagram of Field & Equipment. Also mention its Rules, Terminologies & Skills. (Basketball)</p>																																																				
Biology	<p>Complete the Assignment given in <u>Annexure II</u> in class work register.</p>																																																				
Chemistry	<p>Do all the NCERT solved and unsolved questions of Organic Chemistry- Ch. 1, 2 and 3 in Assignment Register.</p> <p style="text-align: center;"><u>Practical Work</u></p> <p>Complete Practical questions in Practical File, as discussed in the Class.</p> <p style="text-align: center;"><u>Project Work</u></p> <p>Make an investigatory project on the topic assigned in the class.</p>																																																				
Hindi	<ol style="list-style-type: none"> 1. प्रथम इकाई परीक्षा का संपूर्ण पाठ्यक्रम याद करें। 2. दिए गए विषयों में से किसी एक पर निर्देशानुसार लगभग 20 - 25 पृष्ठों में सचित्र परियोजना तैयार करें : <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">S.No.</th> <th style="width: 15%;">Class</th> <th style="width: 60%;">Topic</th> <th style="width: 15%;">Roll No.</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>XII A</td> <td>लोकनायक तुलसीदास जी।</td> <td>1, 3, 5</td> </tr> <tr> <td>2</td> <td>XII A</td> <td>प्रमुख छायावादी कवि श्री सूर्यकांत त्रिपाठी निराला।</td> <td>2, 4</td> </tr> <tr> <td>3</td> <td>XII C</td> <td>हिन्दी साहित्य और हालावाद।</td> <td>1, 3, 5</td> </tr> <tr> <td>4</td> <td>XII C</td> <td>हिन्दी कविता का संवेदनशील नागर चेहरा श्री रघुवीर सहाय।</td> <td>2, 4, 6</td> </tr> <tr> <td>5</td> <td>XII C</td> <td>प्रमुख छायावादी कवि श्री सूर्यकांत त्रिपाठी निराला।</td> <td>7, 9, 10</td> </tr> <tr> <td>6</td> <td>XII C</td> <td>बाबा साहेब भीमराव आंबेडकर।</td> <td>8</td> </tr> <tr> <td>7</td> <td>XII D</td> <td>बाबा साहेब भीमराव आंबेडकर।</td> <td>1, 3, 5</td> </tr> <tr> <td>8</td> <td>XII D</td> <td>बहुमुखी प्रतिभा के धनी श्री धर्मवीर भारती।</td> <td>2, 4, 6</td> </tr> <tr> <td>9</td> <td>XII D</td> <td>आंचलिक उपन्यासकार श्री फणीश्वरनाथ रेणु।</td> <td>7, 9, 11, 13</td> </tr> <tr> <td>10</td> <td>XII D</td> <td>छायावाद की प्रमुख स्तंभ एवं बहुमुखी प्रतिभा की धनी श्रीमती - महादेवी वर्मा।</td> <td>8, 10, 12</td> </tr> <tr> <td>11</td> <td>XII D</td> <td>हिन्दी साहित्य में प्रयोगवाद एवं प्रयोगवादी कवि श्री शमशेर बहादुर सिंह।</td> <td>14, 16, 18</td> </tr> <tr> <td>12</td> <td>XII D</td> <td>लोकनायक तुलसीदास जी।</td> <td>15, 17</td> </tr> </tbody> </table>	S.No.	Class	Topic	Roll No.	1	XII A	लोकनायक तुलसीदास जी।	1, 3, 5	2	XII A	प्रमुख छायावादी कवि श्री सूर्यकांत त्रिपाठी निराला।	2, 4	3	XII C	हिन्दी साहित्य और हालावाद।	1, 3, 5	4	XII C	हिन्दी कविता का संवेदनशील नागर चेहरा श्री रघुवीर सहाय।	2, 4, 6	5	XII C	प्रमुख छायावादी कवि श्री सूर्यकांत त्रिपाठी निराला।	7, 9, 10	6	XII C	बाबा साहेब भीमराव आंबेडकर।	8	7	XII D	बाबा साहेब भीमराव आंबेडकर।	1, 3, 5	8	XII D	बहुमुखी प्रतिभा के धनी श्री धर्मवीर भारती।	2, 4, 6	9	XII D	आंचलिक उपन्यासकार श्री फणीश्वरनाथ रेणु।	7, 9, 11, 13	10	XII D	छायावाद की प्रमुख स्तंभ एवं बहुमुखी प्रतिभा की धनी श्रीमती - महादेवी वर्मा।	8, 10, 12	11	XII D	हिन्दी साहित्य में प्रयोगवाद एवं प्रयोगवादी कवि श्री शमशेर बहादुर सिंह।	14, 16, 18	12	XII D	लोकनायक तुलसीदास जी।	15, 17
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Gen. Comp.	Create a project which covers the following topics with explanation in brief and paste or draw related pictures in interleaf project file: Networking & its Applications, Network Devices, Types of Network & Topology, Protocols.
Gen. Studies	Make a project on any ONE of the following topics: (Project should be of 15-20 pages and related pictures should also be pasted in interleaf project file) (a) Agriculture in India (Roll No.: 1-8) (c) Poverty in India (Roll No.: 16-22) (b) Unemployment in India (Roll No.: 9-15) (d) Science & Technology (Roll No.: 23-30)

ASSIGNMENT – PHYSICS

ANNEXURE- I

- Q1.** Which is bigger, a coulomb or charge on an electron? How many electronic charges form one coulomb of charge?
- Q2.** Force of attraction between two point charges placed at a distance 'd' is 'F'. What distance apart should they be kept in the same medium so that the force between them is F/3?
- Q3.** An electric dipole of dipole moment 20×10^{-6} cm is placed inside a closed surface. Calculate the net electric flux passing through this surface.
- Q4.** Plot a graph showing the variation of coulomb force (F) versus $(1/r^2)$, where 'r' is the distance between two charges of each pair of charges ($1\mu\text{C}$, $2\mu\text{C}$) and ($2\mu\text{C}$, $-3\mu\text{C}$).
- Q5.** Using Gauss's Law, derive an expression for the electric field intensity at any point near a uniformly charged thin wire of charge/length = λ c/m.
- Q6.** An oil drop of 12 excess electrons is held stationary under a constant electric field of 2.55×10^4 N/C in Millikan's oil drop experiment. The density of the oil is 1.26 gm/cm^3 . Then estimate the radius of the oil drop.
- Q7.** Draw 3 equipotential surfaces corresponding to a field that uniformly increases in magnitude but remains constant along z-direction. How are these surfaces different from that of a constant electric field along z-direction?
- Q8.** The two plates of a parallel plate capacitor are 5 mm apart. A slab of a dielectric, of thickness 4mm is introduced between the plates with its faces parallel to them. The distance between the plates is adjusted so that the capacitance of the capacitor becomes equal to its original value. If the new distance between the plates equal 8 mm, what is the dielectric constant of the dielectric used?
- Q9.** Two charges $-q$ and $+q$ are located at points A (0,0,-a) and B (0,0,+a) respectively. How much work is done in moving a test charge from point P(7,0,0) to Q(-3,0,0)?
- Q10.** A wire of resistance 8R is bent in the form of a circle. What is the effective resistance between the ends of a diameter AB?
- Q11.** A cylindrical wire is stretched to increase its length by 10%. Calculate the percentage increase in resistance.
- Q12.** State the principle of working of a meter bridge.
In a meter bridge the null point is found at a distance of 60 cm from A. If a resistance of 5Ω is connected in series with 's', the null point occurs at 50 cm from A. Determine the value of R and S.
- Q13.** Two identical circular loops, P and Q, each of radius r and carrying currents are kept in the parallel planes having a common axis passing through O.
- Q14.** A charge q moving along the x-axis with a velocity 'v' is subjected to a uniform magnetic field B acting along the z-axis.
(a) Trace Trajectory
(b) Does the charge particle gain kinetic energy as it enters the magnetic field?

- Q15.** Plot a graph showing variation of resistivity of a conductor (copper) with temperature and for a typical semiconductor Si.
- Q16.** A galvanometer having a coil resistance of $100\ \Omega$ gives full scale deflection with a current of 1mA . Calculate the value of the resistance needed to convert it into an ammeter of range $0\text{-}1\text{A}$.

Competency Focused

- Q17.** A spherical Gaussian surface encloses a positive charge 'q'. Explain with a reason what happens to the net electric flux through the Gaussian surface if:
- (a) the charge is tripled
 - (b) the volume of the sphere is tripled
 - (c) the shape of the Gaussian surface is changed into a cuboid
 - (d) the charge is moved into another location inside the Gaussian surface
- Q18.** A parallel plate capacitor of capacitance 'C' is charged to a potential 'V' by a battery. 'Q' is the charge stored in the capacitor. The battery is then disconnected, and the distance between the plates of the capacitor is increased by a small amount. What changes will occur in each of the following quantities? Will they increase, decrease or remain the same? Give an explanation in each case.
- (a) Capacitance
 - (b) Charge
 - (c) Potential difference
 - (d) Electric field
 - (e) Energy stored in the capacitor
- Q19.** Annie wants to check if a bulb rated $3\ \text{V}$, $6\ \text{W}$ is working or not. But she only has a $12\ \text{V}$ DC power source. She also has a few resistors with her.
- (a) How can she use the resistors with the light bulb to ensure that the bulb operates at its correct rating when connected to the $12\ \text{V}$ supply? Give a reason for your answer.
 - (b) What should be the resistance of the resistor that she uses with the bulb?
- Q20.** Due to increasing current through loop 'A', magnetic field lines through loop 'B' also increase. This induces an emf in loop 'B' so that current through loop 'B' is in the direction opposite to that in loop 'A'. This is as per Lenz's law. Since the currents are in opposite direction, loop 'B' is repelled by loop 'A'.

Project Work

Make a project on given topic discussed in class.

Working Model

Bring an idea for a working model (in writing for the science exhibition)

Topics for Science Carnival:

- (a) Transport and communication
- (b) Health and Hygiene
- (c) Sustainable Management
- (d) New Techniques in Agriculture
- (e) Mathematical Modelling
- (f) Technique to Save Environment

SYLLABUS FOR UNIT TEST-I, SESSION: 2024-25

ENGLISH	Literature Book: Flamingo- Ch. 1: The Last Lesson Ch. 2: Lost Spring P-1: My Mother at Sixty-Six P-2: Keeping Quiet Book: Vistas- Ch. 1: The Third Level Ch. 2: The Tiger King Reading & Writing Skills: Reading Passage (Descriptive), Letter to Editor, Notice Writing
MATHEMATICS	Ch. 1: Relations and Functions Ch. 3: Matrices Ch. 4: Determinants Ch. 5: Continuity and Differentiability (upto Ex. 5.9 only)
PHYSICS	Ch. 1: Electric Charges and Field Ch. 2: Electrostatic Potential and Capacitance Ch. 3: Current Electricity
CHEMISTRY	Ch. 6: Haloalkanes and Haloarenes Ch. 7: Alcohols, Phenols and Ethers
BIOLOGY	Ch. 1: Sexual Reproduction in Flowering Plants Ch. 2: Human Reproduction Ch. 3: Reproductive Health
COMPUTER SCIENCE	Ch. 2: Functions Ch. 7: Relational Database and SQL Ch. 8: Interface Python with SQL
HINDI	आरोह भाग 2 (गद्य): पाठ 11 भक्तिन, पाठ 12 बाजार दर्शन (काव्य): पाठ 1 हरिवंश राय बच्चन, पाठ 2 आलोक धन्वा वितान: पाठ 1 सिल्वर वैडिंग अभिव्यक्ति और माध्यम: पाठ 3 एवं अपठित काव्यांश।
PHYSICAL EDUCATION	Ch. 1: Management of Sporting Events Ch. 2: Children and Women in Sports Ch. 5: Sports and Nutrition