

BHAVAN'S R.K.SARDA VIDYA MANDIR
HOME ASSIGNMENT FOR SUMMER VACATION
Session 2017-18
Class –XII (Science)

Sl.No	Subject	Home Assignment	Particulars
1.	English	<p>Read the lesson “Memories of Childhood” from your book Vistas and answer the following questions:</p> <ol style="list-style-type: none"> At the dining table, why did Zitkala-Sa begin to cry when others started eating? How did Zitkala-Sa’s first day in the land of apples begin? According to Zitkala-Sa, what does ‘eating to formula’ mean? Why did Zitkala-Sa not want her hair to be cut short? What are the similarities in the lives of Bama and Zitkala-Sa though they belong to different cultures? Which words of her brother made a deep impression on Bama? Story of Bama and Zitkala-Sa prove that to succeed in life one must be determined and hardworking. It involves grit, perseverance and enormous willpower. Write an article bringing out the truth of this fact. 	English notebook
2.	Hindi	<p>सिल्वर वैडिंग एवं जूझ दोनों पाठों का अध्ययन करें एवं निम्न प्रश्नों के उत्तर लिखें-</p> <ol style="list-style-type: none"> सिल्वर वैडिंग कहानी की मूल संवेदना को स्पष्ट कीजिए। या सिल्वर वैडिंग की मूल संवेदना क्या है? आप ऐसा क्यों सोचते हैं? सिल्वर वैडिंग कहानी के आधार पर पीढ़ियों के अंतराल के कारणों पर प्रकाश डालिए। क्या इस अंतराल को कुछ पाटा जा सकता है? कैसे? स्पष्ट करें। ‘संघर्ष से ही जीवन में सफलता मिलती है।’ जूझ शीर्षक पाठ के आधार पर स्पष्ट करें। यदि लेखक की जगह आप होते तो क्या करते? पढ़ाई जारी रखते या छोड़ देते। इसके लिए आप अध्यापक के व्यवहार को कितना उत्तरदायी मानते? 	हिंदी कॉपी
3.	Maths	<p>R.D. Sharma: Ex 5.1 Question 1 to 14. Ex. 5.2 question 1 to 20. Ex 5.3 question 1 to 45, Ex 5.4 question 1 to 9, Ex 5.5 question 1 to 7.</p>	Note-book
4.	Chemistry	<p>25 questions from chapter Solid State. *</p>	Chemistry Note book
5.	Economics	<p>The students will be asked to prepare a project on “<i>Goods and Service Tax</i>”, covering the following points:</p> <ul style="list-style-type: none"> - Basics of GST - Implementation of GST in India. - Probable outcomes of GST in 	

		a) Education sector b) Healthcare sector c) Retail sector -Benefits of GST to consumers.	
6.	Physics	25 questions from chapter Electrostatics. *	Physics Note book
7.	Biology	25 questions from chapter Reproduction in organisms and Sexual reproduction in flowering plants. *	Biology Note book

For further individual subject assignment refer *

Date of Submission of Assignments-02-06-2017.

**** Summer Assignment Class 12 Biology**

- Write short notes on (a).Embryogenesis (b) Syngamy
- Write the modes of asexual reproduction in the following organisms
Bryophyllum, Potato, Yeast, Rhizopus, Pencillium
- Distinguish between oviparous and viviparous animals.
- What are spores ? Name at least three types of spores.
- What are vegetative propagules ?
- Expalin why meiosis and gametogenesis are always interlinked?
- Define : (i) Juvenile Phase (ii) Reproductive phase (iii) Senescent Phase
- Differentiate between the following :
(a) Zoospore and Zygote
(b) Parthenocarpy and Parthenogenesis
- How does development of a male gametophyte or pollen take place?
- Trace the development of a megaspore mother cell in a flower into a mature ovule. Give a labelled diagram of the final stage.
- Define double fertilization. Explain the process of double fertilization in an angiospermic plant. Write its importance.
- Draw a labelled diagram of longitudinal section of a maize grain to show the structure of mature embryo.
- Write short notes on the following :
(a) Hydrophily
(b) Entomophily
(c) Anemophily
(d) Cross-Pollination
- Name the cell from which the endosperm of coconut develops.Give the characteristic features of endosperm, of coconut.
- The flowers of brinjal is referred to as chasmogamous while that of beans is cleistogamous. How are they different from each other.
- Define triple fusion. What is the product of this process? What does the product develop into?

17. Differentiate between monoecious and dioecious plants. Give one example of each.
18. What is nucellus?
19. Explain the role of tapetum in the pollen wall formation.
20. What is bagging technique? How is it useful in a plant breeding programme?
21. Differentiate between microsporogenesis and megasporogenesis. Which type of cell division occurs during these events? Name the structures formed at the end of these two events.
22. With a neat diagram explain the 7-celled, 8 nucleate nature of the female gametophyte.
23. With a neat, labelled diagram, describe the parts of a typical angiospermic ovule.
24. Differentiate between:
 - (a) Hypocotyl and epicotyl
 - (b) Coleoptile and Coleorrhiza
 - (c) Integument and testa
 - (d) Perisperm and pericarp
25. What is apomixis and what is its importance?

****Summer Assignment Class 12 Chemistry**

1. Why is glass of window panes of very old buildings found to be thicker at the bottom than at the top and why is it milky?
2. Classify the following substances into ionic, covalent, molecular, covalent and metallic crystals- Bronze, Dry ice, Diamond, MgO, SO₂, I₂, H₂O(ice), SiO₂(quartz), brass.
3. Calculate the number of atoms per unit cell present in simple, fcc and bcc unit cells.
4. What is the coordination number (C.N.) of an atom in-
 - (i) Primitive cubic unit cell
 - (ii) Body-centred cubic cell
 - (iii) Face centred cubic unit cell
5. With the help of a labelled diagram show that there are four octahedral voids per unit cell in a cubic close packed structure.
6. How do the electrical conductivity and resistivity of the following classes of materials vary with temperature? Semiconductors, metallic, conductors, superconductors
7. Ferromagnetic substances make permanent magnets. Give reason.
8. Why does the electrical conductivity of semiconductors increase with the rise in temperature?
9. A compound formed by elements A and B has a cubic structure in which A atoms are at the corners of the cube and B atoms are at the face centres. Derive the formula of the compound.
10. Explain the following terms with suitable examples :
 - (i) Schottky defect
 - (ii) Frenkel defect
 - (iii) Interstitials
 - (iv) F-centres
11. Atoms of element B form hcp lattice and those of the element A occupy $\frac{2}{3}$ rd of tetrahedral voids. What is the formula of the compound formed by these elements A and B?
12. How will you distinguish between the following pairs of terms

- (i) Hexagonal close packing and cubic close packing
 - (ii) Crystal Lattice and unit cell
 - (iii) Tetrahedral Voids and octahedral void.
13. Derive the following relationship for cubic crystals of an element :
- (i) For FCC $r = a/2\sqrt{2}$
 - (ii) For BCC , $r = \sqrt{3}a/4$
14. On the basis of magnetic properties , how can you classify the substances into different types ? Define each of them. Also give examples in each case.
15. What is semiconductor ? Describe the two main types of semiconductors and contrast conduction mechanism in them.
16. Write two difference between crystalline and amorphous solids?
17. On the basis of nature of bonding , how can the solids be classified into different types ?
18. Explain the following terms with geometrical figures :
- (a) Body centred unit cell
 - (b) Face centred unit cell
19. Define the following terms in relation to crystalline solids :
- (i) Unit cell
 - (ii) Coordination number
20. Derive an expression for the calculation of density of the cubic crystal of an element whose edge is 'a' pm and atomic mass is M.
21. How many atoms can be assigned to its unit cell if an element forms (i) body centred cubic cell (ii) a face centred cubic cell.
22. 'Crystalline solids are anisotropic in nature'. What does this statement mean ?
23. Why does table salt, NaCl , sometimes appear yellow in colour.
24. Classify each of the following as being either a p-type or n-type semiconductor :
- (i) Ge doped with In
 - (ii) B doped with Si
25. Why is glass considered a super cooled liquid ?

**** Summer Assignment-Physics Class-12**

1. An electron is separated from a proton by a distance of 0.53 \AA . Calculate the electric field at the location of the electron.
2. Two point charges of $5 \times 10^{-19} \text{ C}$ and $20 \times 10^{-19} \text{ C}$ are separated by a distance of 2m. At which point on the line joining them the electric field is zero?
3. Find the magnitude and direction of an electric field that will balance an alpha particle .The mass and charge of proton are $1.67 \times 10^{-27} \text{ kg}$ and $1.6 \times 10^{-19} \text{ C}$.
4. An electrostatics lines of force is a continuous curve that is it cannot have sudden breaks.Why is it so?

5. Consider three charges q_1, q_2, q_3 each equal to q at the vertices of an equilateral triangle of side l . What is the net force on a charge Q (with the same sign as q) placed at the centroid of the triangle?
6. Annesha has dry hair. She runs a plastic comb through her hair and finds that the comb attracts small bits of paper. But her friend Manisha has oily hair. The comb passed to Manisha, her hair could not attract small bits of paper. Annesha goes to her Physics teacher and gets an explanation of this phenomenon from her. She then goes to different junior classes and demonstrates this experiment to the students. The junior students feel very happy and promise her to join her science club set up for searching such interesting phenomena of nature. Answer the following questions based on the above information.
 - (a) What are the values displayed by Aneesha?
 - (b) A Comb run through ones dry hair attracts small bits of paper. But it does not attract when run through wet hair. Why?
7. What does $q_1 + q_2 = 0$ signify in electrostatics ?
8. If the distance between two equal point charges is doubled and their individual charges are also doubled, what would happen to the force between them?
9. Two point charges placed at a distance r in air exert a force F on each other. At what distance will these charges experience the same force F in a medium of dielectric constant K ?
10. Can two like charges attract each other ? If yes how?
11. How is the coulomb force between two charges affected by the presence of a third charge?
12. A small test charge is released at rest at a point in an electrostatic field configuration. Will it travel along the lines of force?
13. Why is it necessary that the field lines from a point charge placed in the vicinity of a conductor must be normal to the conductor at every point.
14. The electric lines of force tend to contract lengthwise and expand laterally. What do they indicate?
15. Two point charges $+4e$ and $+e$ are fixed a distance r apart. Where should a third point charge q be placed on the line joining the two charges so that it may be in equilibrium?
16. Obtain the dimensional formula of ϵ_0 .
17. A charge q is placed at the centre of the line joining two equal charges Q . Show that the system of three charges will be in equilibrium if $q = -Q/4$
18. Four equal point charges each $16 \mu\text{C}$ are placed on the four corners of a square of side 0.2 m . Calculate the force on any one of the charge.
19. Compare electrostatic and gravitational interaction.
20. What is electric lines of force? Mention the properties of electric lines of force.
21. Four point charges $q_A = 2 \mu\text{C}, q_B = -5 \mu\text{C}, q_C = 2 \mu\text{C}, q_D = -5 \mu\text{C}$ are located at the corners of a square ABCD of side 10 cm . What is the force on a charge of $1 \mu\text{C}$ placed at the centre of the square.
22. Define electrostatic induction. Briefly explain how an insulated metal sphere can be positively charged by induction.
23. Force between two point charges kept a distant d apart in air is F . If these charges are kept at the same distance in water, how does the electric force between them change.

24. Vehicles carrying inflammable materials usually have metallic ropes touching the ground during motion. Why?

25. A pendulum of mass 80 mg carrying a charge of 2×10^{-8} C is at rest in a horizontal uniform electric field of 2×10^4 V/m. Find the tension in the thread of the pendulum and the angle it makes with vertical.