

**JKG INTERNATIONAL SCHOOL VIJAY NAGAR GHAZIABAD**  
**HOLIDAY HOME WORK (2018-19)**  
**CLASS XII (PCB)**

**English Core:**

**FLAMINGO:**

1. What was tempting for Franz to keep away from school that day?
2. Who did M.Hamel blame for the neglect of learning on the part of boys like Franz?
3. What were Franz's regrets after M.Hamel announcement of his last lesson?
4. What changes did the order from Berlin cause in the school?
5. Explain the significance of the title LOST SPRING?
6. Why could the bangle makers not organize themselves into a cooperative?

**VISTAAS:**

1. How did the Tiger king celebrate his victory over the killing of the hundredth tiger?
2. What traits of the Maharaja and the british officer are exposed and satirized through the episode of refusal of permission for tiger hunt by the british officer?
3. Why was the Maharaja sunk in gloom? Was he able to overpower it?
4. How does the hundredth tiger take its final revenge upon the tiger king?
5. How did the Maharaja succeed in raising his tiger tally to ninety –nine?
6. Why was Dr.Sadao being kept in Japan and not sent abroad with the troops?
7. What dilemma did Sadao face about the young white man ?
8. How did the servants react when their master told them about the wounded white man?
9. What two things happened on the seventh day after that?
10. Why do you think did the old General not want Dr Sadao to be asserted?
11. What plan did the old General for getting rid of the man?

**Biology:**

- Prepare a project file on allotted topics
- Learn Chapters 1,2,3,4 & 5 for SA-1
- Answer the following questions in Biology Assignment notebook.
  1. How's the continuity of Species maintained generation after generation?
  2. Write the function of coleoptiles.
  3. Why are angiosperm anthers called dithecous? Describe the structure of its microsporangium.
  4. Why are some seeds referred to as apomictic ? mention one advantage & disadvantage to a farmer who uses them.
  5. How does cleistogamy ensure autogamy? State one advantage & one disadvantage of cleistogamy to the plant.
  6. How does megaspore mother cell develop into 7 celled 8 nucleate embryo sac in an angiosperm? Draw a labelled diagram of embryo sac.
  7. List the changes that Primary Oocyte undergoes in the tertiary follicle stage in the ovary .
  8. What is seminal plasma? What are its components?
  9. Draw a labelled diagram of the embryonic stage that gets implanted into the human uterus. State the functions of the two parts labelled.

10. Describe the events of spermatogenesis With the help of schematic representation. Write two differences between spermatogenesis & Oogenesis.
11. What are the ART practiced to help infertile couples? Describe any three techniques.
12. Who discovered Mendel's law of heredity?
13. Explain Sex determination in humans. How do Human males with "XXY" abnormality suffer?
14. Mendel published his work on inheritance of characters in 1865 but it remained unrecognized till 1900. Give three reasons for the delay in accepting his work?
15. It is established that RNA is the first genetic material. Explain giving three reasons.
16. Differentiate between a template strand and coding strand in DNA. Name the source of energy for the replication of DNA?
17. Name the stage in cell cycle in which DNA replication occurs. Explain the mechanism of DNA replication. Highlight the role of enzymes in the process.
18. Why is the process of DNA replication said to be semiconservative?
19. What do contraceptive pills contain & how do they act as contraceptives? What schedule should be followed for taking these pills?
20. Human Blood group is a good example of multiple allelism & codominance. Justify.

## Chemistry:

I Answer the following questions in Chemistry notebook:

1. Define and Give two examples of each.
  - (a) Ferromagnetic substances
  - (b) Ferrimagnetic substances
2. Give an example which shows both Frenkel and Schottky defect.
3. Which type of ionic substances show? Schottky defect (b) Frenkel defect
4. Define – (a) void (b) coordination Number
5. What is the packing efficiency in
  - (a) hcp structure
  - (b) BCC structure
  - (c) Simple cubic structure
6. Copper which crystallizes as a face – centred cubic lattice has a density of  $8.93 \text{ g/cm}^3$  at  $20^\circ \text{C}$ . Calculate the length of the unit cell.
7. An element crystallizes in BCC structure. The edge of its unit cell is 288 pm. If the density is  $7.2 \text{ g/cm}^3$ , calculate the atomic mass of the element.
8. Give difference between crystalline and amorphous solid.
9. The boiling point elevation of 0.6 g acetic acid in 100g benzene is 0.1265K. What conclusion can you draw about the state of solute in solution? Molar elevation constant for benzene is 2.53 deg per molar?
10. A weak electrolyte AB is 5% dissociated in aqueous solution? What is the freezing point of a 0.10 molar aqueous solution of AB?  $K_f = 1.86 \text{ deg/molal}$ ?
11. The osmotic pressure of a 0.0103 molar solution of an electrolyte is found to be 0.70 atm at  $273^\circ \text{C}$ . Calculate van't Hoff factor.  $R = 0.082 \text{ L atm/ mol/K}$ ?
12. When is the value of  $i$  less than unity?
13. The molecular mass of a solute is 120 g/mol and van't Hoff factor is 4. What is its abnormal molecular mass?
14. Draw the graphs of both deviations from ideal behaviours?

15. The activation energy of reaction is 75.2 KJ/mol in the absence of a catalyst and 50.14 KJ/Mol in the presence of a catalyst. How many times will the reaction grow in the presence of a catalyst, if the reaction proceeds at 25<sup>0</sup>C?
16. The rate of a particular reaction quadruples when the temperature changes from 293 K to 313 K. Calculate activation energy for such a reaction.
17. Define the following term with suitable example  
 Antacid                  Antihistamin    Tranquilisers    Analgesics      Narcotics      Antipyrratics  
 Antimicrobial      Antibiotics      Antiseptics      Disinfectant    Antifertility drugs  
 Artificial swetners    Food preservatives    Antioxidant    Anionic detergents    Cationic detergents  
 Non-ionic Detergents

**II** Prepare investigatory project file for AISSCE-2018 under the title of:

- Certificate • Acknowledgement • Why this was selected? (related to daily life) • Introduction • Details of the project(research related to the topic) • Experiment (detailed manner including procedure) • Observations • Analysis • Result • Bibliography (mention the links)

**III** Practice for the following topics in chemistry notebook:

- a) Nomenclature (minimum 20 organic compounds)
- b) Mechanisms done in organic chemistry

### Physics:

Answer the following questions in Physics notebook.

1. State and Explain the following – Quantization of charge , Conservation of charge , Coulomb’s law in vector form and Principle of Superposition of charges .
2. A charge 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  $q = Q/4$  .
3. Derive an expression for the potential energy of an electric dipole in a uniform electric field.
4. Derive an expression for the electric field intensity due to a dipole at any point lying on its axial line or on the equatorial line.
5. Derive an expression for the electric potential at any point due to an electric dipole.
6. State and prove Gauss law in electrostatics and use it to find the electric field at a point due to a charged spherical shell and due to an infinitely long thin sheet of charge .
7. What is capacitance and define its unit . Derive an expression for the capacitance of a parellel plate capacitor when a dielectric slab of thickness t is filled between its plates.
8. Define the resistivity of a material. State its SI unit and discuss its variation with temperature for metals , insulators and semiconductors.
9. State Kirchoff’s laws and use these laws to establish Wheatstone Bridge. How will you find the specific resistance of a material using a Meter Bridge .
10. What is Potentiometer. Explain its principle and how will you compare e.m.f. of two primary cells . Explain with a circuit diagram . Write two precautions to be taken during this experiment.
11. What is a Cyclotron ? Describe its principle, construction ,working theory and its limitations .
12. Discuss with the help of a neat diagram the principle , construction and theory of a moving coil galvanometer. Also explain the current sensitivity and voltage sensitivity of a galvanometer. What are the factors affecting the sensitivity of a galvanometer .
13. What are the elements of earth’s magnetic field? Explain them briefly.
14. State and explain Curie law in magnetism. Write three characteristic properties to distinguish between para , dia and ferro magnetic materials.

15. (a) which material is used in making permanent magnets and why ? (b) why is soft iron preferred for making the core of a transformer ?
16. What do you mean by Bohr Magneton ? An electron in an atom revolves around the nucleus in an orbit of radius  $0.53 \text{ \AA}$ . Calculate the equivalent magnetic moment, if the frequency of revolution of electron is  $6.8 \times 10^9 \text{ MHz}$ .
17. State and explain Faraday's laws of electromagnetic induction. How magnetic flux can be changed linked to a coil ?
18. A wheel with 10 metallic spokes each 50 cm long is rotated with a speed of 120 rpm, in a plane normal to earth's magnetic field at the place. If the magnitude of the field is 0.40 Gauss, what is the induced e.m.f. between the axle and the rim of the wheel.
19. Explain the phenomenon of mutual induction. Define coefficient of mutual inductance. What are its units? Calculate coefficient of mutual inductance between two long solenoids.
20. What is meant by r.m.s. Value of a.c. ? Derive an expression for r.m.s. value of alternating current and e.m.f. .
21. How does the term electric resistance differ from impedance ? With the help of a suitable phasor diagram, obtain a relation for impedance in an a.c. series LCR circuit.
22. Obtain an expression for the frequency of oscillator when a capacitor discharges itself through an inductor.
23. Calculate the frequency of series resonant circuit. Define Q factor of this circuit.
24. Derive an expression for the average power in LCR circuit connected to a.c. supply. Hence define a power factor.
25. Describe principle, construction and working theory of an a.c. generator.
26. What is a transformer? Explain its principle, construction and working theory. What are various types of losses in a transformer. What are the uses of transformer ?
27. What is displacement current ? Explain the consistency of current through charging and discharging of a capacitor using Maxwell - Ampere Circuital law
28. What are the characteristics of electromagnetic waves ?
29. What is electromagnetic spectrum and state the uses of various types of electromagnetic radiations .
30. The magnetic field in a plane electromagnetic wave is given by  $B_y = 3 \times 10^{-7} \sin ( 1.5 \times 10^3 x + 4.5 \times 10^{11} t )$   
T. What is the wavelength and frequency of the wave and write an expression for the electric field?

### Hindi Core:

1. भक्तिन लेखिका के घर नौकरी करने क्यों आ गई?
2. भक्तिन के जीवन क्रम के बारे में लिखिए।
3. बाज़ार दर्शन से आप क्या समझते हैं?
4. लोगों से बाज़ार क्या कहता है?
5. यदि सूखा पड़ जाए तो लोगों के सामने किस प्रकार की स्थिति उत्पन्न हो जाती है?
6. 'काले मेघा पानी दे' पाठके आधार पर जल और वर्षा के अभाव में गाँव की दशाका वर्णन कीजिए।
7. यदि आप धर्मवीर भारती के स्थान पर होते तो जीजी के तर्क सुनकर क्या करते और क्यों?
8. लुट्टनसिंह को राज पहलवान की उपाधि कैसे मिली?
9. बीमारियों की विभीषिका से क्रंदन करता हुआ गाँव और अधिक भयावह रूप किन परिस्थितियों में ग्रहण कर लेता था।
10. 'आत्मपरिचय' कविता का सार अपने शब्दों में लिखिए।
11. 'पतंग' कविता का सार अपने शब्दों में लिखिए।
12. 'कविता के बहाने' कविता का परिचय लिखिए।
13. वाई डी पंत का आदर्श कौन था ? उसके व्यक्तित्व की तीन विशेषताएँ लिखिए।
14. जूझ के कथानायक के चरित्र की तीन विशेषताएँ लिखिए।

15. 'अतीत में दबे पाँव' पाठ के आधार पर किन्हीं तीन दृश्यों का परिचय दीजिए।

### Phy Education:

- 1) Make a practical field based on the following points --
  - i) Acknowledgement.
  - ii) Physical fitness -AAPHER.
  - iii) standard score chart for AAPHER test.
  - iv) Athletics Middle and long distance race and throws. (Any two events)
- 2) 2)Health fitness activities -Asana/ Swiss ball/ Aerobics.
- 3) 3)Draw a neat diagram of field/ court any one game ( Basketball, Hockey, kho-kho, Volleyball ).
  - i) History Of the game.
  - ii) Latest general rules.
  - iii) specification of play playfield and Related sport equipment.
  - iv) Fundamental skills of the game.
  - v) Related sports terminologies.
  - vi) Sports award.
  - vii) Important tournament and venues.
  - viii) Specific exercise of warm up.
  - ix) Common sports injuries and its prevention.
  - x) sport personality.

### Informatics Practices:

A programmer is required to develop a student record. The school offers two different streams, medical and non-medical, with different grading criteria.

The following is the data entry screen used to calculate percentage and grade.

The screenshot shows a window titled "Student Record". It has the following elements:

- Two input fields for "First Term Marks" and "Second Term Marks".
- A "Stream" section with two radio buttons: "Medical" and "Non-Medical".
- An input field for "Percentage" and a button labeled "Calculate Percentage".
- An input field for "Grade" and a button labeled "Calculate Grade".
- Two buttons at the bottom: "Clear" and "Exit".

(1) Write the code to disable the txtPercentage and the txtGrade text fields.

(2) Write the code for the cmdClear button to clear all the text fields.

(3) Write the code for the cmdCalcPerc button to calculate the percentage to display in text field txtPercentage, after finding the total marks of first term and second term (assuming that both marks are out of 100).

(4) Write the code for the cmdCalcGrade button to calculate the grade to display in text field txtGrade, depending on the stream selected according to the criteria in the following table:

Stream	Percentage	Grade
Medical	$\geq 80$	A
	60 – 80	B
	$< 60$	C
Non Medical	$\geq 75$	A
	50 – 75	B
	$< 50$	C

### C. Art:

1. Earrings from beads/Quilling.
2. Pot decoration, 12” minimum
3. Any creativity from plastic bottle
4. Lamp Shade or Frame from CD/Buttons/Bulbs
5. Paper Bag.
6. Prepare pages- Miniature, Story/Greetings/Kerala Mural.