

K.V.M. PUBLIC SCHOOL HALDWANI HOLIDAY WORK (2025-26) CLASS – XI B

SUBJECT - ENGLISH

1.Read any of the following classic stories from the options below: The Bet – Anton Chekhov The Gift of the Magi – O. Henry The Last Leaf – O. Henry

The Model Millionaire – Oscar Wilde A Cup of Tea - Katherine Mansfield

An Astrologer's Day- R K Narayan

2. Write an analytical response for any of the stories (400–500 words each) including:

- a. Summary (in your own words, 100–120 words)
- b. Main conflict (internal or external? How is it resolved?)
- c. Character analysis Focus on one main character
- d. Central theme/message of the story
- e. Use of literary devices (irony, symbolism, foreshadowing, etc.)
- f. Personal reflection What did the story teach you? Did it surprise you?

SUBJECT - CHEMISTRY

Answer all the questions:

- Q1. What are the SI units of molarity?
- Q2. What do you understand by stochio -metric coefficients in a chemical equation?
- Q3. Give an example of a molecule in which the ratio of the molecular formula is six times the empirical formula.
- Q4. What is an atom according to Dalton's atomic theory?
- Q5. Name two factors that introduce uncertainty into measured figures.
- Q6. State Avogadro's law.
- Q8. What is one a.m.u. or 'u'?
- Q9. Express the following up to four significant figures:

(i) 6.5089 (ii) 32.3928 (iii) 2000 (iv) 8.721×10^4

Q10. Convert 2.6 minutes in seconds.

Q11. A compound on analysis was found to contain C = 34.6%, H = 3.85%, and O= 61.55%. Calculate the empirical formula.

- Q12. What is the most important application of de Broglie concept?
- Q13. Which one Fe^{3+} , Fe^{2+} is more paramagnetic and why?
- Q14. Write the electronic configuration and number of unpaired electrons in Fe^{2+} ion.
- Q15. Yellow light emitted from a sodium lamp has a wavelength of 580 nm. Calculate the frequency and wave number of the yellow light.
- Q16. Calculate the wavelength, frequency and wave number of light wave whose period is 2.0×10^{-10} s.
- Q17. Calculate the mass percentage of benzene (C₆H₆) and carbon tetrachloride (CCl₄) if 22 g of benzene is dissolved in 122 g of carbon tetrachloride.
- Q18. Calculate the mole fraction of benzene in solution containing 30% by mass in carbon tetrachloride.
- Q19. Calculate the molarity of each of the following solutions:
- (i) $30 \text{ g of Co} (NO_3)_2.6H_2O \text{ in } 4.3 \text{ L of solution.}$ (Atomic mass of Co = 58.7 u)
- (ii) $30 \text{ mL of } 0.5 \text{ M H}_2\text{SO}_4$ diluted to 500 mL.
- Q20. Calculate the mass of urea (NH₂CONH₂) required in making 2.5 kg of 0.25 molal aqueous solution.
- Q21. Calculate (a) molality (b) molarity and (c) mole fraction of KI (potassium iodide) if the density of 20% (mass/volume) aqueous KI is 1.202 g mL⁻¹.
- Q22. Give the number of electrons in the species: H_2^+ , H_2 , O_2^+ .

- Q23. Using s, p and d notations, describe the atomic orbital with following quantum numbers: (i) n=1, l=0 (ii) n=4, l=1, m=0 (iii) n=5, l=2
- Q24.Awelding gas contains carbon and hydrogen only, burning a small sample of it in oxygen gives 3.38 g carbon dioxide, 0.690 g of water and no other products. A volume of 10.0 L (measured in STP) of this welding gas is found to weight 11.6 g. Calculate (i) empirical formula, (ii) molar mass of the gas, and (iii) molecular formula.
- Q25. What transition in a hydrogen spectrum would have the same wavelength Balmer transition n = 4 to n = 2 of He⁺ spectrum
- Q26. Calculate the wavelength of an electron moving with the velocity of 2.05 \times 10⁷ ms⁻¹.
- Q27. What is the lowest value of n which allows 'g' orbital to exists.
- Q28. Define iso-electronic species. Which of the following are iso-electronic species?
- Q29. The mass of an electron is 9.1 \times 10⁻³¹ kg. If its kinetic energy is 3.0 \times 10⁻²⁵ J, calculate its wavelength.
- Q30. Show that the circumference of the Bohr orbit for the hydrogen atom is an integral multiple of the de-Broglie wavelength associated with electron revolving around orbit.
- Q31. Calculate the molarity of pure water (density of water = 1 g mL^{-1}).
- Q32. A solution is 25% water, 25% ethanol and 50% acetic acid by mass. Calculate the mole fraction of each component.
- Q33. How are 0.50 m Na₂CO₃ and 0.50 M Na₂CO₃ different?
- Q34. What do mean by significant figures?
- Q35.What is the symbol for SI unit of mole? How is the mole defined?
- Q36. What is the difference between molality and molarity?
- Q37. Define Avagadro's law.
- Q38. Define Pauli's exclusion principal and Hund's rule with examples.
- Q39. What do you understand by the terms element, compound and mixture? Give two examples in each case.
- Q40. State the law of conservation of mass. How is it verified experimently?
- Q41. What is an orbital? How will you differentiate between an orbit and orbital?
- Q42. Calculate the wave number for the longest wavelength transition in the Balmer series of atomic hydrogen.
- Q43. Calculate the wavelength of an electron moving with the velocity of 2.05×10^7 ms⁻¹.
- Q44. The mass of an electron is 9.1×10^{31} kg. If its K.E. is 3.0 10^{-25} J, calculate its wavelength.
- Q45. What will be the wavelength of a ball of mass 0.1 kg moving with the velocity of 10 ms⁻¹.
- Q46. Calculate the mass of a photon of light having wavelength 3.6 ⁰A.
- Q47.Can we apply uncertainty principle to a stationary electron.
- Q48. Cu^{2+} is more stable then Cu^{+} in aqueous solution. Explain.
- Q49. Calculate the ratio of wavelength of first spectral line of Lyman and Balmer series of hydrogen spectrum.
- Q50. Give the number of electrons in the species: H_2^+ , H_2 and O_2^+ .

PHYSICS

Make a project file on any one of the following topics (atleast 12 pages in A4 sheets; include Acknowledgement, Certificate and Bibliography, all pages should have a proper border):

- 1. Dimensional analysis and its applications.
- 2. Motion in a straight line.
- 3. Motion in a plane.
- 4. Gravitation.

YOGA

- 1. What is the definition and purpose of yoga?
- 2. What are the benefits of practicing asanas and how to perform them correctly?
- 3. What are the different types of pranayama and their benefits?
- 4. What is meditation (dhyan) and how is it practiced?

5. What is the relationship between yoga and health?

BIOLOGY

Q1. Short preset on Biological classification (At least with one Kingdom).

Sample- (given below)

* Instructions: 1. Title of the presentation.

- Topic must have front page, introduction, needs of classification.
- Information about all the types of classification.
- •
- Complete information about any one Kingdom. Relevant diagram must be attached with your presentation. •
- Cover page must be attached.
- Conclusion.

Mode: Present the information in the form of PPT

Q2. Do the following activities in your lab manual -

NOTE- leave observations and Results

SECTION -A (Core experiments)

1. Study and described the locally available common flowering plant from family Solanaceae.

- 2. Preparation and study T. S of dicot and monocot stem.
- 3. Study of osmosis by potato osmometer.
- 4. Study of distribution of stomata from upper and lower surface of leaves.
- 5. Separation of plant pigments through paper chromatography.

SECTION - B (Spotting)

1, 2, 3, 5 and 6 (Do as per instructions given in class)

PHYSICAL EDUCATION (048)

Prepare track and field file. The file must include the following points and should be in the given sequence: -*History (world and Indian)

*Dimensions of track and field (dimensions of track, throwing events and jumping events)

*Terminology use in track and field

*Skill use in track and field

* Write about all events of running, throwing and jumping

*Famous personalities international and national both male and female

*Venue

INFORMATICS PRACTICES

1. Programming Assignments

Write a Python program that performs basic operations (addition, subtraction, multiplication, division).

2. Research and Presentation

Research a recent technology trend (like AI, IoT, or Blockchain) and prepare a presentation. Discuss its applications, benefits, and challenges.