

SUMMER HOLIDAY HOMEWORK-2026

CLASS:-11th Medical

ENGLISH

1. Literature-Based Analytical Question (Writing Skill)

Q1. Human life is short-lived in contrast to nature. Comment on this statement in the light of the poem A Photograph.

(Word limit: 120–150 words)

Focus on: theme of transience, memory, nature's permanence, and human emotions.

2) .What technological advancements helped archaeologists and scientists uncover the mysteries of King Tut's death? What does this reveal about the role of modern science in understanding history?

(Word limit: 120–150 words)

3) How did the family's courage and teamwork help them survive the storm? Relate this to a real-life situation where unity helped overcome a crisis.

2) **ENRICHMENT ACTIVITY (Speaking Skill – Creative Presentation),**

Prepare a 2–3 minute speech on ONE of the following topics:

Importance of Mental Health in Teenagers Youth and the Power of Voting

Guidelines:

Start with a strong introduction

Include real-life examples

End with a powerful conclusion or message

Focus on clarity, confidence, and expression

(3) **Vocabulary Building**

Pick 15 advanced words from your Literature book. For each word, write:

Meaning, Use in the lesson (quote the sentence), Your own sentence and Synonym and antonym

6) Design a poster on "Say No to Plastic" to raise awareness about plastic pollution.

Instructions:

Use catchy slogans or taglines, Include illustrations or symbols.

Highlight effects of plastic and eco-friendly alternatives. Keep the layout neat and attractive.

7. **Editorial Reflection (Critical Thinking)**

Choose any one editorial article and answer:

What is the main issue discussed? What is the writer's opinion? Do you agree with the writer? Why?

Suggest one solution to the problem.

(Word limit: 100–120 words)

8. **Advertisement Analysis (Media Literacy)**

Collect 2 advertisements from a newspaper and analyze: Product/service name, Target audience Slogan used

Persuasive techniques (emotions, facts, celebrity, etc.) Your opinion: Is the ad effective or not?

BIOLOGY

Cell – The Unit of Life

1. Explain the structure and functions of the plasma membrane. Why is it called selectively permeable?
2. Describe the structure of mitochondria and explain why it is called the "powerhouse of the cell".
3. Differentiate between plant cell and animal cell with suitable diagrams/features.
4. Explain the structure and functions of the nucleus.
5. Describe the structure and functions of endoplasmic reticulum and Golgi apparatus.
6. Explain the structure of chloroplast and its role in photosynthesis. Cell Cycle and Cell Division
7. Describe the different phases of mitosis with neat labeled diagrams.
8. Explain meiosis and mention its significance.

9. Differentiate between mitosis and meiosis.
10. Explain the cell cycle with a neat labeled diagram.
11. Describe the events occurring during interphase.
12. Explain cytokinesis in plant and animal cells. The Living World
13. Why is taxonomy important? Explain the hierarchy of classification.
14. Explain binomial nomenclature and mention its rules.
15. Describe the characteristics of living organisms.
16. Explain the role of taxonomical aids in biological classification.
17. Differentiate between herbarium, botanical garden, museum, and zoological park. Biological Classification
18. Explain the Five Kingdom Classification proposed by Robert H. Whittaker.
19. Describe the important characteristics of Kingdom Monera.
20. Explain the economic importance of fungi.
21. Differentiate between Archaeobacteria and Eubacteria.
22. Describe the characteristics and reproduction in Protista.
23. Explain the structure and reproduction of viruses.
24. Differentiate between phycomycetes, ascomycetes, and basidiomycetes.
25. Describe the important characteristics of Kingdom Fungi with suitable examples.

SUBJECT:-CHEMISTRY

MULTIPLE CHOICE QUESTIONS

Competitive Examinations — Structure of Atom & Quantum Chemistry

- B1.** The frequency of radiation emitted when the electron falls from $n = 4$ to $n = 1$ in a hydrogen atom will be (given ionization energy of H = 2.18×10^{-18} J atom⁻¹ and $h = 6.625 \times 10^{-34}$ Js)
- (a) 1.03×10^{15} s⁻¹ (b) 3.08×10^{15} s⁻¹
 (c) 2.00×10^{15} s⁻¹ (d) 1.54×10^{15} s⁻¹
- B2.** Time taken for an electron to complete one revolution in the Bohr orbits of hydrogen atom is
- (a) $4\pi^2mr^2 / nh$ (b) $nh / 4\pi^2mr$ (c) $2\pi mr^2 / n^2h^2$ (d) $h / 2\pi mr$ (e) $nh / 4\pi^2mr^2$
- B3.** Which of the following electronic configuration is not possible according to Hund's rule?
- (a) $1s^2 2s^2$ (b) $1s^2 2s^1$
 (c) $1s^2 2s^2 2p_x^1 2p_y^1 2p_z^1$ (d) $1s^2 2s^2 2p_x^2$
 (e) $1s^2 2s^2 2p_x^2 2p_y^1 2p_z^1$
- B4.** The energy of second Bohr orbit of the hydrogen atom is -328 kJ mol⁻¹ hence the energy of fourth Bohr orbit would be
- (a) -41 kJ mol⁻¹ (b) -82 kJ mol⁻¹ (c) -164 kJ mol⁻¹ (d) -1312 kJ mol⁻¹
- B5.** The de-Broglie wavelength associated with a ball of mass 1 kg having kinetic energy 0.5 J is
- (a) 6.626×10^{-34} m (b) 13.20×10^{-34} m
 (c) 10.38×10^{-21} m (d) 6.626×10^{-34} Å

B6. Consider the following sets of quantum numbers:

Set	n	l	m	s
(A)	3	0	0	+1/2
(B)	2	2	1	+1/2
(C)	4	3	-2	-1/2
(D)	1	0	-1	-1/2
(E)	3	2	3	+1/2

Which of the following sets of quantum numbers is not possible?

- (a) A, B, C and D (b) B, D and E (c) A and C (d) B, C and D

- B35.** The number of d-electrons in Fe^{2+} ($Z = 26$) is not equal to the number of electrons in which one of the following?
 (a) d-electrons in Fe ($Z = 26$) (b) p-electrons in Ne ($Z = 10$)
 (c) s-electrons in Mg ($Z = 12$) (d) p-electrons in Cl ($Z = 17$)
- B36.** In Bohr series of lines of hydrogen spectrum, the third line from the red end corresponds to which one of the following inter-orbit jumps of the electron for Bohr orbit in an atom of hydrogen?
 (a) $5 \rightarrow 2$ (b) $4 \rightarrow 1$ (c) $2 \rightarrow 5$ (d) $13 \rightarrow 2$
- B37.** The de-Broglie wavelength of a tennis ball of mass 60 g moving with a velocity of 10 ms^{-1} is approximately
 (a) 10^{-31} m (b) 10^{-16} m (c) 10^{-25} m (d) 10^{-33} m
- B38.** Which of the following sets of quantum numbers is correct for an electron in 4f orbital?
 (a) $n = 4, l = 3, m = +1, s = +1/2$ (b) $n = 4, l = 4, m = -4, s = -1/2$
 (c) $n = 4, l = 3, m = +4, s = +1/2$ (d) $n = 3, l = 2, m = -2, s = -1/2$
- B39.** Consider the ground state of Cr atom ($Z = 24$). The number of electrons with azimuthal quantum numbers, $l = 1$ and 2 are respectively
 (a) 16 and 4 (b) 12 and 5 (c) 12 and 4 (d) 16 and 5
- B40.** The correct set of quantum numbers (n, l and m_l) respectively for unpaired electron of chlorine atom is
 (a) 2, 1, 0 (b) 2, 1, 1 (c) 3, 1, 1 (d) 3, 2, 1 (e) 3, 2, -1
- B41.** The relationship between energy E_1 of the radiation with a wavelength 800 Å and the energy of radiation with a wavelength 1600 Å is
 (a) $E_1 = 6E_2$ (b) $E_1 = 2E_2$ (c) $E_1 = 4E_2$ (d) $E_1 = 1/2 * E_2$ (e) $E_1 = E_2$
- B42.** In a multielectron atom, which of the following orbitals described by the three quantum numbers will have the same energy in the absence of magnetic and electric fields?
 (a) $n = 1, l = 0, m = 0$ (b) $n = 2, l = 0, m = 0$
 (c) $n = 2, l = 1, m = 1$ (d) $n = 3, l = 2, m = 1$
 (e) $n = 3, l = 2, m = 0$
- Options:
 (a) (a) and (b) (b) (b) and (c)
 (c) (c) and (d) (d) (d) and (e)
- B43.** According to Bohr's theory, the angular momentum of an electron in 5th orbit is
 (a) $1.0 h/\pi$ (b) $10 h/\pi$ (c) $2.5 h/\pi$ (d) $25 h/\pi$
- B44.** Uncertainty in the position of an electron (mass = $9.1 \times 10^{-31} \text{ kg}$) moving with a velocity 300 ms^{-1} , accurate upto 0.001% will be ($h = 6.63 \times 10^{-34} \text{ Js}$)
 (a) $5.76 \times 10^{-2} \text{ m}$ (b) $1.92 \times 10^{-2} \text{ m}$ (c) $3.84 \times 10^{-2} \text{ m}$ (d) $19.2 \times 10^{-2} \text{ m}$
- B45.** The radius of the first Bohr orbit of hydrogen atom is 0.59 Å. The radius of third orbit of He^+ will be
 (a) 8.46 Å (b) 0.705 Å (c) 1.59 Å (d) 1.41 Å (e) 2.38 Å
- B46.** Which of the following sets of quantum numbers represents the highest energy of an atom?
 (a) $n = 3, l = 2, m = 1, s = +1/2$ (b) $n = 4, l = 0, m = 0, s = +1/2$
 (c) $n = 3, l = 0, m = 0, s = +1/2$ (d) $n = 3, l = 1, m = 1, s = +1/2$
- B47.** The ionization enthalpy of hydrogen atom is $1.312 \times 10^6 \text{ J mol}^{-1}$. The energy required to excite the electron in the atom from $n = 1$ to $n = 2$ is
 (a) $9.84 \times 10^5 \text{ J mol}^{-1}$ (b) $8.51 \times 10^5 \text{ J mol}^{-1}$
 (c) $6.56 \times 10^5 \text{ J mol}^{-1}$ (d) $7.56 \times 10^5 \text{ J mol}^{-1}$

- B49.** Calculate the wavelength associated with a proton moving at 1.0×10^3 m/s. (Mass of proton = 1.67×10^{-27} kg and $h = 6.63 \times 10^{-34}$ Js)

- B50.** What is the maximum number of emission lines obtained when the excited electrons of a hydrogen atom in $n = 5$ drop to ground state?

- B51.** The wave number of the spectral line in the emission spectrum of hydrogen will be equal to $8/9$ times the Rydberg's constant if the electron jumps from

- B52.** A 600 W mercury lamp emits monochromatic radiation of wavelength 331.3 nm. How many photons are emitted from the lamp per second? ($h = 6.626 \times 10^{-34}$ Js; velocity of light = 3×10^8 m s⁻¹)

- B53.** The shortest wavelength in hydrogen spectrum of Lyman series when $R_H = 109678 \text{ cm}^{-1}$ is

- B54.** Ionisation energy of He^+ is $19.6 \times 10^{-18} \text{ J atom}^{-1}$. The energy of first stationary state ($n = 1$) of Li^{2+} is

- B55.** The energy required to break one mole of Cl-Cl bonds in Cl₂ is 242 kJ mol⁻¹. The largest wavelength of light capable of breaking a single Cl-Cl bond is ($c = 3 \times 10^8 \text{ ms}^{-1}$ and $N_A = 6.02 \times 10^{23} \text{ mol}^{-1}$)

- B56.** The electrons identified by quantum numbers n and l :

- can be placed in order of increasing energy as:

- B57.** Which transition in the hydrogen atomic spectrum will have the same wavelength as the transition, $n = 4$ to $n = 2$ of He^+ spectrum?

- B58.** For Balmer series in the spectrum of atomic hydrogen, the wave number of each lines is given by $\bar{\nu} = R_H \cdot (1/n_1^2 - 1/n_2^2)$ where R_H is a constant and n_1 and n_2 are integers. Which of the following statement(s) is (are) correct?

4. The line of longest wavelength corresponds to $n_2 = 3$.

Options:

- (a) 1, 2 and 3 (b) 2, 3 and 4 (c) 1, 2 and 4 (d) 2 and 4 only (e) 2 only

B59. If the energies of the two photons are in the ratio of 3 : 2, their wavelengths will be in the ratio of
(a) 9 : 4 (b) 2 : 3 (c) 1 : 2 (d) 3 : 2

B60. A gas absorbs a photon of 355 nm and emits at two wavelengths. If one of the emission is at 680 nm, the other is at
(a) 1035 nm (b) 325 nm (c) 743 nm (d) 518 nm

B61. The frequency of light emitted for the transition $n = 4$ to $n = 2$ of He^+ is equal to the transition in H-atom corresponding to which of the following?

- (a) $n = 2$ to $n = 1$ (b) $n = 3$ to $n = 2$ (c) $n = 4$ to $n = 3$ (d) $n = 3$ to $n = 1$

B62. The ratio of the frequency corresponding to the third line in Lyman series of hydrogen atomic spectrum to that of the first line in Balmer series of Li^{2+} spectrum is

- (a) $4/5$ (b) $5/4$ (c) $4/3$ (d) $3/4$ (e) $3/8$

B63. The correct set of four quantum numbers for the outermost electron of sodium ($Z = 11$) is

- (a) 3, 1, 0, $1/2$ (b) 3, 1, 1, $1/2$ (c) 3, 2, 1, $1/2$ (d) 3, 0, 0, $1/2$

B64. Impossible orbital among the following is

- (a) 2s (b) 3f (c) 2p (d) 4d

B65. Maximum number of electrons in a shell with principle quantum number n is given by

- (a) n (b) $2n$ (c) n^2 (d) $2n^2$

B66. The electrons identified by quantum numbers n and l :

- (1) $n = 4, l = 1$ (2) $n = 4, l = 0$
(3) $n = 3, l = 2$ (4) $n = 3, l = 1$

can be placed in order of increasing energy as:

- (a) $(4) < (2) < (3) < (1)$ (b) $(2) < (4) < (1) < (3)$
(c) $(1) < (3) < (2) < (4)$ (d) $(3) < (4) < (2) < (1)$

B67. Identify the CORRECT statement.

- (a) Quantum numbers (n, l, m_l, m_s) are obtained arbitrarily.
(b) All the quantum numbers (n, l, m, s) for any pair of electrons in an atom can be identical under special circumstance.
(c) All the quantum numbers (n, l, m, s) may not be required to describe an electron of an atom completely.
(d) All the quantum numbers (n, l, m, s) are required to describe an electron of an atom completely.

B68. The electronic configuration of Cu^{2+} ion is

- (a) $[\text{Ar}] 3d^8 4s^1$ (b) $[\text{Ar}] 3d^9 4s^0$ (c) $[\text{Ar}] 3d^7 4s^2$ (d) $[\text{Ar}] 3d^8 4s^0$

B69. The ionization enthalpy of He^+ ion is $19.60 \times 10^{-18} \text{ J atom}^{-1}$. The ionization enthalpy of Li^{2+} ion will be

- (a) $84.2 \times 10^{-18} \text{ J atom}^{-1}$ (b) $44.10 \times 10^{-18} \text{ J atom}^{-1}$
(c) $63.20 \times 10^{-18} \text{ J atom}^{-1}$ (d) $21.20 \times 10^{-18} \text{ J atom}^{-1}$
(e) $2.17 \times 10^{-19} \text{ J atom}^{-1}$

B70. The orbital diagram in which Aufbau principle is violated is

- (a) $\uparrow\downarrow\uparrow\uparrow\uparrow$ (b) $\uparrow\uparrow\uparrow\uparrow\uparrow$ (c) $\uparrow\downarrow\uparrow\downarrow\uparrow$ (d) $\uparrow\downarrow\uparrow\uparrow\uparrow$

- B71.** Energy of an electron is given by $E = -2.178 \times 10^{-18} \text{ J } (Z^2/n^2)$. Wavelength of light required to excite an electron in a hydrogen atom from level $n = 1$ to $n = 2$ will be ($h = 6.62 \times 10^{-34} \text{ J s}$ and $c = 3.0 \times 10^8 \text{ m s}^{-1}$)
 (a) $8.500 \times 10^{-7} \text{ m}$ (b) $1.214 \times 10^{-7} \text{ m}$ (c) $2.816 \times 10^{-7} \text{ m}$ (d) $6.500 \times 10^{-7} \text{ m}$
- B72.** As per de Broglie's formula a macroscopic particle of mass 100 g and moving at a velocity of 100 cm s^{-1} will have a wavelength of
 (a) $6.6 \times 10^{-29} \text{ cm}$ (b) $6.6 \times 10^{-30} \text{ cm}$ (c) $6.6 \times 10^{-31} \text{ cm}$ (d) $6.6 \times 10^{-32} \text{ cm}$
- B73.** The electronic configuration of Cu is
 (a) $[\text{Ne}] 3s^2 3p^6 3d^9 4s^2$ (b) $[\text{Ne}] 3s^2 3p^6 3d^{10} 4s^1$
 (c) $[\text{Ne}] 3s^2 3p^6 3d^3 4s^2 4p^6$ (d) $[\text{Ne}] 3s^2 3p^6 3d^5 4s^2 4p^4$
- B74.** The shortest wavelength of the line in hydrogen atomic spectrum of Lyman series when $R_H = 109678 \text{ cm}^{-1}$ is
 (a) $1002.7 \text{ \AA}$ (b) $1215.67 \text{ \AA}$ (c) $1127.30 \text{ \AA}$ (d) $911.7 \text{ \AA}$ (e) $1234.7 \text{ \AA}$
- B75.** The work function of a metal is 5 eV. What is the kinetic energy of the photoelectron ejected from the metal surface if the energy of the incident radiation is 6.2 eV? ($1 \text{ eV} = 1.6 \times 10^{-19} \text{ J}$)
 (a) $6.626 \times 10^{-19} \text{ J}$ (b) $8.01 \times 10^{-19} \text{ J}$
 (c) $1.92 \times 10^{-18} \text{ J}$ (d) $8.010 \times 10^{-18} \text{ J}$
 (e) $1.92 \times 10^{-19} \text{ J}$
- B76.** The calculated magnetic moment of a divalent ion of an atom with atomic number 24 in aqueous solution is
 (a) 4.90 BM (b) 5.92 BM (c) 3.87 BM (d) 2.84 BM (e) 1.73 BM
- B77.** The statement that is not correct is
 (a) angular quantum number signifies the shape of the orbital
 (b) energies of stationary states in hydrogen like atoms are inversely proportional to the square of the principal quantum number
 (c) total number of nodes for 3s orbital is three
 (d) the radius of the first orbit of He^+ is half that of the first orbit of hydrogen atom.
- PHYSICS**
- Q1.** State the number of significant figures in the following: (a) 0.007 m² (b) $2.64 \times 10^4 \text{ kg}$ (c) 0.2370 g cm⁻³ (d) 6.320 J (e) 6.032 N m⁻² (f) 0.0006032
- Q2.** Two trains A and B of length 400 m each are moving on two parallel tracks with a uniform speed of 71 km h⁻¹ in the same direction, with A ahead of B. The driver of B decides to overtake A and accelerates by 1 ms⁻¹. If after 50 s, the guard of B just brushes past the driver of A, what was the original distance between them?
- Q3.** A player throws a ball upwards with an initial speed of 29.4 ms⁻¹. (a) What is the direction of acceleration during the upward motion of the ball? (b) What are the velocity and acceleration of the ball at the highest point of its motion? (c) Choose the $x = 0 \text{ m}$ and $t = 0 \text{ s}$ to be the location and time of the ball at its highest point, vertically downward direction to be the positive direction of x-axis, and give the signs of position, velocity and acceleration of the ball during its upward, and downward motion. (d) To what height does the ball rise and after how long does the ball return to the player's hands?
- Q4.** The ceiling of a long hall is 25 m high. What is the maximum horizontal distance that a ball thrown with a speed of 40 m s⁻¹ can go without hitting the ceiling of the hall?
- Q5.** A body of mass 0.40 kg moving initially with a constant speed of 10 ms⁻¹ to the north is subject to a constant force of 8.0 N directed towards the south for 30 s. Take the instant the force is applied to be $t = 0$, the position of the body at that time to be $x = 0$, and predict its position at $t = -5 \text{ s}$, 25 s, 100 s. (a) a uniform speed of 10 ms⁻¹. (b) downwards with a uniform acceleration of 5 ms⁻². (c) upwards with a uniform

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Q7. Explain friction and its graph with applied force.

Q8. Two bodies of masses 10 kg and 20 kg respectively kept on a smooth, horizontal surface are tied to the ends of a tight string. A horizontal force $F = 600 \text{ N}$ is applied to (i) A, (ii) B along the direction of string.

What is the tension in the string in each case?

Q9. A particle starts from rest and moves with acceleration

velocity after 5 s displacement in first 5 s time when velocity becomes maximum.

Q10. A car travelled the first third of a distance x at a speed of 10 km/h, the second third with a speed of 20 km/h and the last third at speed of 60km/h. Determine the average speed of the car over the entire distance x .

Q11. A table clock has its minute hand 9 cm long. Find the average velocity of the tip of the minute hand (a) between 3 am to 3.30 am and (b) between 3 am to 3 pm.

Q12. A car travels along a straight line with speed 40 km/h from A to B and returns back to A with speed 60 km/h. Find the average speed of the car and its average velocity

1. All definition

2. Taal

Q1. Answer the following questions:

1. What is Physical Education?

2. Explain the aims and objectives of Physical Education.

3. Write any four career options in Physical Education.

4. What do you mean by Khelo India Program?

5. Explain the role of Physical Education in fitness and health.

1. Who is known as the father of Modern Olympics?

2. Write the Olympic motto.

3. Explain the Olympic values.

4. What do the five Olympic rings represent?

5. Write a short note on Olympic flag.

Q6. Project Work (Do any one)

* Make a chart on Olympic Symbols.

OR

* Collect pictures of famous Indian athletes and paste them in scrapbook with their achievements.

Viva/Practical Task

1. Write daily fitness activities done during holidays.

2. Practice any five yoga asanas and write their benefits.

Make a presentation on chapter -1 computer system and email to subject teacher.

2. Make a chart of conversion:

1. Decimal number system to any No.

2. Any No to Decimal no.

3. Fractional binary to decimal.

4. Fractional decimal to binary.

3. Collect your shopping bills and make a excel file of your expenditure.

4. Create a document for different encoding schemes and draw ASCII and ISCII tables in a word document.

5 .Install python in your laptop/computer .