SURAJ

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SCHOOL
PATAUDI

Summer Vacation

Holiday

SESSION 2023-24

HOME WORK

12th M

ENJOY
SUMMER
:★★★:

English

This summer break, delve deeper into the nuances of the literary word. Your Holiday's Homework consists of 4 different sections based on reading and comprehending the text writing a movie review, Strengthening your knowledge about various Concepts along with your vocabulary and practicing case based reading comprehension passages. Test your understanding by attempting the following in your English register.

SECTION A (READING AND COMPREHENDING THE TEXT)
Read the chapters:
The lost spring (flamingo)
Deep water (flamingo)
Identity the theme of the chapter and write it in your own words (Word Limit: 100 words].

SECTION B (BINGE WATCH)

Watch any (or all) of the following movies and pen down a review concentrating on the plot, historical/ political background, creative elements characterization and theme in not more than 200 words.

Schindler's List, 1993
Dead Poets Society, 1989
Modern Times, 1936
Gandhi, 1982
Cast away, 2000

SECTION C (EXPLORE)

Explore the following concepts and write a brief note In your own words. Note that all these concepts will be helpful in understanding the chapters/poems.

Feminism
Racism
Casteism
Dramatic Irony

Words not only reflect the history of a country but also the many and diverse cultural and linguistic influences which have shaped an changed the English language in India. Figure out 10 Indian words that have been recently added to the Oxford English Dictionary (OED), Write the meaning in English alongside.

SECTION D (PRACTICE)

Practice the Reading Comprehension Passage and solve it in your register.
Read all the lessons and poems which have been completed in the class.

Physics (NDA)

1. Make one chart related to your XII PHYSICS syllabus.
2. Make an investigatory project on one of the topic given in PHYSICS laboratory manual.
3. Make a power point presentation of at least five slides along with audio from one of NDA(SSB)/NEET.
4. Complete laboratory practical file by writing the experiments only.
5. Revise strongly first 3 chapters of part-1 from NCERT for written test purpose(after the end of summer vacation).

Physics

Q1.   Two charged capacitors are connected by a conductor wire. Calculate common potential of capacitors (ii) ratio of their charges at common potential. Show that energy is lost this process.

Q2.   Drive an expression for potential at any point distance r form the centre O of dipole making an angle θ with the diploe.

Q3.   Suppose that three points are set at equal distance r = 90cm form the centre of dipole, point A and point B are on either side of the dipole on the axis (A closer to +ve charge and B closer to negative charge) point C which is on the perpendicular bisector throungthe line joining the charges. What would be the electric potential due to the dipole of dipole moment 3.6×10^{19}cm at point A, B and C ?

Q4.   Drive an expression for capacitor of parallel plate capacitor with dielectric slab of thickness t(t<d) between the plates separated by distance d. How would the following (i) energy (ii) charge (iii) potential to affected (a) if dielectric slab is introduce with battery disconnected (b) dielectric slab is introduce after the battery is connected.

Q5.   State gauss's theorem. Derive an expression for the electric field due to a charge plane sheet. Find the potential difference between the plates of parallel plate capacitor having surface density of charge 5×10-8cm-2 with the separation between plates being 4mm.

Q6.   Using Gauss's theorem obtain an expression for electric field intensity due to a plane sheet of charge. Hence obtain expression for electric filed intensity in parallel plate capacitor.

Q7.   Select an investigatory project on one of the topic given in physics laboratory manual for class 12th and must inform me so that there should not be any repetition.

Q8.   Make a power point presentation of at least five slides along with audio from one of the chapter.

Q9.   Make a physics model (any)

Q10.   What is drift velocity? Give a relation between electric current & drift velocity.

Chemistry

Q1.   Define henry law? Give its limitation and its application.

Q2.   (A)Define abnormal molecular mass ?
        (B)Write application of depression in freezing point colligative property ?
        (C)Out of these two molarity and molality which one is better and why.

Q3.   Sulphuric acid (H_2SO_4) used in lead storage cell is 38% by mass and has a density of $1.30gcm^{-3}$ calculate its molarity.

Q4.   A solution prepared by dissolving 8.9 g of a gene fragment in 35 L of water has an osmatic pressure of 0.335 torr at 25 ^{0}c assuming that the gene fragment is a non electrolyte calculate its molar mass.

Q5.   Calculate the mass of compound (molar mass=256g/mol) to be dissolved in 75g of benzene to lower its freezing point by 0.48k (k_f=5.12 k kg mol^{-1}).

Q6.   Explain variation of molar conductivity with concentration (for strong and weak electrolyte).

Q7.   Define fuel cell and write anode and cathode reaction of H_2 - O_2 fuel cell.

Q8.   Calculate the E.M.F of the following cell at 298k
        $2cr(s)+3fe^{2+}$ (0.1 M) $\rightarrow 2cr^{3+}$ (0.01M)+3 fe(s)
        Given E^0 (cr^{3+}/cr) = -0.74V , E^0 (fe^{2+}/fe)= -0.44v

Q9.   Calculate the standard free energy change and maximum work obtain able for the reaction.
        Zn(s) + Cu^{2+}(aq) $\rightleftharpoons$ Cu(s) + Zn^{2+}(aq)
        Given E^0 (zn^{2+}/zn) =-0.76v , E^0 (cu^{2+}/cu) = 0.34v ; F = 96500

Q10.   A solution of $CuSO_4$ is electrolysed for 10 minute with a current of 1.5 ampere .What is the mass of copper deposited at the cathode (molar mass of cu=63.5 g/mol)

Q11.   Write down the difference between order of reaction and molecularity of reaction.

Q12.   (A)Define pseudo first order reaction.
        (B)Write unit of rate constant for second order reaction.
        (C)Define activation energy.

Q13.   A reaction is of first order in reactant A and second order in reactant B How is the rate of

reaction affected when concentration of A and B is doubled ?

Q14. A first order reaction is 40% complete in 50 minute calculate the value of the rate constant in what time will the reaction be 80% complete?

Q15. A first order reaction is 75% complete in 40 minute calculate its $t_{1/2}$.

Q16. Write down difference between lanthanide and actinide?

Q17 Why transition elements act as catalyst ?

Q18 write preparation of potassium dichromate and potassium permanganate ?

Q19 Why transition elements show variable oxidation state except first and last elements of series?

Q 20 Why most of the transition elements and their compound are colour in solid state or aq. Solution?

Q21 Define lanthanoid contraction ? Give its causes and it's consequences.

Q22 Explain variation of atomic radii along series ?

Q23 write Assignment of for Formula of solution,electrochemistry and chemical kinetics unit

Biology

Given below is the diagram of CuT, commonly used contraceptive method based on the information answer the following questions:

a. a mother of one year old daughter wanted to space her child her doctor suggested CuT.Explain its contraceptive actions.

b. Bring out one main difference between copper tea and LNG- 20

c. a newly married couple doesn't want to produce children at least for one year and also not to use any contraceptives suggest a method to prevent pregnancy

2. Draw a diagrammatic sectional view of a mature anatropous ovule and label the following parts in it
   a. that develops into an endosperm in an albuminous seed
   b. through which the pollen tube grains entry into the embryo sac
   c. through which the pollen tube grains entry into the embryo sac that attaches the ovule to the placenta

3. a. Draw a diagrammatic sectional view of a human seminiferous tubule and labelsertoli cells ,primary spermatocytes,spermatogonium and spermatozoa in it
   b. Explain the hormonal regulation of the process of spermatogenesis in human

Physical Education

Work Specification (15 days): Do fitness exercise for your physical efficiency and for being physically fit.

Work Specification (15 days): Project Work

Materials required: One file or spiral note book for project, Text Book, Writing and Drawing materials, internet and library support, covering materials, Reference books, photographs where applicable.

Guidelines:
   ❖ Select one project of your choice
   ❖ Organize your writing material
   ❖ Write in your own handwriting in the file as computer print-outs are not allowed
   ❖ Sub-headings: Title, acknowledgement, index, content
   ❖ Write rules and regulations of the game, cups, trophies, tournaments and famous player's name.
   ❖ Cover the file
   ❖ Write the project title, your name, name of the school and year.