THE S D VIDYA SCHOOL, NOIDA

SUMMER HOLIDAY HOMEWORK (2024-25)

CLASS – XI A

Dear students,

"Self-belief and hard work will always earn you success."

Holidays provide a much-needed respite from the daily routine and academic pressure. It allows you to unwind, spend quality time with family and friends, and engage in activities you love. Balancing holidays and studies is a crucial aspect of a student's life. While they are meant for relaxation and enjoyment, it is equally important to maintain a certain level of focus on studies during these breaks. By setting realistic goals and creating a conducive study environment, you can effectively utilize holidays to consolidate knowledge, enhance skills, and stay academically on track. Moreover, incorporating breaks and leisure activities into your study routine can help to maintain focus, reduce stress, and make study sessions more productive. Ultimately, by finding the right balance between holidays and studies you can enjoy the break while also making progress in your academic journey.

KEEP IN MIND TO:

- Pray to the Almighty daily and thank Him for the blissful life that you enjoy.
- Give prime importance to your health.
- Set and maintain a routine at home. Be a good time manager.
- Practice positive thinking and be grateful for what we have.
- Relax, listen to music, or read books.
- Be a helping hand to your parents and learn the skill of shared responsibility.

MOST IMPORTANT:

- Make sure that all the syllabus done by May is revised thoroughly.
- Complete the assignments.

REMEMBER:

"THE FUTURE BELONGS TO THE COMPETENT. GET GOOD, GET BETTER, BE THE BEST!"

Wishing all the students a joyful learning and happy holidays.

ENGLISH

ASSIGNMENT I- (PROJECT)
TITLE: The Laburnum Top-An Analysis (by Ted Hughes)

Make a Project File defining and illustrating the analysis of the poem 'The Laburnum Top' by Ted Hughes. The project must include the following content in the same sequence-

1. Title of the project

2. Certificate

3. Acknowledgement

4. Index

5. Introduction to the

topic

6. About the poet

7. Analysis on the poem's theme/s

8. Poetic devices in the poem

9. Summary of the poem

10. Conclusion and reflection on the significance of the poem

11. Bibliography/References

Note:
- You may display your creative vigour.
- Cover the file with a light/dark green colour sheet.
- The file's cover must have the title of the project written on it.
- You may use a file of your choice with A4 size sheets.
- The first page of the file must have the name, class, section, roll number of the student along with the title.

ASSIGNMENT II – (CREATIVE WRITING SKILLS)

To be done in the Literature register-
Paste/sketch a picture of your grandmother (maternal and/or paternal) and write her character sketch with the heading-The Portrait of my Grandmother.

To be done in the Writing Skills register-
Design a poster in not more than 50 words about the need for regular exercise. You may use slogans.

PHYSICS

Make a investigatory project on any topic from syllabus of class XI.
Complete the given assignment in your notebook.

ASSIGNMENT

Choose the correct option-

1) A body covers 16, 18, 20, 22 meters in 5th, 6th, 7th and 8th seconds respectively. Which of the following statements is true about the body?
   - (a) The body moves with a uniform velocity from rest
   - (b) The body from rest moves with uniform acceleration
   - (c) The body moves with an initial velocity and moves with uniform acceleration
   - (d) The body moves with an initial velocity and then moves with uniform velocity

2) What can be said about the displacement of the body if it covers a distance of zero?
   - (a) It is zero
   - (b) It cannot be zero
   - (c) It may or may not be zero
   - (d) It is negative

3) Which of the following remains constant if a body travels with constant acceleration?
   - (a) Time
   - (b) Velocity
   - (c) Displacement
   - (d) None of the above

4) A truck travels a distance from A to B at a speed of 40km/h and returns to A at a speed of 50 km/h, then the average velocity of the whole journey nearly is:
   - (a) 30 km/h
   - (b) Zero
   - (c) 35 km/hr
   - (d) 40km/hr

5) Assertion (A): If the speed of a particle is never zero then it may have zero average speed.
   Reason (R): The average speed of a moving object in a closed path is zero.
   - (a) Both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.
   - (b) Both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.
   - (c) The Assertion is correct but the Reason is incorrect.
   - (d) Both the Assertion and Reason are incorrect.

6) Dimensional analysis can be applied to
   - (a) to check the correctness of a physical equation.
   - (b) to derive the relationship between different physical quantities.
   - (c) to convert a physical quantity from one system of units to other.
   - (d) All of the above

7) Which of the following is dimensionless
   (a) force/acceleration
   (b) velocity/acceleration
   (c) volume/area
   (d) energy/work

8) If x = a + bt + ct^2, where x is in metre and t in second, then what is the unit of 'c'?
   (a) m/s
   (b) m/s^2
   (c) kgm/s
   (d) m^2/s

9) Which of the following is not the unit of time
   (a) second
   (b) minute
   (c) month
   (d) light year

10) The number of significant figures in the number 0.0028 is,
   (a) 2
   (b) 3
   (c) 4
   (d) 5

Answer the questions given below-
11) Derive all the three equations of motion by
   (a) Graphical method
   (b) calculus method

12) The third equation of motion is: v^2=u^2+2as.
   Check if it is dimensionally correct or not.

13) If momentum (P), area (A) and time (T) are taken to be fundamental   quantities, then what will be the dimensional formula of energy?

14) Give an example of
   (a) a physical quantity which has a unit but no dimensions.
   (b) a physical quantity which has neither unit nor dimensions.
   (c) a constant which has a unit.
   (d) a constant which has no unit.

15) The position coordinate of a moving particle is given by
   $$x = 5t^2-4t+6 \text{ (x is in meters and t is in seconds).}$$
   (a) What is its velocity?
   (b) Find initial velocity.
   (c) Find acceleration.
   (d) Find velocity at t=2sec

CHEMISTRY

Make a short video on the topic Elements in Periodic Table.
Complete the given assignment in your notebook

Q.I   Choose the correct answer:
1.   What will be the molarity of a solution, which contains 5.85 g of NaCl(s) per 500 mL?
(i) 4 mol L–1
(ii) 20 mol L–1
(iii) 0.2 mol L–1
(iv) 2 mol L–1
2.   If 500 mL of a 5M solution is diluted to 1500 mL, what will be the molarity of the solution obtained?
(i) 1.5 M
(ii) 1.66 M
(iii) 0.017 M
(iv) 1.59 M
3.   What will be the molality of the solution containing 18.25 g of HCl gas in 500 g of water?
(i) 0.1 m
(ii) 1 M
(iii) 0.5 m
(iv) 1 m
4.   Which of the following solutions have the same concentration? (a) 20 g of NaOH in 200 mL of solution (b) 0.5 mol of KCl in 200 mL of solution (c) 40 g of NaOH in 100 mL of solution (d) 20 g of KOH in 200 mL of solution
(i)a & b
(ii)b & c
(iii)a & c
(iv)a & d
5.   Assertion (A) : The empirical mass of ethene is half of its molecular mass.
Reason (R) : The empirical formula represents the simplest whole number ratio of various atoms present in a compound.
(i) Both A and R are true and R is the correct explanation of A.
(ii) A is true but R is false.
(iii) A is false but R is true.
(iv) Both A and R are false.
6.   Assertion (A) : Combustion of 16 g of methane gives 18 g of water.
Reason (R) : In the combustion of methane, water is one of the products.
(i) Both A and R are true but R is not the correct explanation of A.
(ii) A is true but R is false.
(iii) A is false but R is true.
(iv) Both A and R are false.
7.   The empirical formula and molecular mass of a compound are CH2O and 180 g respectively. What will be the molecular formula of the compound?
(i) C9H18O9
(ii) CH2O
(iii) C6 H12O6
(iv) C2H4O2
8.   What is the mass percent of carbon in carbon dioxide?
(i) 0.034%
(ii) 27.27%

(iii) 3.4%
(iv) 28.7%
9. What will be the molality of the solution containing 18.25 g of HCl gas in 500 g of water?
    (i) 0.1 m
    (ii) 1 M
    (iii) 0.5 m
    (iv) 1 m
10. If the concentration of glucose ($C_6H_{12}O_6$) in blood is 0.9 g L–1, what will be the molarity of glucose in blood?
    (i) 5 M
    (ii) 50 M
    (iii) 0.005 M
    (iv) 0.5 M

Q.II Answer the following:
1   Why molality is preferred over molarity in expressing the concentration of a solution?
2   Define empirical and molecular formula. What is the relationship between them?
3   The density of 3 molal solution of NaOH is 1.110 g mL–1. Calculate the molarity of the solution.
4   Volume of a solution changes with change in temperature, then, will the molality of the solution be affected by temperature? Give reason for your answer.
5   If 4 g of NaOH dissolves in 36 g of H2O, calculate the mole fraction of each component in the solution. Also, determine the molarity of solution (specific gravity of solution is 1g mL–1).
6   Calcium carbonate reacts with aqueous HCl to give CaCl2 and CO2 according to the reaction given below: CaCO3 (s) + 2HCl (aq) □→ CaCl2(aq) + CO2(g) + H2O(l)
    What mass of CaCl2 will be formed when 250 mL of 0.76 M HCl reacts with 1000 g of CaCO3? Name the limiting reagent. Calculate the number of moles of CaCl2 formed in the reaction
7   Calculate the mass percent of calcium, phosphorus and oxygen in calcium phosphate.
8   Hydrogen gas is prepared in the laboratory by reacting with dil.HCl with granulated zinc.Following reaction takes place:
        Zn + 2HCl ⟶ $ZnCl_2$ + H_2
    Calculate the volume of hydrogen gas liberated at STP when 32.65 g of zinc reacts with HCl.1 mol of a gas occupies 22.7 L volume at STP ; atomic mass of Zn = 65.3 u.
9   An organic liquid having carbon,hydrogen,nitrogen and oxygen was found to contain C= 41.37%, H = 5.75 %, N= 16.09 % and rest is oxygen. Find the molecular formula if its vapour density is 43.3
10 5.6 litres of methane gas are ignited in oxygen gas .Calculate the number of moles of CO_2 formed.

BIOLOGY

Make a investigatory project on any topic from syllabus of class XI .
Complete the given assignment in your notebook

WORKSHEET-PLANT KINGDOM

1   In a monoecious plant
    (a) Male and female sex organs are on the same individual
    (b) Male and female gametes are of two morphologically distinct types
    (c) Male and female sex organs are on different individuals
    (d) All the stamens are fused to form one unit

2   The seedless vascular plants whose sporophytes are larger than their
    small and independent gametophytes are
    (a) Pteridophytes
    (b) Angiosperms
    (c) Gymnosperms
    (d) None of these

3   Which of the following is used to grow microbes?
    (a) Laminaria
    (b) Gelidium
    (c) Chlorella
    (d) Sargassum

4   Gymnosperms produce neither flower nor fruit because they do not
    possess
    (a) Embryo
    (b) Ovary
    (c) Ovule
    (d) Seed

5   Rhodophyceae is called red algae because of the pigment
    (a) Fucoxanthin
    (b) Phycoerythrin
    (c) Carotenoids
    (d) Chlorophyll c

6   In gymnosperms, the development of pollen grains occurs in
    (a) Strobili
    (b) Microsporangia
    (c) Megasporangia
    (d) Macrosporangia

7   Which is the common characteristic of multicellular fungi, filamentous
    algae and protonema of mosses?
    (a) Mode of nutrition
    (b) Diplontic life cycle
    (c) Multiplication by fragmentation
    (d) Members of Plant Kingdom

8   An alga that can be employed as food for the human being is:
     (a) Ulothrix
     (b) Chlorella
     (c) Spirogyra
     (d) Polysiphonia

9   Which of the following is not a characteristic feature of bryophytes?
     (a) presence of archegonia
     (b) water is essential for fertilization
     (c) an independent photosynthetic sporophyte
     (d) motile sperms

10   Water is essential for the life cycle of Funaria because
     (a) it will dry without water
     (b) fertilization takes place in water
     (c) it is a hydrophyte
     (d) the growth will remain stunted in the absence of water

11. A moss differs from a fern in having
     (a) swimming sperms
     (b) alternation of generation
     (c) dependent gametophyte
     (d) independent gametophyte

12   Which of the following has a dominant sporophytic generation?
     (a) Dryopteris
     (b) Funaria
     (c) Spirogyra
     (d) Liverworts

13   Carpels of angiosperms are equivalent to
     (a) sporophyll
     (b) sporangia
     (c) spore
     (d) zygospore

14   Pick the mismatched pair
     a) Cycas – Dioecious
     b) Equisetum – Homosporous
     c) Salvinia – Heterosporous
     d) Pinus – Dioecious

15   The asexual spores are not found, vegetative reproduction occurs by
     fragmentation and sexual organs are absent. Identify the class of fungi.
     a) Phycomycetes
     b) Ascomycetes
     c) Basidiomycetes
     d) Deuteromycetes

     SHORT QUESTION ANSWER
1.   Food is stored as floridean starch in Rhodophyceae. Mannitol is the
     reserve food material of which group of algae?

2. Give an example of plants with
   (a) Haplontic life cycle
   (b) Diplontic life cycle
   (c) Haplo-diplontic life cycle
3. The heterosporous pteridophytes show certain characteristics, which are precursor to the seed habit in gymnosperms. Explain.
4. How are the male and female gametophytes of pteridophytes and gymnosperms different from each other?
5. Explain briefly the following terms with suitable examples.
   (i) Protonema (ii) Antheridium
   (iii)Archegonium (iv) Diplontic (v) Sporophyll (vi) Isogamy
6. The plant body in higher plants is well differentiated and well developed. Roots are the organs used for the purpose of absorption. What is the equivalent of roots in the less developed lower plants?
7. In which plant will you look for mycorrhiza and corolloid roots? Also explain what these terms mean.
8. Gametophyte is a dominant phase in the life cycle of a bryophyte. Explain.
9. Lichen is usually cited as an example of 'symbiosis' in plants where an algal and a fungal species live together for their mutual benefit. Which of the following will happen if algal and fungal partners are separated from each other?
   (a).Both will survive and grow normally and independent from each other.
   (b).Both will die
   (c).Algal component will survive while the fungal component will die.
   (d).Fungal component will survive while algal partner will die.
   Based on your answer how do you justify this association as symbiosis.
10. Draw labelled diagrams of
   (a) Female and male thallus of a liverwort.
   (b) Gametophyte and sporophyte of Funaria.

Mathematics

Project work:

Prepare a project file on Venn Diagram.

ASSIGNMENT (To be done in class notebook)

Chapter 1 Sets

1. Draw the Venn diagrams to illustrate the following relationship among sets, E, M and U, where E is the set of student studying English in a school, M is the set of students studying Mathematics in the same school, U is the set of all students in that school.

   (i) All the students who study Mathematics study English, but some students who study English do not study Mathematics.

   (ii) There is no student who studies both Mathematics and English.

   (iii) Some of the students Mathematics but do not study English. Some study English but do not Mathematics, and some study both.

   (iv) Not all students study mathematics, but every student studying English studies Mathematics.

2. In a examination, 80% students passed in Mathematics, 72% passed in science and 13% failed in both the subjects, if 31 students passed in both the subjects. Find the total number of students who appeared in the examination.

3. Out of 1020 boys in a school, 406 play cricket 324 play hockey and 250 play football, 80 boys play cricket and hockey, 64 play hockey and football, 92 play football and cricket while 30 play all the three games. How many boys play

   (i)   None of the three games?

   (ii) Almost two games?

   (iii) Hockey and football but not cricket?

4. A collage awarded 38 medals in football, 15 in basketball and 20 in cricket. If these medals went to a total of 58 men and only three men got medals in all these sports, how many received medals inexactly two of the three sports ?

5. In a survey it was found that 21 people liked product A, 26 liked product B and 29 liked product C. If 14 people liked products B and C and 8 liked all the three products.
   Find how many liked product C only.

Chapter 2 Relation and Functions

1. Find the domain of each of the following real valued functions:

(i) $f(x) = \frac{1}{x+2}$

(ii) $f(x) = \frac{x-1}{x-3}$

(iii) $f(x) \frac{2x-3}{x^2-3x+2}$

(iv) $f(x) = \frac{x^2+3x+5}{x^2-5x+4}$

2. Find the domain of each of the following functions:

(i) $f(x) = \sqrt{x-2}$ (ii) $f(x) = \frac{1}{\sqrt{1-x}}$

(iii) $f(x) = \sqrt{4-x^2}$

3. Find the domain of the function $f(x)$ defined by $f(x) = \sqrt{4-x} + \frac{1}{\sqrt{x^2-1}}$.

4. Find the domain and range of the functions $f(x)$ given by $f(x) = \frac{x-2}{3-x}$.

5. Find the range of each of the following functions:

(i) $f(x) = \; = \frac{1}{\sqrt{x-5}}$

(ii) $f(x) = \sqrt{16-x^2}$

(iii) $f(x) = \frac{x}{1+x^2}$

(iv) $f(x) = \frac{3}{2-x^2}$

6. Find the domain and range of the function $f(x) = \frac{x^2-9}{x-3}$.

7. Find the domain and range of the real valued function $f(x)$ given by $f(x) \frac{4-x}{x-4}$.

8. Let f= $\left\{\left(x, \frac{x^2}{1+x^2}\right): x \in R\right\}$ be a function from R into R. Determine the range of f.

9. Find the domain and range of the function $f = \left\{\left(x: \frac{1}{1-x^2}\right): x \in R, x \neq \pm 1\right\}$.

10. Find the domain and range of the function $f(x) = \frac{1}{2-\sin 3x}$.

11. Find the domain of each of the following real valued functions of real variable:

(i) $f(x) = \frac{1}{x}$

(ii) $f(x) = \frac{1}{x-7}$

(iii) $f(x) = \frac{3x-2}{x+1}$

(iv) $f(x) \frac{2x+1}{x^2-9}$

(v) $f(x) = \frac{x^2+2x+1}{x^2-8x+12}$

12. Find the domain of each of the following real valued functions of real variable:

(i) $f(x) = \sqrt{x-2}$

(ii) $f(x) = \frac{1}{\sqrt{x^2-1}}$

(iii) $f(x) = \sqrt{9-x^2}$

(iv) $f(x) = \sqrt{\frac{x-2}{3-x}}$

13. Find the domain and range of each of the following real valued functions:

(i) $f(x) = \frac{ax+b}{bx+a}$

(ii) $f(x) = \frac{ax-b}{cx-d}$

(iii) $f(x) \sqrt{x-1}$

(iv) $f(x) = \sqrt{x-3}$

(v) $f(x) = \frac{x-2}{2-x}$

(vi) $f(x) = |x-1|$

(vii) $f(x) = - |x|$

(viii) $f(x) = \sqrt{9-x^2}$

(ix) $f(x) = \frac{1}{\sqrt{16-x^2}}$ $\qquad$ (x) $f(x) = \sqrt{x^2 - 16}$

Chapter 3 Trigonometry

1. If $5 \sin x = 3$, then find the value of $\frac{\sec x - \tan x}{\sec x + \tan x}$,

2. If $\sin(A+B) = \frac{\sqrt{3}}{2}$, $\cos(A-B) = \frac{\sqrt{3}}{2}$, *then find* A and B if they lie in the first quadrant.

3. Find the value of $\quad 2\sin^2 \frac{3\pi}{4} - 2\tan^2 \frac{3\pi}{4}$.

4. If $2\cos\theta = a + \frac{1}{a}$, *then find the value of* $2\cos 2\theta$.

5. Write the value of $\sqrt{2 + \sqrt{2 + 2\cos\theta}}$ *in the simplest form*.

6. Prove that : $\sqrt{2 + \sqrt{2 + 2\cos 4x}} = 2\cos x, 0 < x < \frac{\pi}{4}$.

7. Prove that $\cos 20° \cos 40° \cos 80° = \frac{1}{8}$.

8. Prove that : $16 \sin^5\theta - 20 \sin^3\theta + 5\sin\theta = \sin 5\theta$

9. Prove that : $\cos^4 \frac{\pi}{8} + \cos^4 \frac{3\pi}{8} + \cos^4 \frac{7\pi}{8} = \frac{3}{2}$.

10. $\qquad$ Prove that : $\frac{1 = \sin x - \cos x}{1 + \sin x + \cos x} = \tan \frac{x}{2}$.

11. $\qquad$ Find the value of m sin $\quad$ x $\quad + \quad$ n $\quad$ cos $\quad$ x , If $\tan \frac{x}{2} = \frac{m}{n}$.

12. $\qquad$ Find the value of $\tan \frac{\pi}{8}$.

13. $\qquad$ Find the value of $\sin \frac{\pi}{18} = \sin \frac{\pi}{9} + \sin \frac{2\pi}{9} + \sin \frac{5\pi}{18}$.

14. $\qquad$ Prove that : $\frac{\sec 8x - 1}{\sec 4x - 1} = \frac{\tan 8x}{\tan 2x}$

15. $\qquad$ Prove that : $\cos^2 x + \cos^2 (x + \frac{\pi}{3}) + \cos^2(x - \frac{\pi}{3}) = \frac{3}{2}$

16. $\qquad$ Prove that : $\sin 3x + \sin 2x - \sin x = 4 \sin x \cos \frac{x}{2} \cos \frac{3x}{2} x$

17. $\qquad$ If $\tan x = \frac{3}{4}$, $\pi < x < \frac{3\pi}{2}$, *find the value of* $\sin \frac{x}{2}$, $\cos \frac{x}{2}$, $\tan \frac{x}{2}$.

18. $\qquad$ Find the value of : $\cos \frac{\pi}{5} \cos \frac{2\pi}{4} \cos \frac{4\pi}{5} \cos \frac{8\pi}{5}$ 5x

19. $\qquad$ Prove that : $\cos 2x \cdot \cos \frac{x}{2} - \cos 3x \cdot \cos \frac{9x}{2} = \sin 5x \sin \frac{5x}{2}$ $\qquad$.

20. $\qquad$ Prove that : $\sin^3 x + \sin^3 (\frac{2\pi}{3} + x) + \sin^3 (\frac{4\pi}{3} + x) = -\frac{3}{4} 3x$

PHYSICAL EDUCATION

ASSIGNMENT I-

Draw and collect pictures related to various sports careers and further each groups will explain in detail about

one career and like wise .THIS activity can also be done in groups and in individual basis too.

• Suggested Links:-

• https://www.embibe.com/exams/career-in -physical-education/

• https://www.sportskeeda.com/cricket/the -science-behind-the -glowing-students-and-bails-in-cricket

• You have to do any five asanas and clicking the pictures and make a collage. Please send to me (Ranjan Thakur) on my personal WhatsApp number. (For 21 June International Yoga day)

ASSIGNMENT II-

1. Define Physical Education according to Brownell.
2. What is aim of Physical Education?
3. What is health related career in PE?
4. Define soft skill in PE.
5. Outline the objectives of PE.
6. Briefly discuss the changing trends in PE.
7. Explain in detail the coaching career in PE.
8. Discuss the health related & administrative related career inn deal.
9. Write a short note on career in book writing, sports photography and sports industry.
10. Describe the various physical education courses available in India.