THE S D VIDYA SCHOOL, NOIDA

SUMMER HOLIDAY HOMEWORK (2023-24)

CLASS XIA

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.

CHEMISTRY

Make a short video on the topic Elements in Periodic Table.

Complete the given assignment in your notebook
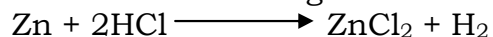
Q.I   Choose the correct answer:
1.   What will be the molarity of a solution, which contains 5.85 g of NaCl(s) per 500 mL?
      (i) 4 mol L–1
      (ii) 20 mol L–1
      (iii) 0.2 mol L–1
      (iv) 2 mol L–1
2.   If 500 mL of a 5M solution is diluted to 1500 mL, what will be the molarity of the solution 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:

$$Zn + 2HCl \longrightarrow ZnCl_2 + H_2$$

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 PPT of the diseases discussed in class also prepare questionnaire for the patients of the particular disease.

WORKSHEET-1

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 mismatchedpair
   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

WORKSHEET-2
PLANT KINGDOM
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 symbios
10. Draw labelled diagrams of
    (a) Female and male thallus of a liverwort.
    (b) Gametophyte and sporophyte of Funaria.

PHYSICS
Make a power point presentation of at least 5 slides on the topic allocated in the class.
Make an investigatory project on any topic of your choice as per the guidelines of CBSE.

Complete the given assignments in your notebook.

1. The number of significant figures in 0.06900 is
a) 5   b) 4   c) 2   d) 3

2. The sum of the numbers 436.32, 227.2 and 0.301 in appropriate significant figures is
a) 663.821   b) 664   c)663.8   d)663.82

3. The mass and volume of a body are 4.237 g and 2.5 cm^3 , respectively. The density of the material
of the body in correct significant figures is
a) 1.6048 g cm^{-3}
b)1.69 g cm^{-3}
c)1.7 gcm^{-3}
d)1.695 g cm^{-3}

4. The numbers 2.745 and 2.735 on rounding off to 3 significant figures will give
a) 2.75 and 2.74   b) 2.74 and 2.73
c)2.75 and 2.73   d) 2.74 and 2.74

5. The length breadth and thickness of a rectangular sheet of metal are 4.234 m,1.005 m and 2.01 cm respectively. Give the area and volume of the sheet to correct significant figures.

6. The mass of a box measured by a grocer's balance is 2.3 kg. Two gold pieces of masses 20.15 g and 20.17 g are added to the box. What is (a) the total mass of the box (b) the difference in the masses of the pieces to correct significant figures ?

7. Round off the following numbers as indicated
i) 18.35 upto 3 digits   ii) 143.45 upto 4 digits
iii)18967 upto3 digits   iv) 12.653 upto 3 digits
v)248337 upto 3 digits   vi)321.135 upto 5 digits
vii)101.55 x10^6 upto 4 digits   viii) 31.325 x 10^{-5}upto 4 digits

8. Solve the following and express the result to an appropriate number of significant figures
i) Add 62g,4.33 g and 17.456 g.
ii) Subtract 63.54 kg from 187.2 kg
iii) 75.5 x125.5 x 0.51

9. Each side for a cube is measured to be 7.203 m. What are the total surface area and the volume of the cube to appropriate significant figures?

10. The length and the radius of a cylinder measured with slide calipers are found to be 4.54 cm and 1.75 cm respectively. Calculate the volume of the cylinder.

11. 5.74 g of a substance occupies 1.2 cm3. Express its density keeping significant figures in view.

12. Subtract 2.5 x10^4 from 3.9 × 10^7 with due regard to significant figures.

13. Which of the following pairs of physical quantities does not have same dimensional formula?
a) Work and torque b) angular momentum and Planck's constant
c) Tension and surface tension d) Impulse and linear momentum

14. Photon is quantum of radiation with energy E =hv, where v is frequency and h is Planck's constant. The dimensions of h are the same as that ofa) Linear impulse b) Angular impulse c) Linear momentum d) Angular momentum.

15. If the unit of force is 100 N, unit of length is 10 m and unit of time is 100 s, what is the unit ofmass in this system of units?

16. 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

17. The displacement of a progressive wave is represented by y = A sin (wt-kx), where x is distance and tis time. Write the dimensional formula of (i) w and (ii) k.

18. A new system of units is proposed in which unit of mass is kg, unit of length m and unit of times. How much will 5 J measure in this new system?

PHYSICAL EDUCATION
Draw and collect pictures related to various sports careers and further each groups will explain in detail about one career and likewise .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 InternationalYoga day)

WORKSHEET

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.

ENGLISH

ASSIGNMENT I-

(PROJECT WORK)

<u>**TOPIC**</u>: **A Photograph-An Analysis (by Shirley Toulson)**

- Make a Project File defining and illustrating the analysis of the poem 'A Photograph' by Shirley Toulson.

The project must include the following in the same sequence-

1.Title of 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 'A Photograph'

11.Bibliography / References

- You may display your creative vigour.

<u>**ASSIGNMENT II –**</u>

(CREATIVE WRITING SKILLS)

- To be done in the Literature register

  1) Paste a picture of your grandmother(maternal and paternal) and present their character sketches.

- To be done in the Writing Skills register

1)Principal, Sunrise Global School, Agra requires a receptionist for her school. Draft a suitable advertisement in about 50 words to be published in the

classified columns of a national newspaper giving all the necessary details of qualifications and experience required in the receptionist.

2) You are Harish/Harshita of 12, Seva Nagar, Pune. You want to sell your flat as you are shifting to another city for work. Draft a suitable advertisement in not more than 50 words to be published in The Pune Times under the classified columns.

MATHEMATICS

1   Let U = {1,2,3,4,5,6,7}, A = {2,4,6}, B = {3, 5} and C= {1,2,4,7}, verify that:

(i) (AUB)UC = AU(BUC) ii) A∩ (BUC) = (A ∩ B) U (A∩ C)

2   In a group of 50 people, 35 speak Hindi, 25 speak both English and Hindi and all the people speak at least one of the two languages. How many people speak in English and not Hindi? How many people can speak English?

3   In a survey of 100 people, it was found that 28 read magazine A, 30 read magazine B, 42 read magazine C, 8 read magazines A and B, 10 read magazines A and C, 5 read magazines B and C and 3 read all three magazines.

Find

i) how many read at least one of the three magazines

ii) how many read magazine C only?

4   If P = {1,2,3,4}, Q ={2,4,6,8} and R= {3,4,5,6} find P∩(Q∪R)

5   Find the power set of {a, b, c}.

6   Let A= {9,10,11,12,13} and let f: A → N be defined by f(□) =the highest prime factor of n. Find the range of f.

7   Let f = {(-1, -8), (1, -2), (2,1), ...} be a function from Z to Z defined by   f(x) = px + q, for some integers p and q. Determine p and q.

8   Let f: R → R be given by $f(x) = x^2+3$

Find

(i) {x: $f(x)$ = 28}

(ii) The pre-images of 39 and 2 under 'f'.

9   Find the domain and range of $f(x) = x-2/x-1$

10   Prepare a project file on Venn Diagram Ch-1(Sets).