SD DAV PUBLIC SCHOOL, JAMTARA

Summer Vacation Assignment (2026-27)

Class: - XI (SCIENCE)

SUBJECT: ENGLISH

Assignment 1
Prepare a write up on nurturing relationship as essence of human life.

Assignment 2
Collect information about Holland War, its causes & consequences & prepare a write up on it.

Assignment 3
Collect information from reliable sources about the country Armenia &Garoghlanian tribe& its unique strength. Develop a write up in your own expression.

Assignment 4
Prepare Tense Chart on a chart paper using multiple ink giving examples of each structure with positive, negative and interrogative sentences.

Assignment 5
On chart papers prepare Bio sketches of the authors – Khushwant Singh, Marga Minco, Sherly Toulson & Vikram Seth. Use variety of colourful ink for beautification.

Assignment 6
Narrate your experiences of spending vacation time with holiday tours and travels replete in new places with new people and new food cuisines.

SUBJECT: PHYSICS

A. Choose the correct option of the following questions. Also write the procedures.

1. The unit of thermal conductivity is
   (a) $W\ m^{-1}\ K^{-1}$ (b) $J\ m\ K^{-1}$
   (c) $J\ m^{-1}\ K^{-1}$ (d) $W\ m\ K^{-1}$

2. The damping force on an oscillator is directly proportional to the velocity. The units of the constant of proportionality are
   (a) $kg\ m\ s^{-1}$ (b) $kg\ m\ s^{-2}$
   (c) $kg\ s^{-1}$ (d) $kg\ s$

3. The unit of permittivity of free space, ε_0, is
   (a) coulomb/newton-metre
   (b) newton-metre^2/coulomb^2
   (c) coulomb^2/newton-metre^2
   (d) coulomb^2/(newton-metre)^2

4. A physical quantity P is related to four observations a, b, c and d as follows:
   $P = a^3b^2 / c\sqrt{d}$
   The percentage errors of measurement in a, b, c and d are 1%, 3%, 2% and 4% respectively. The percentage error in the quantity P is
   (a) 13% (b) 15%
   (c) 10% (d) 2%

5. The errors in the measurement which arise due to unpredictable fluctuations in temperature and voltage supply are
   (a) Least count errors (b) Random errors
   (c) Instrumental errors (d) Personal errors.

6. A metal wire has mass (0.4 ± 0.002) g, radius (0.3 ± 0.001) mm and length (5 ± 0.02) cm. The maximum possible percentage error in the measurement of density will nearly be
   (a) 1.6% (b) 1.4%
   (c) 1.2% (d) 1.3%

7. In an experiment, the percentage of error occurred in the measurement of physical quantities A, B, C and D are 1%, 2%, 3% and 4% respectively. Then the maximum percentage of error in the measurement X, where $X = \frac{A^2B^{1/2}}{C^{1/3}D^3}$, will be
   (a) 10% (b) (3/13)%
   (c) 16% (d) –10%

8. In an experiment, four quantities a, b, c and d are measured with percentage error 1%, 2%, 3% and 4% respectively. Quantity P is calculated as follows $P = \frac{a^3b^2}{cd}$. % error in P is
   (a) 7% (b) 4% (c) 14% (d) 10%

9. A student measures the distance traversed in free fall of a body, initially at rest, in a given time. He uses this data to estimate g, the acceleration due to gravity. If the maximum percentage errors in measurement of the distance and the time are e_1 and e_2 respectively, the percentage error in the estimation of g is
   (a) $e_2 - e_1$ (b) $e_1 + 2e_2$
   (c) $e_1 + e_2$ (d) $e_1 - 2e_2$

10. If the error in the measurement of radius of a sphere is 2%, then the error in the determination of volume of the sphere will be
    (a) 8% (b) 2% (c) 4% (d) 6%

11. The density of a cube is measured by measuring its mass and length of its sides. If the maximum error in the measurement of mass and lengths are 3% and 2% respectively, the maximum error in the measurement of density would be
    (a) 12% (b) 14% (c) 7% (d) 9%

12. Percentage errors in the measurement of mass and speed are 2% and 3% respectively. The error in the estimate of kinetic energy obtained by measuring mass and speed will be
    (a) 8% (b) 2% (c) 12% (d) 10%.

13. A certain body weighs 22.42 g and has a measured volume of 4.7cc. The possible error in the measurement of mass and volume are 0.01 g and 0.1 cc. Then maximum error in the density will be
    (a) 22% (b) 2%
    (c) 0.2% (d) 0.02%.

14. The area of a rectangular field (in m^2) of length 55.3 m and breadth 25 m after rounding off the value for correct significant digit is :
(a) 138×10^1 (b) 1382
(c) 1382.5 (d) 14×10^2

15. Taking into account of the significant figures, what is the value of 9.99 m – 0.0099 m?
(a) 9.9801 m (b) 9.98 m
(c) 9.980 m (d) 9.9 m

16. The quantities which have the same dimensions as those of solid angle are
(a) strain and angle
(b) stress and angle
(c) strain and arc
(d) angular speed and stress

17. The dimensions $[MLT^{-2}A^{-2}]$ belong to the :
(a) magnetic flux
(b) self inductance
(c) magnetic permeability
(d) electric permittivity

18. Plane angle and solid angle have
(a) Units but no dimensions
(b) Dimensions but no units
(c) No units and no dimensions
(d) Both units and dimensions

19. If E and G respectively denote energy and gravitational constant, then $\frac{E}{G}$ has the dimensions of
(a) $[M^2][L^{-2}][T^{-1}]$ (b) $[M^2][L^{-1}][T^0]$
(c) $[M][L^{-1}][T^{-1}]$ (d) $[M][L^0][T^0]$

20. Dimensions of stress are
(a) $[MLT^{-2}]$ (b) $[ML^2T^{-2}]$
(c) $[ML^0T^{-2}]$ (d) $[ML^{-1}T^{-2}]$

21. The pair of quantities having same dimensions is
(a) Impulse and Surface Tension
(b) Angular momentum and Work
(c) Work and Torque
(d) Young's modulus and Energy

22. The dimensions of $(\mu_0\varepsilon_0)^{-1/2}$ are
(a) $[L^{1/2}T^{-1/2}]$ (b) $[L^{-1}T]$
(c) $[LT^{-1}]$ (d) $[L^{1/2}T^{1/2}]$

23. The dimension of $\frac{1}{2}\varepsilon_0 E^2$, where ε_0 is permittivity of free space and E is electric field, is
(a) ML^2T^{-2} (b) $ML^{-1}T^{-2}$
(c) ML^2T^{-1} (d) MLT^{-1}

24. If the dimensions of a physical quantity are given by $M^aL^bT^c$, then the physical quantity will be
(a) velocity if $a = 1, b = 0, c = -1$
(b) acceleration if $a = 1, b = 1, c = -2$
(c) force if $a = 0, b = -1, c = -2$
(d) pressure if $a = 1, b = -1, c = -2$

25. Which two of the following five physical parameters have the same dimensions ?
1. energy density 2. refractive index
3. dielectric constant 4. Young's modulus
5. magnetic field
(a) 1 and 4 (b) 1 and 5
(c) 2 and 4 (d) 3 and 5

26. Dimensions of resistance in an electrical circuit, in terms of dimension of mass M, of length L, of time T and of current I, would be
(a) $[ML^2T^{-2}]$ (b) $[ML^2T^{-1}I^{-1}]$
(c) $[ML^2T^{-3}I^{-2}]$ (d) $[ML^2T^{-3}I^{-1}]$

27. The ratio of the dimensions of Planck's constant and that of moment of inertia is the dimensions of
(a) time (b) frequency
(c) angular momentum
(d) velocity.

28. The dimensions of universal gravitational constant are
(a) $[M^{-1}L^3T^{-2}]$ (b) $[ML^2T^{-1}]$
(c) $[M^{-2}L^3T^{-2}]$ (d) $[M^{-2}L^2T^{-1}]$

29. The dimensions of Planck's constant equals to that of
(a) energy
(b) momentum
(c) angular momentum
(d) power.

30. Which pair do not have equal dimensions ?
(a) Energy and torque
(b) Force and impulse
(c) Angular momentum and Planck's constant
(d) Elastic modulus and pressure.

31. The dimensions of impulse are equal to that of
(a) pressure
(b) linear momentum
(c) force
(d) angular momentum

32. Which of the following dimensions will be the same as that of time?
(a) $\frac{L}{R}$ (b) $\frac{C}{L}$
(c) LC (d) $\frac{R}{L}$

33. The dimensions of RC is
(a) square of time (b) square of inverse time
(c) time (d) inverse time.

34. Which of the following has the dimensions of pressure?
(a) $[MLT^{-2}]$ (b) $[ML^{-1}T^{-2}]$
(c) $[ML^{-2}T^{-2}]$ (d) $[M^{-1}L^{-1}]$

35. Of the following quantities, which one has dimensions different from the remaining three ?
(a) Energy per unit volume
(b) Force per unit area
(c) Product of voltage and charge per unit volume
(d) Angular momentum.

36. The potential energy of a particle moving along x-direction varies as $V = \frac{Ax^2}{\sqrt{x}+B}$. The dimensions of $\frac{A^2}{B}$ are
(a) $[M^{3/2}L^{1/2}T^{-3}]$ (b) $[M^{1/2}LT^{-3}]$
(c) $[M^2L^{1/2}T^{-4}]$ (d) $[ML^2T^{-4}]$

37. The dimensional formula of magnetic flux is
(a) $[M^0L^{-2}T^{-2}A^{-2}]$ (b) $ML^0T^{-2}A^{-2}]$
(c) $[ML^2T^{-2}A^{-1}]$ (d) $[ML^2T^{-1}A^3]$

38. The dimensional formula of permeability of free space μ_0 is
(a) $[MLT^{-2}A^{-2}]$ (b) $[M^0L^1T]$
(c) $[M^0L^2T^{-1}A^2]$ (d) none of these.

39. According to Newton, the viscous force acting between liquid layers of area A and velocity gradient $\Delta v/\Delta Z$ is given by $F = -\eta A\frac{\Delta v}{\Delta Z}$, where η is constant called coefficient of viscosity. The dimensional formula of η is
(a) $[ML^{-2}T^{-2}]$ (b) $[M^0L^0T^0]$
(c) $[ML^2T^{-2}]$ (d) $[ML^{-1}T^{-1}]$.

40. Dimensional formula of self inductance is
(a) $[MLT^{-2}A^{-2}]$ (b) $[ML^2T^{-1}A^{-2}]$
(c) $[ML^2T^{-2}A^{-2}]$ (d) $[ML^2T^{-2}A^{-1}]$

41. The dimensional formula of torque is
(a) $[ML^2T^{-2}]$ (b) $[MLT^{-2}]$
(c) $[ML^{-1}T^{-2}]$ (d) $[ML^{-2}T^{-2}]$.

42. If C and R denote capacitance and resistance, the dimensional formula of CR is
(a) $[M^0L^0T^1]$ (b) $[M^0L^0T^0]$
(c) $[M^0L^0T^{-1}]$
(d) not expressible in terms of MLT.

43. The dimensional formula of angular momentum is
(a) $[ML^2T^{-2}]$ (b) $[ML^{-2}T^{-1}]$
(c) $[MLT^{-1}]$ (d) $[ML^2T^{-1}]$.

44. A balloon is made of a material of surface tension S and its inflation outlet (from where gas is filled in it) has small area A. It is filled with a gas of density ρ and takes a spherical shape of radius R. When the gas is allowed to flow freely out of it, its radius r changes from R to 0(zero) in time T. If the speed $v(r)$ of gas coming out of the balloon depends on r as r^a and $T \propto S^\alpha A^\beta \rho^\gamma R^\delta$ then
(a) $a = -\frac{1}{2}, \alpha = -\frac{1}{2}, \beta = -1, \gamma = \frac{1}{2}, \delta = \frac{7}{2}$
(b) $a = \frac{1}{2}, \alpha = \frac{1}{2}, \beta = -\frac{1}{2}, \gamma = \frac{1}{2}, \delta = \frac{7}{2}$
(c) $a = \frac{1}{2}, \alpha = \frac{1}{2}, \beta = -1, \gamma = +1, \delta = \frac{3}{2}$
(d) $a = -\frac{1}{2}, \alpha = -\frac{1}{2}, \beta = -1, \gamma = -\frac{1}{2}, \delta = \frac{5}{2}$

45. A force defined by $F = \alpha t^2 + \beta t$ acts on a particle at a given time t. The factor which is dimensionless, if α and β are constants, is
(a) $\frac{\beta t}{\alpha}$ (b) $\frac{\alpha t}{\beta}$ (c) $\alpha\beta t$ (d) $\frac{\alpha\beta}{t}$

46. If force $[F]$, acceleration $[A]$ and time $[T]$ are chosen as the fundamental physical quantities. Find the dimensions of energy.
(a) $[F][A^{-1}][T]$ (b) $[F][A][T]$
(c) $[F][A][T^2]$ (d) $[F][A][T^{-1}]$

47. A physical quantity of the dimensions of length that can be formed out of c, G and $\frac{e^2}{4\pi\varepsilon_0}$ is [c is velocity of light, G is the universal constant of gravitation and e is charge]
(a) $c^2\left[G\frac{e^2}{4\pi\varepsilon_0}\right]^{1/2}$ (b) $\frac{1}{c^2}\left[\frac{e^2}{G4\pi\varepsilon_0}\right]^{1/2}$
(c) $\frac{1}{c}G\frac{e^2}{4\pi\varepsilon_0}$ (d) $\frac{1}{c^2}\left[G\frac{e^2}{4\pi\varepsilon_0}\right]^{1/2}$

48. Planck's constant (h), speed of light in vacuum (c) and Newton's gravitational constant (G) are three fundamental constants. Which of the following combinations of these has the dimension of length ?
(a) $\frac{\sqrt{hG}}{c^{3/2}}$ (b) $\frac{\sqrt{hG}}{c^{5/2}}$
(c) $\sqrt{\frac{hc}{G}}$ (d) $\sqrt{\frac{Gc}{h^{3/2}}}$

SUBJECT: MATHEMATICS

CHAPTER: SETS AND COMPLEX NUMBERS

QUESTION SET (15 QUESTIONS, MODERATE TO COMPLEX LEVEL)

Section A: Sets

1) If A and B are sets, prove that A ∪ (A ∩ B) equals A.

2) Find the total number of subsets of a set containing exactly five elements.

3) If A is subset of B and B is subset of C, prove A is subset of C.

4) Determine whether a given relation on set A is reflexive, symmetric, and transitive.

5) Find the Cartesian product A × B where A = {1,2} and B = {3,4,5}.

6) Prove De Morgan's laws using Venn diagrams for three given sets A, B, and C.

If n(A)=20, n(B)=15, n(A∩B)=5, find n(A∪B) using the correct formula.

7) Define power set and find number of elements in power set of a given set.

Section B: Complex Numbers

8) Express the complex number 3 + 4i in polar form and find its modulus.

9) Find the multiplicative inverse of √5 + 3i.

10) if. $(1+i)^2/2-i$= x + it then find the value of x+y.

11) Definition of all the terms of sets related.

SUBJECT: CHEMISTRY

Solve these numerical questions of mole concept

1.Find the number of moles of H_2 in 10g of H_2.

2.How many moles is 12.044×10^{23} atoms of He.

3. how many moles are there in 52g of Helium.

4.What is the mass of of-

(a) 1 mole of nitrogen atoms?

(b) 4 moles of Aluminium atoms?

(c) 10 moles of sodium sulphite?

5.convert the following into moles-

(a) 12g of Oxygen Gas

(b) 20g of water

(c)22g of carbon dioxide

6.what is the mass of :

(a) 0.2g moles of oxygen atom?

(b) 0.5 moles of water molecules?

7. 3.42g of sucrose are dissolved in 18g of water in a beaker. Find the number of Oxygen atoms in the solution?

8. If one mole of carbon atoms weights 12g ,what is the mass in gram of 1 atom of carbon?

9. how many moles of magnesium phosphate will contain 0.25moles of oxygen atoms?

10. How many gram atoms of H and S are contained in 0.40 mole of H_2S?

11. Which has more number of atoms 100g of sodium or 100g of iron?

12.Calculate the number of moles and molecules in 22g of Acetic Acids?

13.24g of carbon react with some oxygen to make 88g of carbon dioxide. Find out the amount of Oxygen atoms used.

14.Calculate the number of water molecules in 0.06g of water.

15.Amixture having 2g of hydrogen and 32g of oxygen occupies how much volume at NTP?

SUBJECT: BIOLOGY

1.Identify the correctly written scientific name for mango species- Mangifera indica/Mangifera Indica.
2.Give a brief account of viruses concerning their structure and nature of genetic material. Also, name four common viral diseases.
3.What are the universal rules of nomenclature?
4.Who gave the binomial name of classification? Expand ICBN and ICZN.
5.Diatoms are also called ‘pearls of the ocean’. Why? What is diatomaceous earth?
6.Polluted water bodies contain plants like Nostoc and Oscillitoria. Give reasons.
7.Are chemosynthetic bacteria autotrophic or heterotrophic?
8.Why are cyanobacteria used in agricultural fields for crop improvement?
9.Explain the myth of ‘fairy rings’ created by the mushrooms after heavy rains in the forest.
10.Find out what the terms ‘algal bloom’ and ‘red tides’ signify.
11.State two economically important uses of:
(a) heterotrophic bacteria (b) archaebacteria
12How is the five-kingdom classification advantageous over the two-kingdom classification?
13.Define a taxon. Give some examples of taxa as different hierarchial levels.
14.Which group of Kingdom Fungi is called the “imperfect fungi” and why? Give any two characteristics of this group.
15..Name the following:
(I) The kingdom which comprises of organisms that synthesise their own food.
(II)The reserve food material in animals.
(III)The group of fungi that lack sexual phase in their life cycle.

(IV) The term given to the fungal component of the Lichens.
(V)The smallest living organisms that completely lack a cell wall.
16.Distinguish between Red, Brown and Green Algae.
Project-Study of Compound Microscope and Some specimen.

SUBJECT: IP

Q1. Write all the Questions with answer in a Practical file or Science Practical copy

(i) Write the output of the following codes given below:

(a)
```
Website = "xyz.com"
print(Website)
```

(b)
```
Website = "xyz.com"
print(Website)
Website = "abc.com"
print(Website)
```

(c)
```
a,b,c=5, 3.2, "Hello"
print(a)
print(b)
print(c)
```

(d)
```
x=y=z= "Same"
print(x)
print(y)
print(z)
```

(e)
```
a = 20 b = "Apples"
print(str(a)+ b)
```

(ii) Write the python code with output for the questions given below:

(a) To take length and breadth as input and calculate Area and Perimeter of a rectangle
(b) To take 3 sides of a triangle and calculate Area of a triangle
(c) Enter 3 subject marks and calculate average marks.
(d) Enter length, breadth and height and calculate surface area and volume of a cuboid .
(e) Enter the side of a square and calculate its area and perimeter
(f) Enter a number and calculate its square and cube.
(g) Enter distance in Kilometer and convert it to meter and cm.
(h) Enter temperature in degree Celsius and convert it into Fahrenheit.

(iii) Find the error and rewrite the code again by underlining all the corrections made.

(a)
```
A=10
B=20
C=a+b
print(C)
```

(b)
```
a=10
B=20
C=a/b
Print (c)
```

SUBJECT: PHY. EDU.

1. Rohan, a student of class XI has taken up physical education as he is very Interested in making his career in the field of Physical Education. When he Was introduced to the career options available in the subject he became a bit Hesitant about continuing in this field because for him physical education was Just about playing so he approached his subject teacher to explain his position. On the basis of the given information given below are a few queries of Rohan And you have to give him the reply according to the information provided to You in your first chapter.

(A) A child interested in reporting the sports event should further study_____.
(B) For making a future in Officiating a person should do _____ course.
(C) Teaching physical education to primary students requires _____ As qualification.
(D) Designing and researching sports equipment is related to _____.
(E) Sports journalism involves _____.

2. What is the plan of government under the vertical of 'Promotion of Sports Among Personswith Disabilities'?
3. Do you think 'Sports for Peace and Development' will work for restoration of peace in Jammu and Kashmir? Support your answer with evidence.
4. What is the vision and mission of Khelo India Programme?
5. Apart from a professional degree in Physical Education, what other key skills are required for opting for a career other than teaching?

Practical

1. Draw and write the ground measurement of any one the following games. Also write it's different skills, basic rules and regulations . (Kabaddi, Volleyball, Basketball, Badminton, Handball, Football, Khokho, Wrestling)