SANMATI H.S.SCHOOL

SUMMER ASSIGNMENT

CLASS-XI

SUBJECT: ENGLISH

General Instructions:

The assignment is mandatory for all students.

Submit it in a neatly maintained notebook/file.

Ensure originality in answers. Avoid copying.

Make the work creative and presentable with proper headings.

Q1. Prepare a project on any one topic not more than 10 pages:

1. Role of Technology in Education

2. Significance of Moral Education in students life.

Q2. Note-Making

Passage:

Education is one of the most important tools for the development of a person and a nation. It helps individuals gain knowledge, develop skills, and build a good character. An educated person is more aware of social responsibilities and can make better decisions in life. Education is not limited to books and classrooms; it also includes learning from experiences, environment, and society.

In today's world, technology has changed the way education is delivered. Online learning, digital classrooms, and smart devices have made education more accessible and flexible. However, self-discipline is very important in online learning. Without proper focus, students may get distracted.

Education also plays a key role in reducing poverty and improving employment opportunities. A well-educated society is more progressive, peaceful, and developed.

Questions:

1. Make notes of the given passage using proper headings and sub-headings.

2. Give a suitable title to the passage.

3. Write a summary of the passage in 40–50 words.

4. Write any 4 abbreviations used in note-making with their full forms.

Q3. Story Writing

Write a short story (150–200 words) beginning with:

"As I opened the old diary, I discovered a secret that changed everything…"

Q4. Descriptive Writing

Describe a place you visited recently (120–150 words). Mention what you saw, heard, and felt there.

Q5. Do as directed:

a) Change into passive voice: The teacher explains the lesson clearly.

b) Change into indirect speech: He said, “I am going to the market.”

c) Fill in the blank with correct tense: She _____ (study) for two hours when I called her.

d) Fill in the blank with correct modal verb: You _____ obey your parents. (should/might/can)

e) Identify the subject and predicate: The sun rises in the east.

SANMATI HIGHER SECONDARY SCHOOL, INDORE

CLASS XI – COMPUTER SCIENCE (083)

100 QUESTIONS MEGA PRACTICE WORKSHEET

Name: _____

Class & Section: _____ Roll No.: _____

Date: _____

◆ SECTION A – MULTIPLE CHOICE QUESTIONS (1 × 40 = 40)

Write the correct option.

---

1. Disk defragmentation improves:

a) CPU speed

b) RAM speed

c) Hard disk performance

d) Internet speed

Answer: _____

---

2. Which software manages computer hardware?

a) Application software

b) Utility software

c) System software

d) Firmware

Answer: _____

---

3. Binary number system uses digits:

a) 0–9

b) 1–9

c) 0 and 1

d) 0–7

Answer: _____

---

4. Which of the following is NOT a number system?

a) Binary

b) Decimal

c) Hexadecimal

d) Logical

Answer: _____

---

5. AND gate gives HIGH output when:

a) Both inputs LOW

b) Both inputs HIGH

c) Any one HIGH

d) Any one LOW

Answer: _____

---

6. Python is a:

a) Low level language

b) Assembly language

c) High level language

d) Machine language

Answer: _____

---

7. Escape sequence for new line is:

a) \t

b) \n

c) \b

d) \a

Answer: _____

---

8. Which operator has highest precedence?

a) +

b) *

c) //

d) **

Answer: _____

---

9. Output of 9 // 2 is:

a) 4

b) 4.5

c) 5

d) Error

Answer: _____

---

10. Which data type is immutable?

a) List

b) Dictionary

c) Tuple

d) Set

Answer: _____

---

11. Index of first element of a list is:

a) 0

b) 1

c) -1

d) None

Answer: _____

---

12. Which function returns length of list?

a) count()

b) size()

c) len()

d) length()

Answer: _____

---

13. Cookies are stored on:

a) Server only

b) User’s computer

c) RAM

d) ROM

Answer: _____

---

14. Cyber bullying means:

a) Online harassment

b) Data theft

c) Virus attack

d) Hacking

Answer: _____

---

15. Which of the following is NOT a cyber crime?

a) Phishing

b) Identity theft

c) Sending email to wrong ID

d) Cyber stalking

Answer: _____

---

16. Dictionary stores data in:

a) Index form

b) Linear form

c) Key–value pairs

d) Tree form

Answer: _____

---

17. Loop used for counting in Python:

a) while

b) if

c) for

d) switch

Answer: _____

---

18. range(5) generates values from:

a) 1 to 5

b) 0 to 5

c) 0 to 4

d) 1 to 4

Answer: _____

---

19. Flowchart symbol for decision is:

a) Oval

b) Rectangle

c) Diamond

d) Parallelogram

Answer: _____

---

20. Operator used for membership testing:

a) in

b) is

c) ==

d) !=

Answer: _____

---

21. Which gate gives opposite output?

a) AND

b) OR

c) NOT

d) NAND

Answer: _____

---

22. Which is a utility software?

a) MS Word

b) Antivirus

c) Python

d) Browser

Answer: _____

---

23. What does len("Python") return?

a) 5

b) 6

c) 7

d) Error

Answer: _____

---

24. Output of print(2**3) is:

a) 6

b) 8

c) 9

d) Error

Answer: _____

---

25. Which symbol represents Start/Stop in flowchart?

a) Rectangle

b) Diamond

c) Oval

d) Arrow

Answer: _____

---

26. Which operator is used for floor division?

a) /

b) %

c) //

d) **

Answer: _____

---

27. Which of the following creates a tuple?

a) (1)

b) [1]

c) (1,)

d) {1}

Answer: _____

---

28. Plagiarism means:

a) Writing own content

b) Copying without credit

c) Sharing files

d) Encrypting data

Answer: _____

---

29. Which function removes last element of list?

a) pop()

b) remove()

c) del

d) clear()

Answer: _____

---

30. Which data type stores unique elements?

a) List

b) Tuple

c) Set

d) Dictionary

Answer: _____

---

31. Which statement is used for selection?

a) for

b) while

c) if

d) break

Answer: _____

---

32. Output of print(type(5)) is:

a) int

b) <class 'int'>

c) number

d) integer

Answer: _____

---

33. Which is NOT a valid identifier?

a) roll_no

b) _name

c) 1value

d) value1

Answer: _____

---

34. Which cyber crime involves fake emails?

a) Hacking

b) Phishing

c) Cyber stalking

d) Spamming

Answer: _____

---

35. Which function counts occurrences in list?

a) find()

b) count()

c) len()

d) index()

Answer: _____

---

36. Which operator checks equality?

a) =

b) ==

c) !=

d) <=

Answer: _____

---

37. What does break do in loop?

a) Skips iteration

b) Stops loop

c) Restarts loop

d) Ends program

Answer: _____

---

38. Which symbol is used for comments in Python?

a) //

b) <!-- -->

c) #

d) **

Answer: _____

---

39. Which is an output device?

a) Keyboard

b) Mouse

c) Monitor

d) Scanner

Answer: _____

---

40. Boolean values are:

a) 0 and 1

b) True and False

c) Yes and No

d) On and Off

Answer: _____

◆ SECTION B – VERY SHORT ANSWER (2 × 20 = 40)

41. Define system software.

42. Write two examples of utility software.

43. What is hardware?

44. What is software?

45. Define plagiarism.

46. What is digital footprint?

47. What is phishing?

48. Write one cyber safety rule.

49. Define flowchart.

50. Write any two flowchart symbols.

51. What is a list?

52. What is a tuple?

53. Write one difference between list and tuple.

54. What is dictionary?

55. What is key in dictionary?

56. Define loop.

57. What is range() function?

58. Write syntax of for loop.

59. What is escape sequence?

60. Write output of print(5*3).

🔹 **SECTION C – SHORT ANSWER / PROGRAMS (3 × 20 = 60)**

61. Write a Python program to swap two numbers.
62. Write a program to print cube of a number.
63. Write program to print numbers from 1 to 10.
64. Write program to find sum of first n numbers.
65. Predict output: print(10//3)
66. Predict output: print(2**4)
67. Write program to check even or odd number.
68. Write program to count elements in list.
69. Write program to find maximum in list.
70. Write program to count frequency of element.
71. Write program to generate random number.
72. Write program to print pattern:

123

12

1

73. Write program to check membership in list.
74. Write program to reverse a string.
75. Write program to create tuple.
76. Write program to find length of tuple.
77. Write program to create dictionary.
78. Write program to display dictionary keys.
79. Write program to use break in loop.
80. Write program to use continue in loop.

🔹 SECTION D – CASE STUDY / LOGIC (4 × 10 = 40)

81. Differentiate between RAM and ROM.
82. Differentiate between list and tuple.
83. Explain AND, OR, NOT gate.
84. Write truth table of AND gate.
85. What is cyber crime? Explain two types.
86. Explain digital footprint with example.
87. Explain plagiarism and its effects.
88. Write advantages of Python.
89. Write disadvantages of Internet.
90. Explain types of software.

🔹 SECTION E – LONG ANSWER (5 × 10 = 50)

91. Write a Python program to create dictionary of students and display marks above 75.
92. Explain De Morgan’s Laws with truth table.
93. Draw logic circuit for Boolean expression.
94. Explain cyber ethics in detail.
95. Explain number system and its types.
96. Write program using nested loop for pattern.
97. Explain flowchart and its advantages.
98. Write difference between append() and extend().

99. Explain characteristics of Python dictionary.

100. Write advantages and disadvantages of computers.

*Class 11 Biology Question bank summer assignment.

Ch 1: The Living World

1 Mark

1. Define metabolism.

2. Expand ICZN.

3. Who proposed Binomial Nomenclature?

4. Name the taxonomic aid used for identification of plants and animals based on similarities and dissimilarities.

2/3 Marks

1. Differentiate between growth in living and non-living things.

2. What are taxonomic categories? Explain with the hierarchy for mango.

3. Why are classification systems changing every now and then?

4. Give the role of botanical gardens.

5 Marks

1. Describe the universal rules of Binomial Nomenclature with examples.

Ch 2: Biological Classification

1 Mark

1. Name the kingdom of red tides.

2. Which protist has a protein-rich layer called pellicle?

3. Give one difference between viroids and viruses.

2/3 Marks

1. Differentiate between archaebacteria and eubacteria.

2. Explain the five-kingdom classification by Whittaker with criteria.

3. Describe the structure of TMV.

4. What are mycoplasma? Why are they called PPLO?

5 Marks

1. Describe the salient features of Kingdom Fungi with examples. Add a note on mode of nutrition.

Read the chapters thoroughly from NCERT Text book

SANMATI H. SEC. SCHOOL , INDORE

SUMMER ASSIGNMENT-2026-27

CHAPTER :SETS

SUBJECT: MATHEMATICS **CLASS : XI**

General Instructions:
(i). Assignment must be done in assignment copy only.
(ii) Step by step solution must be done in copy.
(iii) Assignment Submission last date is 19-o6-26.
(iv) Assignment copy must be covered and labled.

SECTION – A

Questions 1 to 10 carry 1 mark each.

1. The number of subsets of a set containing n elements is
(a) 2^n (b) $2^n - 1$ (c) $2^n - 1$ (d) n^n

2. Let A = {2, 5}, then subsets of set A are ϕ, {2}, {5}, {2, 5}, i.e. 4 subsets then the number of elements its power set contains are
(a) 4 (b) 42 (c) 10 (d) 2

3. The set $(A \cap B')' \cup (B \cap C)$ is equal to
(a) $A' \cup B \cup C$ (b) $A' \cup B$ (c) $A' \cup C'$ (d) $A' \cap B$

4. Let S = set of all points inside the square, T = the set of points inside the triangle and C = the set of points inside the circle. If the triangle and circle intersect each other and are contained in a square. Then
(a) $S \cap T \cap C = \phi$ (b) $S \cup T \cup C = C$ (c) $S \cup T \cup C = S$ (d) $S \cup T = S \cap C$

5. If set A: numbers multiple of 4 and set B: numbers multiple of 6, then set $A \cap B$ is
(a) numbers multiple of 2 (b) numbers multiple of 4
(c) numbers multiple of 12 (d) numbers multiple of 24

6. For disjoint sets A and B, n(A) = 3, n(B) = 5, then $n(A \cap B)$ is
(a) 0 (b) 3 (c) 5 (d) 8

7. Representation of set $A = \{x \mid x \in Z, x^2 < 20\}$ in the roster form is
(a) {1, 2, 3, ..., 20} (b) {1, 2, 3, 4}
(c) {0, 1, 2, 3, 4} (d) {–4, –3, –2, –1, 0, 1, 2, 3, 4}

8. The set {– 1, 1} in the set builder form can be written as
(a) {–1, 1} (b) $\{x \in W : x \leq 1\}$
(c) $\{x \in Z : x \leq 1\}$ (d) $\{x : x \text{ is a solution of } x^2 = 1\}$

For Q9 and Q10, a statement of assertion (A) is followed by a statement of reason (R). Choose the correct answer out of the following choices.
(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

9. **Assertion (A):** The set A = {x : x is an even prime number greater than 2} is the empty set.
Reason (R): The set B = {x : x^2 = 4, x is odd} is not an empty set.

10. **Assertion (A):** If n(A) = 3, n(B) = 6 and A ⊂ B, then the number of elements in A ∪ B is 9.
Reason (R): If A and B are disjoint, then n(A ∪ B) is n(A) + n(B).

SECTION – B

Questions 11 to 14 carry 2 marks each.

11. A and B are two sets such that : n(A – B) = 14 + x, n(B – A) = 3x and n(A ∩ B) = x, draw a Venn diagram to illustrate information and if n(A) = n(B) then find the value of x.

12. Two finite sets have m and n elements. The total number of subsets of the first set is 56 more than the total number of subsets of the second set. Find the values of m and n.

13. A and B are two sets such that n(A) = 3 and n(B) = 6. Find (*i*) minimum value of n(A ∪ B) (*ii*) maximum value of n(A ∪ B).

14. If U = {x : $x \leq 10$, $x \in$ N}, A = {x : $x \in$ N, x is prime}, B = {x : $x \in$ N, x is even}, write A ∩ B′ in roster form.

SECTION – C

Questions 15 to 17 carry 3 marks each.

15. In an examination, 80% students passed in Mathematics, 72% passed in Science and 13% failed in both the subjects, if 312 students passed in both the subjects. Find the total number of students who appeared in the examination.

16. Let A, B and C be three sets such that A ∪ B = A ∪ C and A ∩ B = A ∩ C. Show that B = C.

17. Let U ={1, 2, 3, 4, 5, 6, 8}, A = {2, 3, 4}, B = {3, 4, 5}. Show that (A ∪ B)′ = A′ ∩ B′ and (A ∩ B)′ = A′ ∪ B′

SECTION – D

Questions 18 carry 5 marks.

18. In a group of 50 students, the number of students studying French, English, Sanskrit were found to be as follows :
French = 17, English = 13, Sanskrit = 15
French and English = 9, English and Sanskrit = 4
French and Sanskrit = 5, English, French and Sanskrit = 3. Find the number of students who study
(*i*) French only
(*ii*) English only
(*iii*) Sanskrit only
(*iv*) English and Sanskrit but not French
(*v*) French and Sanskrit but not English

SECTION – E (Case Study Based Questions)

Questions 19 to 20 carry 4 marks each.

19. In a city of 56,000 people, following is the number of fans of players Rohit (R), Virat (V) and Dhoni (D):

Players	Number of Fans
Rohit	23,000
Virat	25,000
Dhoni	18,000
Rohit and Virat	12,000
Rohit and Dhoni	10,000
Virat and Dhoni	8,000
Rohit, Virat and Dhoni	3,000

Based on the above information, answer the following:

(i) How many people are fans of at least 2 players?

(ii) How many people are fans of exactly 1 player?

(iii) How many people are fans of exactly 2 players?

(iv) How many people follow R or V but not D?

20. In class XI of one International school in Hyderabad, there are 200 students out of which 80 have taken Mathematics, 120 have taken Economics and 90 have taken Physical Education. If 50 have taken Mathematics and Economics, 60 have taken Economics and Physical Education, 40 have taken Mathematics and Economics.

If 20 students have taken all three subjects then on the basis of above information answer the following:

(i) Find the number of students who have taken at least one of the subjects.

(ii) Find the number of students who have taken at most one of the subjects.

(iii) Find the number of students who has taken none of the subject.

(iv) Find the number of students who have taken exactly one subject.

Question bank summer assignment for Class 12 Biology –

Ch 1: Sexual Reproduction in Flowering Plants 👇

1 Mark Questions – Very Short Answer

1. Name the innermost and outermost whorls of a flower.

2. What is the function of the tapetum in anther?

3. Define microsporogenesis.

4. What is the ploidy of PEN?

5. Name the device which helps in pollination by birds.

6. What is geitonogamy?

7. Give one example of a cleistogamous flower.

8. What is meant by emasculation?

9. Define apomixis.

10. What is polyembryony? Give one example.

2 Mark Questions – Short Answer I

1. Differentiate between chasmogamous and cleistogamous flowers.

2. Draw a labelled diagram of a mature pollen grain.

3. List any two outbreeding devices that prevent autogamy.

4. What is triple fusion? Where and how does it tak…

[11:47 pm, 26/04/2026] Sanmati Manisha Gupta: *Class 11 Biology Question bank summer assignment.

Ch 1: The Living World

1 Mark

1. Define metabolism.

2. Expand ICZN.

3. Who proposed Binomial Nomenclature?

4. Name the taxonomic aid used for identification of plants and animals based on similarities and dissimilarities.

2/3 Marks

1. Differentiate between growth in living and non-living things.

2. What are taxonomic categories? Explain with the hierarchy for mango.

3. Why are classification systems changing every now and then?

4. Give the role of botanical gardens.

5 Marks

1. Describe the universal rules of Binomial Nomenclature with examples.

Ch 2: Biological Classification

1 Mark

1. Name the kingdom of red tides.

2. Which protist has a protein-rich layer called pellicle?

3. Give one difference between viroids and viruses.

2/3 Marks

1. Differentiate between archaebacteria and eubacteria.

2. Explain the five-kingdom classification by Whittaker with criteria.

3. Describe the structure of TMV.

4. What are mycoplasma? Why are they called PPLO?

5 Marks

1. Describe the salient features of Kingdom Fungi with examples. Add a note on mode of nutrition.

Read the chapters thoroughly from NCERT Text book

SUMMER ASSIGNMENTS
SESSION 2026 -27
CLASS XI
SUBJECT: PHYSICS (042)

Objective type Question

The equation $\left(P+\frac{a}{V^2}\right)(V-b)=$ constant. The units of a is

(A) $Dyne \times cm^5$ (B) $Dyne \times cm^4$ (C) $Dyne / cm^3$ (D) $Dyne / cm^2$

Q.2. The unit of surface tension in SI system is

(A) $Dyne / cm^2$ (B) *Newton/m* (C) *Dyne/cm* (D) *Newton/m*^{2}

Q.3. A force F is given by $F = at + bt^2$, where t is time. What are the dimensions of a and b

(A) MLT^{-3} and ML^2T^{-4} (B) MLT^{-3} and MLT^{-4}
(C) MLT^{-1} and MLT^0 (D) MLT^{-4} and MLT^1

Q.4. In C.G.S. system the magnitude of the force is 100 *dynes*. In another system where the fundamental physical quantities are *kilogram*, *metre* and *minute*, the magnitude of the force is

(A) 0.036 (B) 0.36 (C) 3.6 (D) 36

Q.5. If the velocity of light (c), gravitational constant (G) and Planck's constant (h) are chosen as fundamental units, then the dimensions of mass in new system is

(A) $c^{1/2}G^{1/2}h^{1/2}$ (B) $c^{1/2}G^{1/2}h^{-1/2}$ (C) $c^{1/2}G^{-1/2}h^{1/2}$ (D) $c^{-1/2}G^{1/2}h^{1/2}$

Q.6. If velocity (V), force (F) and energy (E) are taken as fundamental units, then dimensional formula for mass will be

(A) $V^{-2}F^0E$ (B) V^0FE^2 (C) $VF^{-2}E^0$ (D) $V^{-2}F^0E$

Q.7. The dimensional formula of $[ML^{-1}T^{-2}]$ does not represent the following -

(A) Stress (B) Power (C) Pressure (D) Young's modulus

Q.8. In wave equation y = a sin (At – Bx), the dimensions of the ratio A/B are -

(A) [L T] (B) $[LT^{-1}]$ (C) $[L^{-1}T]$ (D) $[L^0T^0]$

Q.9. Which pair has the same dimensions ?

(A)Work and power (B)Density and relative density
(C)Momentum and impulse (D)Stress and strain

Q.10. Dimensional formula for latent heat is-

(A) $M^0L^2T^{-2}$ (B) MLT^{-2} (C) ML^2T^{-2} (D) ML^2T^{-1}

Q.11) 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) constant which has unit .

Q.12). A calorie is a unit of heat or energy and it equals 4.2 J where 1 J = 1 kg m2 s –2 . Suppose we employ a system of units in which unit of mass is α kg, unit of length is β m, unit of time γ s. What will be magnitude of calorie in terms of this new system?

Q.13). Match the column Physical quantity Dimension

(i) Gravitational constant a) ML-1T -1 .

(ii) Bulk modulus b) ML2T -1

(iii) Planks constant. c) ML-1 T -2

(iv) Coefficient of viscosity d) M-1L 3 T -2 .

Q.14). If velocity of light C, Planck's constant H and gravitational constant G are taken as fundamental quantities then express mass, length and time in terms of dimensions of these quantities.

Q.15). If velocity ,time and force were chosen as the base quantities ,find the dimension of mass.

Q.16).The volume of a liquid flowing out per second from a pipe of length 'l' and radius'r' is written by a student as $V= \pi Pr4 /8\eta l$ where 'P' is the pressure difference between two ends of pipe and 'η' is coefficient of viscosity of the liquid having dimensional formula $[ML^{-1}T^{-1}]$. Check whether the equation is dimensionally correct or not.

Q.17) A body of mass 'm' hung at one end of the spring executes simple harmonic motion. The force constant of a spring is 'k' while its period of vibration is T . Prove by dimensional method that the equation $T = 2\pi m/k$ is incorrect. Derive the correct relation for time period.

Q.18). The current (1) flowing through a conductor depends on : (i) number density of electrons (n) (ii) charge on the electron (e) (iii) area of cross-section (A) of the conductor and (iv) the drift velocity (Vd) of the electron. Obtain a relation for I.

Q.19) CASE BASED QUESTIONS

1. System of units: A system of units is a collection of units in which certain units are chosen as fundamental and all others are derived from them. This system is also called an absolute system of units. Some common systems in use are: c.g.s system: The unit of length is centimetre, mass is gram, time is second. M.k.s system: The unit of length is metre, mass is kilogram, time is second. f.p.s system: The unit of length is foot, mass is pound, time is second. S.I. system: In 1960, 11th General Conference of Weights and Measures introduced SI system. It has 7 fundamental units (Unit of length is metre, mass is kilogram, Time is second,Temperature is Kelvin, Electric current is Ampere, Luminous intensity is Candela, Amount of substance is mol) and two supplementary units (Unit of plane angle is radian, solid angle is steradian)

(i)Which of the following is not the name of derived physical quantity?

(a) Kilogram (b) Density (c) Impulse (d) Energy

(ii) The weight of a body is 12g. This statement is not correct because

(a) The correct symbol for the unit of weight has not been used.

(b) The correct symbol for gram is gm.

(c) The weight should be expressed in kg.

(d) Of some reason other than those given above.

(iii) If the unit of force and length are doubled, the unit of energy will be

(a) 1/2 times (b) 2 times (c) 4 times (d) 1/4 times

(iv) The density of a liquid is 13.6 g cm-3 Its value in S.I. is

(a) 13.6 kgm-3 (b) 136 kgm-3 (c) 13600 kgm-3 (d) 1360 kgm-3 2.

Q.20) CASE BASED QUESTIONS

A mathematical calculation can't increase the precision of a physical measurement therefore the number of significant figures in the sum or product of a group of measurement cannot be greater than minimum number of significant figures.

(i) A car runs 1200 m in 22.5 sec.The average speed of a car in appropriate significant figures.

(a) 53.3 m/s (b) 53.33 m/s (c) 53.333 m/s (d) None of these

(ii) The radius of a uniform wire r = 0.024 cm. Take $\pi = 3.142$, then area of cross-section up to appropriate significant figures.

(a) 0.001808 cm2 (b) 0.0018086 cm2 (c) 0.0018 cm2 (d) 18.08 cm2

(iii) The volume of sphere is 2.42 cm3 . The volume of 12 spheres taking into account the significant figures.

(a) 29.0 cm3 (b) 29.04 cm3 (c) 29.1 cm3 (d) 29 cm3

(iv)The number of significant figures in the measured value 16000 is

(a) Five (b)four (c) Three (d) two 3.

Q.21) The frequency of vibration f of a mass m suspended from a spring of spring constant k is given by a relation $f=ax\ m^x\ x\ k^y$. where a is a dimensionless constant.what are the values of x and y?

SANMATI HIGHER SECONDARY SCHOOL
SUMMER ASSIGNMENT 2026
CLASS–XI
SUBJECT–CHEMISTRY(043)

SECTION A

Multiple choice questions

1 The number of significant numbers in 1000 is **1**

a) 1 b)3
c) 4 d)None of them

2. The number of moles in 1 kg of solvent is **1**

a) Molality b) Molarity
c) Mole fraction d) None of them.

3. The example of compound is **1**

a) Water b)Sodium
c) Electrons. d)None of them.

4. The SI unit of temperature units are **1**

a)Degree centigrade b)Kelvin
c)Both of them. d)None of them.

5. Quantum theory was given by **1**

a)Dalton. b)Rutherford.
c)Plank. d)None of them.

6. Water is substance **1**

a)Pure b)Impure
c)Both d)None of the above.

7. Reagent present in less quantity **1**

a)Limiting reagent b)Less reagent
c)low reagent d)None of them.

8. The molecular mass of Glucose is **1**

a)160 amu . b)18 amu
c)180amu . d)None of them .

9. Sand in water is **1**

a)Homogeneous mixture b)Heterogeneous mixture
c)Both d)None of them.

10. The formula unit mass of common salt is **1**

a)58.5 amu b)40 amu
c)18 amu d)None of them.

Each of the following questions consists of two statements , one is Assertion(A) and other is Reason(R) Give answer.

(a). Both A and R are correct and R is correct reason of A.
(b). Both A and R are correct But R is not reason of A .
(c). A is true but R is false.
(d). A is False but R is True.

11. Assertion(A) **:**Classification of elements made their study easy. **1**
Reason(R) **:**It placed the elements having same properties in same group.

12. Assertion(A) **:**NH_3 is compound. **1**
Reason(R) **:**It contains N and H in fix ratio by mass.

13. Assertion(A) **:**Milk is a mixture. 1
Reason(R) **:**It has fat and water in any ratio.

Answer the following questions in one word or in one sentence.

14. What is Element ? **1**

15. What is Compound ? **1**

16. What is Temperature ? **1**

SECTION B

Answer the following questions in short :

17. Determine the molecular formula of an oxide of iron, in which the mass per cent of iron and oxygen are 69.9 and 30.1, respectively.MM of Fe is 56 amu . **2**

OR

The density of 5 M solution of NaCl is 1.25 g $mL^{-1.}$ Calculate the molality of the solution.

18. What is scientific notation ? Give example . **2**

19. When is ionic bond formed ? Give example . **2**

20. What is law of conservation of mass ? **2**

21. What is law of constant proportion ? **2**

SECTION C

Answer the following questions

22 What is law of Multiple proportion ?

23 What is Stoichiometry ?

24. What amount of water is produced during the combustion of 2 kg of methane ? **3**

25. What is atomic radius and electron affinity show its variations in periods and groups . **3**

26. Find the mass percent of all the elements in Sulphuricacid . **3**

27. What is limiting reagent when 200 grams of methane is burnt 4oo grams of oxygen gas. Also find the amount of water produced during the reaction . **3**

28. What is the mass of Water produced on combustion of 1 KG of Hydrogen gas ? Also give the amount of Oxygen required ? **3**

SECTION D

Read the given passages and answer the following questions. Case based questions.

29. A mixture contains particles of two or more pure substances which may be present in it in any ratio. Hence, their composition is variable. Pure substances forming mixture are called its components. Many of the substances present around you are mixtures. For example, sugar solution in water, air, tea, etc., are all mixtures. A mixture may be homogeneous or heterogeneous. In a homogeneous mixture, the components Arrangement of particles in solid, liquid and gaseous state completely mix with each other. This means particles of components of the mixture are uniformly distributed throughout the bulk of the mixture and its composition is uniform throughout. Sugar solution and air are the examples of homogeneous mixtures. In contrast to this, in a heterogeneous mixture, the composition is not uniform throughout and sometimes different components are visible. For example, mixtures of salt and sugar, grains and pulses along with some dirt (often stone pieces), are heterogeneous mixtures. You can think of many more examples of mixtures which you come across in the daily life. It is worthwhile to mention here that the components of a mixture can be separated by using physical methods, such as simple hand-picking, filtration, crystallisation, distillation, etc.

i) What is Mixture ? **1**

ii) Explain the type of mixture . **1**

iii) Milk is what type of mixture ? **1**

iv) How can you separate mixtures ? **1**

30. Every substance has unique or characteristic properties. These properties can be classified into two categories physical properties, such as colour, odour, melting point, boiling point, density, etc., and chemical properties, like composition, combustibility, ractivity with acids and bases, etc. Physical properties can be measured or observed without changing the identity or the composition of the substance. The measurement or observation of chemical properties requires a chemical change to occur. Measurement of physical properties does not require occurance of a chemical change. The examples of chemical properties are characteristic reactions of different substances; these include acidity or basicity, combustibility, etc. Chemists describe, interpret and predict the behaviour of substances on the basis of knowledge of their physical and chemical properties, which are determined by careful measurement and experimentation.

i) What is Physical property ? **1**

ii) What are Chemical properties ? Give example. **1**

iii) What are boiling point and melting point type of properties ? **1**

OR

What are chalcogens ? Give example

iv) Where are non metals placed in modern table ? **1**

SECTION E

31. A compound contains 4.07% hydrogen, 24.27% carbon and 71.65% chlorine. Its molar mass is 98.96 g. What are its empirical and molecular formulas? **5**

32. How many moles of methane are required to produce 22g CO_2 (g) after combustion?. **5**

OR

50.0 kg of N_2 (g) and 10.0 kg of H_2 (g) are mixed to produce NH_3 (g). Calculate the amount of NH_3 (g) formed. Identify the limiting reagent in the production of NH_3 in this situation.

33. Calculate the molarity of NaOH in the solution prepared by dissolving its 4 g in enough water to form 250 mL of the solution. **5**

OR

The density of 3 M solution of NaCl is 1.25 g mL^{-1}. Calculate the molality of the solution.

****

Sanmati Hr. Sec. School

Summer Assignment – 2026

Class XI

Subject: Artificial Intelligence

Note: Read Unit No. 1 from AI Handbook (Already posted in WhatsApp group, and write the answer of the following questions in Assignment File.

A. Multiple-choice questions (MCQs):

1. Who is often referred to as the "Father of AI"?

a. Alan Turing

b. John McCarthy

c. Marvin Minsky

d. Herbert A. Simon

2. In which year was the term "Artificial Intelligence" first used by John McCarthy?

a. 1930

b. 1955

c. 1970

d. 2000

3. What does the term "Data is the new oil" imply?

a. Data is as valuable as oil.

b. Data is used as fuel for machines.

c. Data is a non-renewable resource.

d. Data and oil are unrelated.

4. Divya was learning neural networks. She understood that there were three layers in a neural network. Help her identify the layer that does processing in the neural network.

a. Output layer

b. Hidden layer

c. Input layer

d. Data layer

5. Which category of machine learning occurs in the presence of a supervisor or teacher?

a. Unsupervised Learning

b. Reinforcement Learning

c. Supervised Learning

d. Deep Learning Machine Learning & Artificial Intelligence

6. What does Deep Learning primarily rely on to mimic the human brain?

a. Traditional Programming

b. Artificial Neural Networks

c. Machine Learning Algorithms

d. Random Decision Making

7. What is the role of reinforcement learning in machine learning?

a. Creating rules automatically

b. Recognizing patterns in untagged data

c. Rewarding desired behaviors and/or penalizing undesirable ones

d. Mimicking human conversation through voice or text

8. Which AI application is responsible for automatically separating emails into "Spam" and "Not Spam" categories?

a. Gmail

b. YouTube

c. Flipkart

d. Watson

B. Fill in the Blanks:

1) To determine if a machine or application is AI-based, consider its ability to perform tasks that typically require ___ intelligence.
2) Artificial intelligence (AI) enables a machine to carry out cognitive tasks typically performed by __.
3) Supervised, unsupervised, and reinforcement learning are three categories of __.
4) _____ is a subset of artificial intelligence that is entirely based on artificial neural networks.
5) Machine learning can be used for online fraud detection to make cyberspace a __ place.

C. True or False:

1. Chatbots like Alexa and Siri are examples of virtual assistants.
2. Supervised learning involves training a computer system without labelled input data.
3. Unstructured data can be easily analysed using traditional relational database techniques.
4. Deep learning typically requires less time to train compared to machine learning. Machine Learning & Artificial Intelligence
5. Machine learning is not used in everyday applications like virtual personal assistants and fraud detection.

D. Short Answer Questions:

1) How is machine learning related to AI?
2) Define Data. List the types of data.
3) Define machine learning.
4) What is deep learning, and how does it differ from traditional machine learning?
5) What do you mean by Reinforcement Learning? Write any two applications of Reinforcement Learning at School.
6) How do you understand whether a machine/application is AI based or not? Explain with the help of an example.