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PA-I Assignment: 2026 27

Class-XII Science

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1.	**ENGLISH**

Easy Level

1. What did M. Hamel wear on the last day?
2. Why were the villagers sitting in the classroom?
3. What did Franz realize at the end of the lesson?
4. What did M. Hamel say about the French language?
5. What is the meaning of 'Lost Spring'?
6. What is Mukesh's dream?
7. What work do the people of Firozabad do?
8. Why can't the bangle makers escape poverty?
9. What does garbage mean for children like Saheb?
10. What does the poet ask people to do?
11. What does 'count to twelve' signify?
12. Why does the poet want us to keep quiet?
13. How can silence help humanity?
14. What does the poet say about wars?
15. What will happen if we stop for a moment?
16. Why did the poet feel sad?
17. What did the poet do to distract herself?
18. What is the comparison made with the mother's face?
19. What was the poet's childhood fear?
20. What does the poet say at the airport?

Medium Level

21. How did the atmosphere of the school differ from usual?
22. Why did M. Hamel blame himself for not teaching properly?
23. What role did the villagers play on the last day?
24. How did Franz's attitude towards studies change?
25. What does M. Hamel's last lesson symbolize beyond language learning?
26. Why is language considered a key to freedom in the story?
27. Describe the living conditions of Saheb's family in Seemapuri.
28. Why is garbage considered 'gold' for ragpickers?
29. What are the working conditions of bangle makers in Firozabad?
30. How is Mukesh different from his family members?
31. Why does the author call these children's childhood 'lost'?
32. How does poverty trap generations in the same occupation?
33. What does Mukesh's dream represent in a broader sense?
34. What does the poet mean by 'counting to twelve'?
35. How is 'keeping quiet' different from complete inactivity?
36. What examples does the poet give to explain stillness?
37. How can silence help in self-introspection?
38. How does the poem promote global harmony?
39. Why does the poet associate silence with life and not death?
40. What message does the poet give about human conflicts?
41. How does the poet describe her mother's physical condition?
42. What contrasting images are used in the poem?
43. Why does the poet look outside the car window?
44. What emotions does the poet experience during the journey?

45. How does the poem explore the theme of aging and mortality?
46. Why does the poet smile despite her sadness?
47. What does the comparison with the 'late winter's moon' suggest?
48. Advanced Level
49. Analyze the role of regret in shaping Franz's transformation.
50. Examine how M. Hamel emerges as a symbol of resistance and patriotism.
51. Evaluate the significance of the title "The Last Lesson" in a broader socio-political context.
52. "Neglect of one's own language can lead to cultural loss." Justify with reference to the story.
53. If Franz had valued education earlier, how might the ending differ? Analyze.
54. Critically assess the role of authority (Prussian rule) in shaping identity in the story.
55. Analyze how the title "Lost Spring" captures the essence of the chapter.
56. Examine the role of environment in shaping the future of children like Saheb and Mukesh.
57. Evaluate the author's use of contrast between hope and despair.
58. Discuss the role of social structures in perpetuating child labour.
59. Critically evaluate society's role in sustaining the cycle of poverty.
60. Compare Saheb and Mukesh as symbols of resignation and resistance.
61. Analyze the philosophical undertones of the poem.
62. Evaluate the role of stillness as a tool for self-awareness.
63. Discuss the symbolic use of nature in the poem.
64. Examine the contrast between activity and introspection.
65. "Silence can be more powerful than action." Critically analyze with reference to the poem.
66. How can the poet's idea be applied to resolve modern global conflicts?
67. Is the poet's vision practical in today's fast-paced world? Justify.
68. Examine the use of imagery to convey emotional depth.
69. How does the poet balance fear and acceptance?
70. Discuss the role of contrast in strengthening the poem's message.
71. How does Kamala Das transform a personal moment into a universal experience?
72. Critically analyze the poet's coping mechanism for dealing with grief.
73. Compare the emotional conflict in the poem with real-life experiences.

2. **PHYSICS**

Level-1

1. Define magnification for a spherical mirror.
2. What is the focal length of a plane mirror?
3. Define power of a lens.
4. Define least distance of distinct vision.
5. What is angular magnification?
6. Define coherent sources.
7. State one condition for sustained interference.
8. Write the expression for fringe width.

$$\beta = \frac{\lambda D}{d}$$

9. On what factors does fringe width depend?
10. What happens to fringe width if slit separation increases?
11. What is the path difference for constructive interference?
12. What is diffraction of light?
13. Define polarisation.
14. What is the central maximum in diffraction?
15. What happens to diffraction when wavelength increases?

Level-2

16. Define critical angle. Derive its relation with refractive index.
17. Explain total internal reflection with one practical application.
18. A ray passes from air to glass. How do its speed, wavelength, and frequency change?

19. State two differences between a convex lens and concave lens.
20. Explain why a convex mirror is used as a rear-view mirror.
21. A concave mirror produces a virtual image. Where is the object placed? Explain.
22. Write two differences between a simple microscope and compound microscope.
23. Explain why the objective lens of a microscope has a small focal length.
24. What is angular magnification? Write its expression for a simple microscope.
25. Why is a telescope used for viewing distant objects? State two reasons.
26. Why are the fringes equally spaced in YDSE?
27. What happens if white light is used instead of monochromatic light?
28. Define diffraction of light and state when it becomes significant.
29. Give two differences between interference and diffraction.
30. What is polarisation of light? How is it produced?

Level-3

31. Derive the relation between refractive index and critical angle for total internal reflection.
32. Derive the mirror formula using ray diagram.
33. Explain the working of a compound microscope with labelled diagram.
34. Derive the expression for magnifying power of a simple microscope when image is at near point.
35. Explain the astronomical telescope in normal adjustment with diagram.
36. Compare microscope and telescope on the basis of purpose, focal length, and magnification.
37. Explain Young's Double Slit Experiment (YDSE) with diagram.
38. Derive the expression for fringe width in YDSE.

$$\beta = \frac{\lambda D}{d}$$

39. Show that interference fringes are equally spaced.
40. What are coherent sources? How are they produced in YDSE?
41. Explain diffraction of light and derive the condition for minima in single slit diffraction.
42. Draw the intensity distribution curve for diffraction pattern and explain it.
43. Compare interference and diffraction with at least three differences.
44. In YDSE, if wavelength is doubled, what happens to fringe width? Justify mathematically.
45. A lens has focal length 20 cm. Calculate its power and state its nature.

3. CHEMISTRY

Level-1

1. Define a solution.
2. What is a binary solution?
3. Define molarity.
4. What is molality?
5. Define mole fraction.
6. What is Henry's Law?
7. Define vapour pressure.
8. What is an ideal solution?
9. What is an azeotrope?
10. Define osmotic pressure.
11. Differentiate between molarity and molality.
12. State Raoult's Law for volatile liquids.
13. What are colligative properties? Name them.
14. Define abnormal molecular mass.
15. Explain van't Hoff factor.

Level-2

16. Distinguish between ideal and non-ideal solutions.
17. Explain positive deviation from Raoult's Law.

18. Explain negative deviation from Raoult's Law.
19. What is reverse osmosis? Give one application.
20. Define relative lowering of vapour pressure.
21. Derive the expression for osmotic pressure.
22. Calculate molarity of a solution containing 10 g NaCl in 500 mL solution.
23. Define electrochemistry.
24. What is an electrochemical cell?
25. Define electrode potential.
26. What is standard electrode potential?
27. Define galvanic cell.
28. What is electrolysis?
29. Define conductivity.
30. What is molar conductivity?

Level-03

31. What is Kohlrausch's Law?
32. Differentiate between galvanic cell and electrolytic cell.
33. Explain salt bridge and its function.
34. Write Nernst equation.
35. What is cell potential?
36. Explain oxidation and reduction in terms of electrons.
37. Define limiting molar conductivity.
38. What is electrochemical series?
39. Explain conductance and resistance relation.

Note: - Solve numerical problem from intext and Exercise of chapter 1 and chapter 2.

4. MATHEMATICS

Level-1

1. If R = {(x, y): x+2y=8} is a relation on N, write the range for R.
2. Let R= {(a, a^3): a is a prime number less than 5} be a relation. Find the range of R.
3. Let S be the set of all students studying in Delhi University. A Relation in S is given by R = {(S_1, S_2): S_1 and S_2 are of the same sex}.Check whether R is an equivalence relation. Let R = {(a, b): a and b study in the same class} be a relation defined on the set of students of a school. Check whether R is an equivalence relation?
4. Let S = {x: x is a resident of Delhi}. A relation R on S is defined by R = {(a, b): a and b are members of a joint family}. Check whether R is an equivalence relation?
5. Show that the relation R defined by $(a,b)R\,(c,d) \Rightarrow a+d=b+c$ on the set N X N is an equivalence relation.
6. Show that the relation R defined by $R=\{(a,b): a-b\ is\ divisible\ by\ 3; a,b\in N\}$ is an equivalence relation.
7. Let T be the set of all triangles in a plane with R as a relation in T given by $R=\{(T_1,T_2): T_1 \cong T_2\}$. Show that R is an equivalence relation.
8. Prove that the relation R in the set A = {1, 2, 3, 4, 5} given by $R=\{(a,b): |a-b|\ is\ an\ even\ number\}$, is an equivalence relation.
9. Let $f: N \to N$ be defined by
$f(n)=\begin{cases}\frac{n+1}{2}, if\ n\ is\ odd\\ \frac{n}{2}, if\ n\ is\ even\end{cases}$ for all n $\in N$. find whether f is bijective.
10. Show that the relation R in the set of real numbers defined as $R=\{(a,b): a\le b^2\}$ is neither reflexive, nor symmetric, nor transitive.
11. Show that the relation R defined by $R=\{(a,b): a-b\ is\ divisible\ by\ 5; a,b\in Z\}$ is an equivalence relation on the set of integers Z.

12. What is the range of the function $(x) = \frac{|x-1|}{x-1}$?

Level-2

13. Let A = {1, 2, 3}, B = {4, 5, 6, 7} and f = {(1, 4), (2, 5), (3, 6)} be a function from A to B. State whether f is one-one or not.

14. Prove that the relation S in the set A = $\{x \in Z: 0 \leq x \leq 12\}$ given by $S = \{(a,b): |a-b| \; is \; divisible \; by \; 4\}$, is an equivalence relation. Find the set of all elements related to 1.

15. Given that $f(x) = \sin x$ check if function f is one-one for (i) $(0, \pi)$ (ii) $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$.

16. Show that the relation R defined by $(a,b)R(c,d) \Rightarrow a+d = b+c$ on the set N X N is an equivalence relation.

17. Let $f: W \to W$ be a function defined as $f(n) = \begin{cases} n+1, & if \; n \; is \; even \\ n-1, & if \; n \; is \; odd \end{cases}$. Then show that f is bijective.

18. Let $A = R - \{2\}, B = \{1\}$ If $f: A \to B \; is \; a \; function \; defined \; by \; f(x) = \frac{x-1}{x-2}$, then show that $f \; is \; one-one \; and \; onto$.

19. Show that the relation $R = \{(a,b): a \leq b^2\}$ on the set of real numbers R is not reflexive.

20. Let $f: N \to R$ be a function defined as $f(x) = 4x^2 + 12x + 15$. Then show that $f: N \to S$, where S is range of f, is one-one onto.

21. Let R be the relation in the set N given by $R = \{(a,b): a = b-2, b > 6\}$. Choose the correct answer.

a) $(2,4) \in R$ b) $(3,8) \in R$ c) $(6,8) \in R$ d) $(8,7) \in R$

22. The relation R in N X N such that $(a,b)R\,(c,d) \Rightarrow a+d = b+c$ is

a) reflexive but not symmetric

b) reflexive and transitive but not symmetric

c) an equivalence relation

d) symmetric but not reflexive

23. Write the principle value of $\tan^{-1}(\sqrt{3}) - \cot^{-1} -(\sqrt{3})$.

24. Write the value of $\tan^{-1}\left[2sin\left(2\cos^{-1}\frac{\sqrt{3}}{2}\right)\right]$

25. Write the principle value of $\cos^{-1}\left(\frac{1}{2}\right) - 2\sin^{-1}\left(-\frac{1}{2}\right)$

26. What is the principle value of $\cos^{-1}\cos\frac{2\pi}{3} + \sin^{-1}\sin\frac{2\pi}{3}$.

Level-03

27. Write the element a_{23} of a 3X3 matrix A= $[a_{ij}]$, whose element a_{ij} is given by $\frac{|i-j|}{2}$.

28. Write a square matrix of order 2, which is both symmetric and skew symmetric.

29. If A' = $\begin{bmatrix} 3 & 4 \\ -1 & 2 \\ 0 & 1 \end{bmatrix}$ and B= $\begin{bmatrix} -1` & 2 & 1 \\ 1 & 2 & 3 \end{bmatrix}$, then find A'- B'.

30. Solve the following matrix equation for x: $[x \quad 1]\begin{bmatrix} 1 & 0 \\ -2 & 0 \end{bmatrix} = O$

31. For the matrices A and B, such that AB=BA, if $A = \begin{bmatrix} 4 & 0 \\ 2k & 5k \end{bmatrix} \; and \; B = \begin{bmatrix} k & o \\ 3 & -1 \end{bmatrix}$. Then show that, $2k^2 + 17k - 12 = 0$.

32. If $A = \begin{bmatrix} \cos\alpha & -\sin\alpha \\ \sin\alpha & \cos\alpha \end{bmatrix}$, then for what value of α is A an identity matrix?

33. Show that all the diagonals of a skew symmetric matrix are zero.

34. Find the matrix A such that: $\begin{bmatrix} 2 & -1 \\ 1 & 0 \\ -3 & 4 \end{bmatrix} A = \begin{bmatrix} -1 & -8 \\ 1 & -2 \\ 9 & 22 \end{bmatrix}$

35. Find the matrix X such that: $X\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix} = \begin{bmatrix} -7 & -8 & -9 \\ 2 & 4 & 6 \end{bmatrix}$.

5.	**BIOLOGY**

Level 1 – EASY

1. The fusion of male and female gametes is called:
(a) Pollination (b) Fertilization (c) Germination (d) Ovulation

2. Which hormone is responsible for ovulation?
(a) FSH (b) LH (c) Estrogen (d) Progesterone

3. Which contraceptive method prevents implantation?
(a) Condom (b) IUCD (c) Pills (d) Vasectomy

4. Pollen grains are produced in:
(a) Ovary (b) Stigma (c) Anther (d) Style

5. Testes are located in:
(a) Abdomen (b) Scrotum (c) Pelvis (d) Urethra

6. What Is the function and location of Sertoli cells?

7. What is menstruation?

8. Give any two causes of infertility.

9. Explain structure of a pollen grain.

10. Describe phases of menstrual cycle.

11. Write any three advantages of family planning.

12. Explain fertilization in flowering plants.

13. Describe structure of human male reproductive system.

14. Explain different methods of contraception.

15. Write a note on STDs and their prevention.

Level 2 – MODERATE

1. Double fertilization is characteristic of:
(a) Gymnosperms (b) Angiosperms (c) Algae (d) Fungi

2. Sertoli cells are involved in:
(a) Hormone secretion (b) Nourishing sperms
(c) Ovulation (d) Fertilization

3. Which method is natural contraception?
(a) Condom (b) Withdrawal (c) Pills (d) Copper-T

4. Endosperm is formed by:
(a) Haploid cells (b) Diploid cells (c) Triploid cells (d) Tetraploid cells

5. IVF technique is popularly known as:
(a) Surrogacy (b) Test tube baby (c) Cloning (d) GIFT

6. What is microsporogenesis?

7. Define spermatogenesis.

8. What is amniocentesis?

9. Explain different types of pollination.

10. Describe structure of ovum.

11. Write three causes of population explosion.

12. Explain development of male gametophyte.

13. Describe female reproductive system in humans.

14. Explain ART techniques.

15. Describe reproductive health programmes in India.

Level 3 – DIFFICULT

1. In angiosperms, synergids help in:
(a) Pollination (b) Pollen tube guidance (c) Fertilization (d) Seed formation

2. Leydig cells produce:
(a) Estrogen (b) Progesterone (c) Testosterone (d) FSH

3. Which of the following is NOT an STD?
(a) AIDS (b) Syphilis (c) Malaria (d) Gonorrhea

4. Triple fusion results in formation of:
(a) Zygote (b) Endosperm (c) Embryo (d) Ovule

5. Which hormone maintains pregnancy?
(a) LH (b) FSH (c) Progesterone (d) Oxytocin

6. What is double fertilization?

7. Define oogenesis.

8. What is lactational amenorrhea?

9. Explain structure of embryo sac.

10. Describe hormonal control of spermatogenesis.

11. Explain consequences of unsafe sexual practices.

12. Describe post-fertilization changes in a flower.

13. Explain menstrual cycle with hormonal regulation.

14. Describe different STDs, symptoms and prevention.

15. Explain population control measures and their importance.

6. INFORMATICS PRACTICES

1. Consider the following Series,

S_amt

Table	350
Chair	200
Sofa	800
Stool	150

S1

A	10
B	40
C	34
D	60

S2

A	80
B	20
C	74
D	90

i Write a statement to create all the Series (i.e. S_amt, S1, S2) using
- List
- Dictionary
- ndarray

ii Write the command which will display the names of furniture having rent>250.

iii Write a statement to add the index with name Bed with value 9000.

iv Write the command to find the sum of series S1 and S2, also mention the output.

v If one more Series will be added as Object S3, with value [50,60,70,80] and index [A,C,E,G], what will be the output for print(S1+S3) and print(S2-S3).

vi Write a statement to find first 3 and last 3 values from S_amt
- Using head() and tail() function
- Using loc
- Using iloc

2. Write the output of the following :

>>> import pandas as pd
>>> series1 = pd.Series([10,20,30])
>>> print(series1)
	>>> import pandas as pd
	>>> S1=pd.Series(14, index = ['a', 'b', 'c'])
	>>>print(S1)

>>> import pandas as pd
>>> S1=pd.Series([14, 7, 9] ,index = range(1, 8, 3))
>>> print(S1)
	>>> import pandas as pd
	>>> S1 = pd.Series(data = 2*(31, 2, -6))
	>>> print(S1)

3. Consider the table product. Write SQL queries for the following:

ProductID	ProductName	Category	Price	Stock
101	Laptop	Electronics	55000	10
102	Mobile	Electronics	20000	25
103	Chair	Furniture	3000	50
104	Table	Furniture	7000	20
105	Headphones	Electronics	1500	40

i Create the table product with suitable datatypes.
ii Insert first record into the table.
iii Display all records from the table.
iv Display only ProductName and Price of all products.
v Display records of products where Price is greater than 5000.
vi Display records where Category is either 'Electronics' or 'Furniture' using IN.
vii Display products where Price is between 2000 and 10000.
viii Display products whose name starts with 'M' using LIKE.
ix Display all products in descending order of Price.
x Update the Stock of 'Mobile' to 30.
xi Delete products where Stock is less than 15.
xii Remove the table.

7. PHYSICAL EDUCATION

Subjective questions on (Ch 1 & 4)

EASY LEVEL

1. Define sports event management.
2. What is planning in sports management?
3. Define organising in sports events.
4. What is meant by staffing?
5. Define directing.
6. What is controlling in management?
7. What is a fixture?
8. Define intramural tournament.
9. Define extramural tournament.
10. What is Special Olympics?

MODERATE LEVEL

1. State any two functions of planning in sports event management.
2. Prepare knockout fixture of 19 teams
3. What are the duties of the technical committee during the event?
4. Explain the concept of bye in knock-out tournament.
5. What is seeding and why is it used?
6. Differentiate between intramural and extramural tournaments (any one point).
7. State any two objectives of community sports programs.
8. What is meant by classification in disability sports?
9. Define inclusion in sports.
10. Give any two advantages of physical activity for CWSN.

	HARD LEVEL **1.** Explain how planning affects the success of a sports event (any two points). **2.** Prepare staircase fixture of 9 teams **3.** Prepare 7 teams of Tabular fixture. **4.** Prepare special seeding fixture of 17 teams **5.** Write a short note on paralympics. **6.** How does staffing contribute to effective sports event management? **7.** Explain the importance of controlling in sports events (any two points). **8.** State any two strategies to make physical activities accessible for CWSN. **9.** How does divisioning differ from classification? **10.** Explain the significance of Run for Unity or Health Run (any two points).
8.	**ARTIFICIAL INTELLIGENCE**
	Level-1 **1.** What are the three main steps involved in Self-Management? **2.** "Rohan often gets distracted by social media while studying for his AI board exam." Suggest any two techniques for Rohan to improve his self-regulation. **3.** What does the 'A' in SMART goals stand for? **4.** What is the difference between a Workbook and a Worksheet? **5.** What is the 'Sort' feature used for? **6.** What happens during the "Data Understanding" stage? **7.** Name the stage that follows "Evaluation" and explain its purpose. **Level-2** **8.** Explain the difference between 'Modeling' and 'Evaluation'. **9.** A Data Scientist finds that 30% of the 'Age' column in their dataset is empty. Which stage of the methodology deals with this, and how? **Level-3** **10.** The Data Science Methodology is often described as a "Non-Linear" or "Iterative" process. Identify two specific stages where a data scientist might be forced to go back to a previous stage and explain why. **11. Scenario:** A manufacturing company develops an AI model to predict when a factory machine will break down (Model Stage). During the **Evaluation** stage, the model shows **99% accuracy**. However, when it is **Deployed**, the machines keep breaking down without any warning from the AI. **Questions:** 1. **Why did the model fail despite high accuracy?** 2. Which stage should the team return to, and what should they do?
9.	**PSYCHOLOGY**
	Level 1 **1.** How can we calculate IQ? **2.** What is cognitive assessment system (CAS)? **3.** What is Observation **4.** According to Robert Sternberg, a wrestler like Geeta Phogat or a boxer Sarita devi would be high which intelligence? **5.** What is “Street smartness” According to the Sternberg’s theory? **6.** Mention the types of intelligence test? **7.** Who Made the pioneering attempt to construct an Intelligence test in Hindi in 1930’s

8. What areas are covered in the Handbooks published by NLEPT?
9. What is aptitude?
10. What is mental Retardation?

Level 2

1. Write briefly about one factor theory and two factor theory?
2. Mention primary mental abilities?
3. What is talent and giftedness?
4. Difference between verbal, non-verbal, performance test?
5. According your understanding intelligence is different from creativity?
6. Define: Interest, Values, Personality?
7. What is IQ? Classify people on basis of their IQ with Example?
8. How aptitude is different from interest? How to measure aptitude?
9. What is individualism? With example?
10. What Situationism? With example?

Level 3

1. Why emotional intelligence is important in the field of education?
2. Bhavya is good singer, she is well adjusted with singing group of school. She cooperates with teachers and also helps full to students in school related activity. She also liked by her friends and family? Identify and explain the types of intelligent. That Bhavya is exhibit?
3. Mention and brief 2 test related to various psychological attributes.
4. What is the role of nurture and nature in the development of intelligence? (Mention the findings)
5. Draw NDC (normal curve) of intelligence and gave explanation?
6. Difference between verbal, non-verbal, performance test? (5 points)
7. Explain Intelligence in Indian tradition by explaining term 'buddhi'?
8. List the Characteristics of Emotionally Intelligent Person?
9. Why Individual or group test is different from verbal, non- verbal or performance test?
10. Explain intellectual deficiency and intellectual giftedness?