DRONACHARYA
360° DIAGNOSTIC & SCHOLARSHIP EXAM

Sample Paper
for Students presently in Class VI

Paper 3 - NSEJS & Mathematics Olympiad

Duration : 90 minutes   *Maximum Marks : 126*

Please read the instructions and guidelines carefully :

Important Note : Please ensure to accurately input the details for the Class and Paper No. as indicated at the top of this sheet into the corresponding columns / fields on the OMR sheet before proceeding with the paper. Incorrectly filled information regarding the class or paper may result in inaccurate outcomes or results.

> *"This paper has been scientifically designed to evaluate your potential – manifested and hidden for the target examinations mentioned in various sections of the paper. Thus, your adherence to the instructions is critical in the evaluation of the same"*

1. This Question paper consists of 2 sections.

2. **Student should devote allotted time for each section. If a section is easy, then it is easy for everyone & was meant to be like that with a goal in mind. Do not switch over to another section if you find the section to be easy. If a section is tough, then it is tough for everyone.** Please note that each section has been allocated a time limit of 45 minutes. Dedicating the full 45 minutes to finish each section successfully is essential. Opening the next section before completing the allotted time for the preceding section is not permitted. This adherence is crucial for assessing your true potential, as each section is meticulously crafted to evaluate your potential for the corresponding competitive examinations.

3. Candidate should open the seal of Section-II only after completing 45 minutes of Section-I.

4. Sheets will be given to each candidate for rough work. Candidate must fill all details on the rough sheet and submit the same to invigilator along with OMR sheet. Candidate must mention the Question No. while doing the rough work in the sheet.

5. Please note candidates are not allowed to bring any prohibited items into the exam hall such as electronic devices, mobile phones, smart watch, earphones, calculators, books, notes, formula sheets, and bags.

6. Marking scheme is given in table below:

| Section	Subject		Question no.	Marking Scheme for each question	
				Correct answer	**Wrong answer**
SECTION – I **(NSEJS)** **Time Allotted: 45 Minutes**	PHYSICS	(PART-A)	1 to 7	**+3**	**−1**
	CHEMISTRY	(PART-B)	8 to 14	**+3**	**−1**
	BIOLOGY	(PART-C)	15 to 21	**+3**	**−1**
SECTION – II **(Mathematics Olympiad)** **Time Allotted: 45 Minutes**	MATHEMATICS	(PART-A)	22 to 42	**+3**	**−1**

Section – I

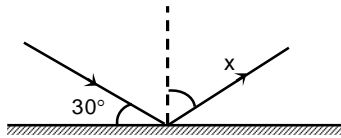# Time: 45 Minutes

PHYSICS (PART-A)

*This part contains **7 Multiple Choice Questions** number **1 to 7**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

1. In the given figure, if a fuse in one of the bulbs causes all the other bulbs to go off. Which bulb has to be fused?
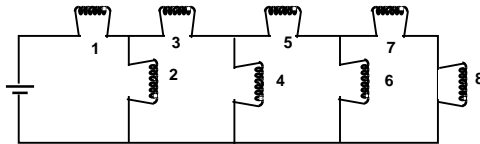
    (A) 5   (B) 3
    (C) 2   (D) 1

2. Find x.

    (A) 30°   (B) 90°
    (C) 60°   (D) 45°

3. Ramu is seeing his image in a plane mirror. Initially the distance between the mirror and his image is 5 m. If he moves 2 m towards the mirror then the distance between Ramu and his image will be
    (A) 3 m   (B) 6 m
    (C) 7 m   (D) 10 m
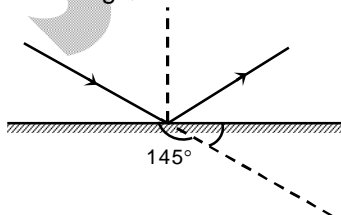
4. In semiconductor electric current is due to
    (A) only electrons   (B) only holes
    (C) electrons and holes   (D) none

5. If 10^{19} electrons cross a surface perpendicularly in 16 sec. What is current?
    (A) 0.1 A   (B) 1 A
    (C) 16 A   (D) 10^{19} A

6. Final angle of incidence

    (A) 55°   (B) 45°
    (C) 35°   (D) 40°

7. Slope of distance-time graph gives _____ and SI unit of obtained physical quantity is _____.
(A) velocity, km/h
(B) speed, m/s
(C) acceleration, m/s^2
(D) displacement, metre

CHEMISTRY (PART-B)

*This part contains **7 Multiple Choice Questions** number **8 to 14**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

8. Muddy can be purified through coagulation by using
(A) Sodium chloride
(B) Potash alum
(C) Glucose
(D) Rice

9. During filtration, what do we obtain on the filter paper?
(A) Residue
(B) Decant
(C) Filtrate
(D) none of these

10. Which of these in the smallest particle
(A) A speck of dust
(B) A water drop
(C) A molecule
(D) an atom

11. Silk cotton is obtained from
(A) Coconut
(B) Cotton
(C) Kapok tree
(D) Banyan tree

12. In physical changes
(A) Release of light energy takes place
(B) Evolution of heat energy takes place
(C) No new substance is formed
(D) New substance is formed

13. The pure substance have fixed
(A) Melting point only
(B) Boiling point only
(C) Both melting and boiling point
(D) Neither melting nor boiling point

14. White coir fibre can be obtained from
(A) Mature coconut
(B) Immature coconut
(C) Jute
(D) Banana

BIOLOGY (PART-C)

*This part contains **7 Multiple Choice Questions** number **15 to 21**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

15. Which is not a part of a leaf?
(A) Petiole
(B) Lamina
(C) Veins
(D) Nodes

16. The process of loss of water by a plant through leaves is called
(A) evaporation
(B) condensation
(C) photosynthesis
(D) transpiration

17. Which is a correct set of parts of a pistil?
(A) Ovary, style and filament
(B) Ovary style and stigma
(C) Ovary, anther and filament
(D) Filament and anther

18. Which of the skull bones are movable?
(A) Upper jaw
(B) Teeth
(C) Eye socket
(D) Lower jaw

19. The tissue which helps in the movement is called
    (A) epithelial tissue
    (B) muscular tissue
    (C) protective tissue
    (D) nervous tissue

20. The nerves that run down our backbone is
    (A) spinal cord
    (B) joints
    (C) skeleton
    (D) tendon

21. Male reproductive part of flower is
    (A) sepals
   (B) petals
    (C) stamens
    (D) pistil

Section – II

Time: 45 Minutes

MATHEMATICS – (PART – A)

*This part contains **21 Multiple Choice Questions** number **22 to 42**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

22. $1+\dfrac{1}{2}+\dfrac{1}{4}+\dfrac{1}{7}+\dfrac{1}{14}+\dfrac{1}{28}$ is equal to
    (A) 2
    (B) 2.5
    (C) 3
    (D) 3.5

23. Which of the following pairs is coprime ?
    (A) 345, 2431
    (B) 2717, 13585
    (C) 6965, 7215
    (D) 2034, 3692

24. When 24 is subtracted from a number, if reduces to its four-seventh. What is the sum of digits of that number ?
    (A) 1
    (B) 9
    (C) 11
    (D) None of these

25. The total surface area of a cube is 726m^2. Find its edge.
    (A) 8 m
    (B) 9 m
    (C) 11 m
    (D) 12 m

26. In figure $\angle a + \angle b + \angle c$ is equal to

    (A) 135º
    (B) 180º
    (C) 270º
    (D) 360º
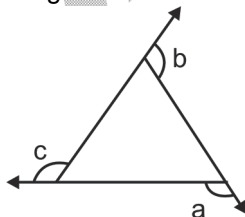
27. If 2A = 3B and 4B = 5C then A : C is
    (A) 4 : 3
    (B) 8 : 15
    (C) 15 : 8
    (D) 3 : 4

28. Which of the following expression is correct one for calculating the circumference of a circle ?
    (A) $2\pi r$
    (B) πd
    (C) Both (A) and (B)
    (D) None of these

29. If the mean of 2, 3, x, 7, 8 is x, then find the value of x.
    (A) 5
    (B) 1
    (C) 0
    (D) 4

30. The area of a rectangular park is 527 m^2. If its length is 31 m, then its perimeter is
    (A) 17 m
    (B) 48 m
    (C) 96 m
    (D) 56 m

31. A box has 25 balls of which 9 are red and rest are yellow. Aniket picks one-third of red balls and half of the yellow balls. What fraction of the balls are left in the box ?
    (A) $\dfrac{11}{16}$
    (B) $\dfrac{11}{25}$
    (C) $\dfrac{14}{25}$
    (D) $\dfrac{16}{25}$

32. If $\dfrac{144}{0.144} = \dfrac{14.4}{x}$, then the value of x is
    (A) 0.0144
    (B) 1.44
    (C) 14.4
    (D) 144

33. If x : y = 5 : 2, find the value of 2x + 5y : 8x + 2y
    (A) $\dfrac{5}{11}$
    (B) $\dfrac{4}{11}$
    (C) $\dfrac{11}{5}$
    (D) None of these

34. If 25% of a number is subtracted from a second number, the second number reduces to its five-sixth. What is the ratio of the first number to the second number ?
    (A) 1 : 3
    (B) 2 : 3
    (C) 3 : 2
    (D) Data inadequate

35. The sides of a rectangle are in the ratio 5 : 4. If its perimeter is 72 cm then this length is
    (A) 40 cm
    (B) 30 cm
    (C) 20 cm
    (D) None of these

36. A cube of edge 9 cm is cut into x cubes each edge 3 cm. Then x is
    (A) 54
    (B) 9
    (C) 27
    (D) 81

37. Thrice of a number when increased by 6 gives 24. The number is
    (A) 6
    (B) 7
    (C) 8
    (D) 11

38. The cost of flooring a room 20 m long at Rs. 7 per sq. m is Rs. 2520 then the breadth of the room is
    (A) 20 m
    (B) 18 m
    (C) 24 m
    (D) 28 m

39. How many rays can a line AB show if O is a point which lies on the line between A and B ?
(A) 2   (B) 1
(C) 0   (D) None of these

40. The product of the seven fractions

$$\left(1-\frac{1}{2}\right)\left(1-\frac{1}{3}\right)\left(1-\frac{1}{4}\right)\left(1-\frac{1}{5}\right)\left(1-\frac{1}{6}\right)\left(1-\frac{1}{7}\right)\left(1-\frac{1}{8}\right) \text{ is}$$

(A) $\dfrac{1}{8}$ (B) $\dfrac{1}{4}$

(C) $\dfrac{1}{6}$ (D) $\dfrac{1}{2}$

41. A square paper sheet has $10\dfrac{2}{5}$ cm long side. Find perimeter (in cm)

(A) $41\dfrac{3}{5}$ (B) $41\dfrac{4}{7}$

(C) $35\dfrac{2}{3}$ (D) None of these

42. If 40% of a number is equal to two third of another number. Then the ratio of first number to the second number is equal to
(A) 3 : 2   (B) 3 : 1
(C) 5 : 3   (D) None of these

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ANSWER KEY

1.	**D**	2.	**C**	3.	**B**	4.	**C**
5.	**A**	6.	**A**	7.	**B**	8.	**B**
9.	**A**	10.	**D**	11.	**C**	12.	**C**
13.	**C**	14	**B**	15.	**D**	16.	**D**
17.	**B**	18.	**D**	19.	**B**	20.	**A**
21.	**C**	22.	**A**	23.	**A**	24.	**C**
25.	**C**	26.	**D**	27.	**C**	28.	**C**
29.	**A**	30.	**C**	31.	**C**	32.	**A**
33.	**A**	34.	**B**	35.	**C**	36.	**C**
37.	**A**	38.	**B**	39.	**A**	40.	**A**
41.	**A**	42.	**C**					