



# Diagnostic cum Scholarship Tests

## SAMPLE PAPER

### For Students of Class VI

## Paper 2 - NTSE Science & Mathematics

Duration : 80 minutes

Paper Code: 56-2

Maximum Marks : 60

Please read the instructions and guidelines carefully :

**Important Note** : Please ensure to accurately input the details for the Question Paper Code as indicated at the top of this sheet (Side 2) 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 40 minutes. Dedicating the full 40 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 40 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 (NTSE-Science) Time Allotted: 40 Minutes	PHYSICS (Part-A)	1 to 10	+1	0
	CHEMISTRY (Part-B)	11 to 20	+1	0
	BIOLOGY (Part-C)	21 to 30	+1	0
SECTION – II (NTSE-Mathematics) Time Allotted: 40 Minutes	MATHEMATICS (Part-A)	31 to 60	+1	0

# Section - I

Time: 40 Minutes

## PHYSICS (PART-A)

This part contains 10 Multiple Choice Questions number 1 to 10. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

- Which of the following is an example of a wedge?  
(A) Knife (B) Scissors  
(C) Stapler (D) both (A) and (B)
- Grease is used to  
(A) reduce friction (B) increase friction  
(C) make a surface shiny (D) make a surface oily
- Size of moon keeps changing when viewed from earth. This change is called  
(A) Segment of moon (B) Solar eclipse  
(C) Lunar eclipse (D) Phases of moon
- Force is cause of  
(A) inertia (B) charging  
(C) change in momentum (D) all are correct
- Arrange the following planets in ascending order of their distance from the sun.  
I. Jupiter II. Venus III. Mercury IV. Mars V. Earth  
(A) I, V, IV, II, III (B) III, II, V, IV, I  
(C) III, II, IV, V, I (D) I, IV, V, II, III
- When a stone tied to a string is whirled in a circle, the work done on it by the string is  
(A) zero (B) negative  
(C) positive (D) none of these
- $1 \text{ km} \times 1 \text{ m} =$   
(A)  $10^5 \text{ m}$  (B)  $1000 \text{ m}^2$   
(C)  $10^5 \text{ m}^2$  (D) None
- When a man applies 10 N force on a body in south direction and another man applies 20 N force on same body in north direction. Then the net force acting on the body is  
(A) 20 N in north (B) 10 N in north  
(C) 10 N in south (D) 20 N in south
- Gravity on the moon is comparison to earth is  
(A) Triple (B) Double  
(C) Half (D) One sixth
- Stapler belongs to which class of lever?  
(A) Class I lever (B) Class II lever  
(C) Class III lever (D) Wheel and axle

## CHEMISTRY (PART-B)

This part contains 10 Multiple Choice Questions number 11 to 20. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

11. Matter has \_\_\_\_\_  
(A) Area (B) Weight  
(C) Volume (D) All of these
12. Lithosphere contain which of the following?  
(A) Ozone (B) Water  
(C) Land (D) Air
13. Coal, petroleum & minerals are  
(A) Artificial resources (B) Natural underground resources  
(C) Natural resource on earth's surface (D) None of these
14. Which of the following is a sedimentary rock?  
(A) Slate (B) Marble  
(C) Granite (D) Sandstone
15. Molecules are made up of  
(A) Atoms (B) Crystals  
(C) Compounds (D) Gases
16. \_\_\_\_\_ have a definite volume but do not have a definite shape.  
(A) Solids (B) Liquids  
(C) Gases (D) Crystals
17. Presence of toxic and harmful substances in soil is known as  
(A) Water cycle (B) Oxygen cycle  
(C) Nitrogen cycle (D) Water Pollution
18. The liquid that flows out of an active volcano is?  
(A) Water (B) Petrol  
(C) Lava (D) Magma
19. Which fibre is obtained from Flax seeds?  
(A) Cotton (B) Nylon  
(C) Linen (D) Wool
20. Loading speeds up  
(A) Sublimation (B) Decantation  
(C) Sedimentation (D) Filtration

**BIOLOGY (PART-C)**

This part contains **10 Multiple Choice Questions** number **21 to 30**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

21. Changes and development of body, habit in animals which help them to survive  
(A) adaptation (B) training  
(C) Exercise (D) Adjustment
22. Food contains \_\_\_\_\_ that keeps us healthy.  
(A) nutrients (B) all of these  
(C) components (D) substances
23. Which of these is absorbed by roots of plants from the soil?  
(A) Water (B) Nutrients  
(C) Both (A) & (B) (D) None of these
24. Hibernation means:  
(A) Winter sleep of the animals  
(B) Summer-sleep of the animals  
(C) Blending-behaviour of an animal with its surrounding  
(D) None of these
25. Camouflage means:  
(A) resemblance of one species with another species  
(B) Interaction of organism with environment  
(C) Blending-behaviour of an animal with its surrounding  
(D) Development of plants and animals over years of time
26. Native place where animals live is called  
(A) habitat (B) forest  
(C) home (D) none of these
27. Bone at the centre of the chest is  
(A) Femur (B) Limbs  
(C) Ulna (D) Sternum
28. Which among the following is not included in a balanced diet?  
(A) Roughage (B) Minerals  
(C) Protein (D) None of these
29. In the process of breathing we inhale  
(A) Air (B) Oxygen  
(C) Nitrogen (D) Carbon dioxide
30. Afforestation refers to  
(A) Cutting of trees (B) Planting of trees  
(C) Burning of trees (D) None of these

**Section – II****Time: 40 Minutes****MATHEMATICS – (PART – A)**

*This part contains 30 Multiple Choice Questions number 31 to 60. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.*

31. In a primary school with strength 600, there are 100 students in Nursery, Lower KG and KG 50% of all students are boys and 50% are girls.  
How many students are boys ?  
(A) 100 (B) 200  
(C) 300 (D) 400
32. Find the average of 5 primes between 15 and 35.  
(A) 23.5 (B) 23.6  
(C) 23.7 (D) 23.8
33. If  $510.237 = 5A + B + \frac{23}{C} + \frac{7}{D}$  then find value of  $A + B + C + D$ .  
(A) 1200 (B) 1210  
(C) 1310 (D) 1300
34. If Ramya types 180 words in 4 minutes, how many words will she type in 9 minutes?  
(A) 405 (B) 450  
(C) 80 (D) 360
35. The value of  $-84 \times 13 + 365$  is equal to  
(A) 627 (B) -727  
(C) -627 (D) 727
36.  $0.04 \times 0.0162 = ?$   
(A) 6.48 (B) 0.00648  
(C) 64.8 (D) 0.000648
37. What is the sum of the reciprocals of 8 and  $\frac{1}{6}$ .  
(A)  $6\frac{1}{8}$  (B)  $\frac{8}{49}$   
(C)  $8\frac{1}{6}$  (D)  $\frac{6}{49}$
38. Two numbers are in the ratio 7 : 9. If the sum of the numbers is 112, then the greater number is:  
(A) 63 (B) 42  
(C) 49 (D) 72

39. If  $121 \times 169 = 143 \times X$  then X is  
 (A) 143 (B) 121  
 (C) 13 (D) 11
40. If  $\angle A$  of a  $\triangle ABC$  measure  $56^\circ$ ,  $\angle C = 3\angle B$ , find the measure of  $\angle B$ .  
 (A)  $62^\circ$  (B)  $31^\circ$   
 (C)  $93^\circ$  (D)  $56^\circ$
41. The L.C.M. of 12, 24 and 36 is  
 (A) 24 (B) 36  
 (C) 108 (D) 72
42. Simplify  $\frac{1}{3 - \frac{1}{2 - \frac{1}{5/7}}}$ .  
 (A)  $\frac{2}{3}$  (B)  $\frac{3}{5}$   
 (C)  $\frac{3}{4}$  (D)  $\frac{2}{5}$
43. If  $\frac{4}{5}$  of a number exceeds its  $\frac{2}{3}$  by 8, then the number is  
 (A) 30 (B) 45  
 (C) 90 (D) 60
44. Simplify  $\frac{5 - \frac{1}{4}}{1 - \frac{9}{20} + 1\frac{3}{10}}$   
 (A)  $\frac{4}{11}$  (B)  $\frac{3}{11}$   
 (C)  $\frac{2}{11}$  (D) None
45. A machine prints 1500 news papers in 45 min. How many news papers will be printed in 2 hrs?  
 (A) 3000 (B) 4000  
 (C) 2000 (D) 1000
46. The value of  $12.05 \times 5.4 \div 0.6$  is equal to  
 (A) 108.45 (B) 109.45  
 (C) 111.45 (D) 1084.5
47. If  $(321 \times 9) - x = 2888$ , then x =  
 (A) 1 (B) 0  
 (C) 2 (D) 3
48. Find the average of 2, 4, 6, 3, 7, 9, 4  
 (A) 0 (B) 1  
 (C) 5 (D) 3

49. Find the sum of the following  $\left(\frac{1}{2} + \frac{1}{6} + \frac{1}{12} + \frac{1}{30} + \frac{1}{42} + \frac{1}{56} + \frac{1}{72} + \frac{1}{90} + \frac{1}{110} + \frac{1}{132}\right)$ .
- (A)  $\frac{113}{1250}$  (B)  $\frac{13}{15}$   
 (C)  $\frac{87}{89}$  (D)  $\frac{219}{213}$
50. The number of prime factors in the expression  $(6)^{10} \times (7)^{15} \times (13)^{27}$  is
- (A) 5 (B) 3  
 (C) 6 (D) 4
51. Which shape, from all the options given below, has all the sides equal in length and all angles equal in measure always?
- (A) Triangle (B) Rectangle  
 (C) Square (D) Quadrilateral
52. How many zeros will the number obtained as the value of  $2^5 \times 5^3$  contain?
- (A) 2 (B) 3  
 (C) 5 (D) 8
53. Suppose N is a prime number among 21, 29, 33, 39. What is the next prime number to N?
- (A) 23 (B) 31  
 (C) 29 (D) 37
54. What is the value of  $[5 \times \{2 - (-3)\}^2 - 4]$ ?
- (A) 121 (B) 91  
 (C) 1 (D) 15
55. What is the product of first 8 prime numbers?
- (A) 9691969 (B) 5110519  
 (C) 510510 (D) 9699690
56. If the sum of two consecutive multiples of 7 is 91, what is their product?
- (A) 1715 (B) 2352  
 (C) 1470 (D) 2058
57. If a number is divisible by all the numbers (6, 9 and 11), what is the sum of digits of that least number?
- (A) 18 (B) 14  
 (C) 15 (D) 17
58. What is the greatest common divisor of 126 and 315?
- (A) 9 (B) 126  
 (C) 63 (D) 13
59. The number of whole numbers between the smallest whole number and the greatest 2-digit number is
- (A) 88 (B) 99  
 (C) 101 (D) 98
60. In covering 156 km a car consumes 6 litres of petrol. How many kilometres will it go in 8 litres of petrol?
- (A) 208 km (B) 185 km  
 (C) 205 km (D) 268 km



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## ANSWER KEY

1.	D	2.	A	3.	D	4.	C
5.	B	6.	A	7.	B	8.	B
9.	D	10.	C	11.	D	12.	C
13.	B	14.	D	15.	A	16.	B
17.	D	18.	C	19.	C	20.	C
21.	A	22.	A	23.	C	24.	A
25.	C	26.	A	27.	D	28.	D
29.	A	30.	B	31.	C	32.	D
33.	B	34.	A	35.	B	36.	D
37.	A	38.	A	39.	A	40.	B
41.	D	42.	C	43.	D	44.	A
45.	B	46.	A	47.	A	48.	C
49.	B	50.	D	51.	C	52.	B
53.	B	54.	A	55.	D	56.	D
57.	A	58.	C	59.	D	60.	A