FIITJEE

Diagnostic cum Scholarship Tests

SAMPLE PAPER

For Students of Class VII

Paper 2 - NTSE Science & Mathematics

Duration : 80 minutes   **Paper Code: 67-2**   *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.*

1. 1/10 decade is equal to
    (A) 20 years   (B) 1 year
    (C) 5 years   (D) 15 years

2. A combination of two or more cells is called a:
    (A) conductor   (B) circuit
    (C) bell   (D) battery

3. Which of the following is random motion?
    (A) Car moving on a straight road   (B) Athlete running on a circular track
    (C) To-and-fro motion of a pendulum   (D) Motion of a football player in ground

4. According to the laws of reflection
    (A) $\angle i = \angle r$
    (B) $\angle i < \angle r$
    (C) $\angle i > \angle r$
    (D) none of these

5. In an electric bulb, electric energy is converted into:
    (A) sound energy   (B) mechanical energy
    (C) light energy   (D) magnetic energy

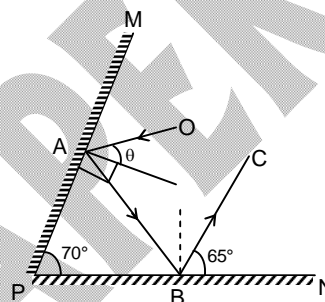6. Which of the following distance-time graph is incorrect for a moving object?

    (A)   (B)

    (C)   (D)
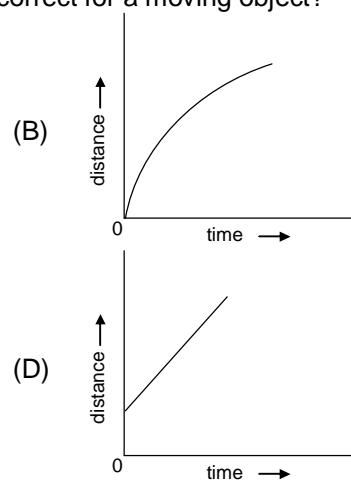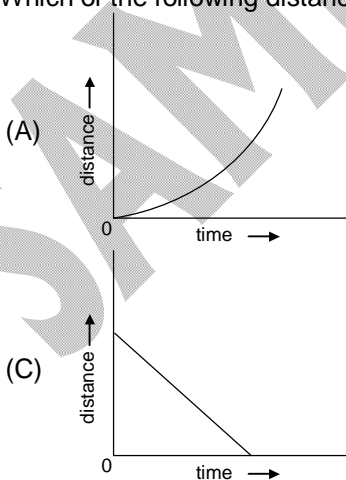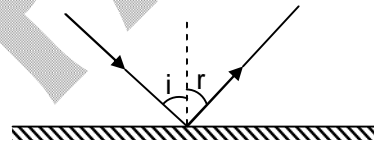
7. In which of the following circuits bulb will glow?

(A)

(B)

(C)

(D)
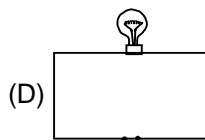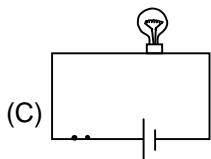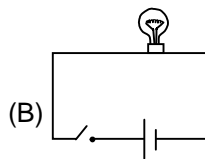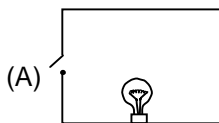
8. In the given figure, find θ which is formed by the first incident ray with the normal?
   (A) 25°
   (B) 65°
   (C) 45°
   (D) 70°

9. Around current carrying conductor, there is
   (A) Magnetic field   (B) No magnetic field
   (C) Zero gravity   (D) None of these

10. Magnets are stored safely in
    (A) Water   (B) Soft-iron keepers
    (C) Plastic box   (D) None of these

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. Spinning is:
    (A) the process of making yarn from fibre
    (B) the process of removing cotton seeds from cotton bolls
    (C) the process involves pulling and twisting of a fibre
    (D) Both (A) and (C)

12. Interlooping of yarn is called
    (A) knitting   (B) ginning
    (C) weaving   (D) spinning

13. Which of the following properties of gases makes water a vital component for aquatic animals?
    (A) Solubility   (B) Transparency
    (C) Diffusion   (D) Conductivity

14. Winnowing is useful only when:
    (A) two solids have different melting points
    (B) two solids have different boiling points
    (C) two solids have different magnetic properties
    (D) two solids have different weights

15. Select the correct statement from the following.
    (A) Polyester is obtained from plant stem
    (B) Jute is the outer covering of coconut
    (C) Spinning is a process of making fibers
    (D) The yarn is made from fibers

16. Which of the following set of items represents transparent objects?
    (A) Air, glass, cupboard   (B) Blackboard, bags, plywood
    (C) Glass beaker, water, air   (D) Book, thermocol, cardboard

17. A solution in which no more substance can be dissolved at a given temperature is called a/an……….............solution.
    (A) Saturated   (B) Unsaturated
    (C) Evaporated   (D) Immiscible

18. Oil and water:
    (A) do not mix with each other, they are immiscible liquids
    (B) do not mix with each other and so, they are miscible liquids
    (C) mix with each other and so, they are miscible liquids
    (D) none of the above

19. Deep sea divers and mountaineers carry cylinders filled with
    (A) Ozone + Nitrogen   (B) Oxygen + Helium
    (C) Nitrogen + Oxygen   (D) CO_2 + Oxygen

20. Water is used as coolant in vehicles due to its
    (A) Low specific heat   (B) High specific heat
    (C) Solubility   (D) Transparent look

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. We get cereals from:
    (A) Animals   (B) Plants
    (C) (A) and (B) both   (D) Factories

22. Which of the following food components does not provide any nutrients?
    (A) Milk   (B) Water
    (C) Fruit Juice   (D) Vegetable soup

23. Which of the following type of plants has thick, hard and woody stem?
    (A) Tree   (B) Shrub
    (C) Herb   (D) All of these

24. Animal products are rich in
   (A) proteins
   (B) calcium
   (C) minerals
   (D) carbohydrates

25. Which of the following mineral functions by building strong bones and teeth?
   (A) Iodine
   (B) Calcium
   (C) Iron
   (D) Sodium

26. Egg is a rich source of
   (A) Proteins
   (B) Vitamins
   (C) Minerals
   (D) All of these

27. Which of the following food items is the best source of plant proteins?
   (A) Milk
   (B) Egg
   (C) Legumes
   (D) Cheese

28. The skeleton provides _____ to the body.
   (A) muscles
   (B) ability
   (C) framework
   (D) backbone

29. The muscles present in heart are called
   (A) cardiac muscles
   (B) Skeletal muscles
   (C) both (A) and (B)
   (D) None of these

30. Which of following have edible leaves?
   (A) Banana
   (B) Mustard
   (C) Bamboo
   (D) Sugarcane

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. The unit digit in the difference of $(7^{95} – 3^{58})$ is equal to :
   (A) 0
   (B) 4
   (C) 6
   (D) 7

32. The value of digit A in 8928A if it is divisible by 10 is equal to
   (A) 5
   (B) 9
   (C) 0
   (D) 1

33. $27 - \left[15 - \left\{16 - \left(5 - \overline{4-1}\right)\right\}\right] = ?$
   (A) 25
   (B) 23
   (C) 24
   (D) None of these

34.   Quotient =

(A) $\dfrac{\text{Divisor} - \text{Remainder}}{\text{Dividend}}$ (B) $\dfrac{\text{Dividend} - \text{Remainder}}{\text{Divisor}}$

(C) $\dfrac{\text{Dividend} + \text{Remainder}}{\text{Divisor}}$ (D) None of these

35.   Find the value of $51 \times 53 - 53 \times 51$
        (A) 2   (B) 0
        (C) 215   (D) None of these

36.   Multiply : 2056 by 87 =
        (A) 178872   (B) 1458854
        (C) 145854   (D) 178882

37.   Find the value of $||10| + |-5| - |16||$
        (A) 1   (B) 2
        (C) –1   (D) – 10

38.   Which of the following is not a factor of 94 ?
        (A) 2   (B) 47
        (C) 17   (D) 1

39.   The sum of the digits of a two-digit number is 8. The number obtained by interchanging its digits
        is 18 more than the original number. The original number is
        (A) 35   (B) 40
        (C) 30   (D) 20

40.   Number of multiples of 9 upto 100 are
        (A) 12   (B) 9
        (C) 11   (D) 10

41.   When three or more lines pass through the same point, the lines are
        (A) Concurrent   (B) Collinear
        (C) Straight   (D) None of these

42.   If the angles of a Δ are in the ratio of 1 : 3 : 5. then what is value of the smallest angle?
        (A) 20º   (B) 60º
        (C) 100º   (D) 50º

43.   Complement of 75º is ?
        (A) 15º   (B) 85º
        (C) 105º   (D) 115º

44.   From the figure if PQ||RS find $\angle$PXR .

        (A) 120º   (B) 50º
        (C) 70º   (D) 110º
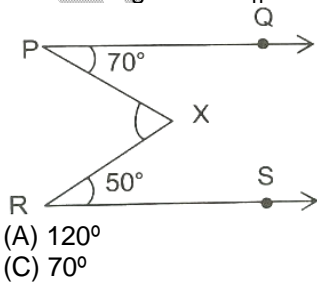
45. Find the cost of fencing of a triangular field at the rate of Rs 30 per metre. The measures of sides of triangular field are 10 m, 40 m and 55 m .
    (A) Rs 3120   (B) Rs 3000
    (C) Rs 3150   (D) Rs 3128

46. A three digit number pqr has hundreds digit p, tens digit q, units digit r. Two more numbers qrp and rpq are formed by rearranging the digit of original number. The sum pqr + qrp + rpq is always divisible by
    (A) 27   (B) 37
    (C) 47   (D) 57

47. Select the correct option
    (A) $50 = 32 + 16 + 2$ (B) $50 = 2 \times 27 - 4$
    (C) $50 = 2 \times 25$ (D) all of these

48. By what number should $1\dfrac{1}{2}$ be divided to get $\dfrac{2}{3}$?

    (A) $2\dfrac{2}{3}$ (B) $1\dfrac{2}{3}$

    (C) $\dfrac{4}{9}$ (D) $2\dfrac{1}{4}$

49. Sum of $2\dfrac{37}{8}$, $2\dfrac{5}{16}$ and $2\dfrac{7}{24}$ is

    (A) $7\dfrac{7}{24}$ (B) $47\dfrac{47}{48}$

    (C) $11\dfrac{11}{48}$ (D) $17\dfrac{17}{48}$

50. A sum of money is to be distributed among A, B, C, D in the proportion of 5 : 2 : 4 : 3. If C gets Rs 1000 more than D, what is B's share?
    (A) Rs 500   (B) Rs 2000
    (C) Rs 1500   (D) none of these

51. The total weight of a bag containing 13 kg 750 g of potatoes and 8 kg 80 g of tomatoes is 22 kg 200 g. How much is the weight of the empty bag?
    (A) 370 g   (B) 160 g
    (C) 100 g   (D) none of these

52. In covering 222 km , a car consumes 12 litres of petrol. How many kilometers will it go in 10 litres of petrol?
    (A) 172 km   (B) 185 km
    (C) 205 km   (D) 266.4 km

53. If $\dfrac{a}{3} = \dfrac{b}{4} = \dfrac{c}{7}$, then $\dfrac{a+b+c}{c}$ is equal to

    (A) 7   (B) $\dfrac{1}{2}$

    (C) $\dfrac{1}{7}$ (D) 2

54. Replace w with a suitable number to make the statement true :

$13\dfrac{w}{12} + 2\dfrac{1}{12} = 15.5$

(A) 7   (B) 5

(C) 8   (D) 2

55. $1 + \dfrac{1}{2} + \dfrac{1}{4} + \dfrac{1}{7} + \dfrac{1}{14} + \dfrac{1}{28}$ is equal to

(A) 2   (B) 2.5

(C) 3   (D) 3.5

56. 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

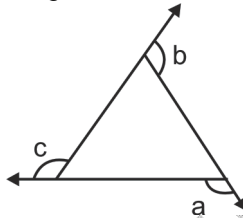(C) 5 : 3   (D) None of these

57. A cube of edge 9 cm is cut into x cubes each of edge 3 cm. Then x is

(A) 54   (B) 9

(C) 27   (D) 81

58. Thrice of a number when increased by 6 gives 24. The number is

(A) 6   (B) 7

(C) 8   (D) 11

59. In figure, a + b + c is equal to

(A) 135º   (B) 180º

(C) 270º   (D) 360º

60. The sides of a rectangle are in the ratio 5 : 4. If its perimeter is 72 cm, then one of its length is

(A) 40 cm   (B) 30 cm

(C) 20 cm   (D) None of these

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Paper 2 - NTSE Science & Mathematics

Paper Code: 67-2

ANSWER KEY

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