

Sample Paper

for Students presently in Class VII

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

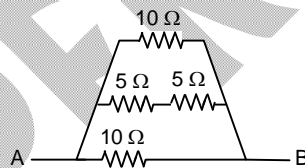
Time: 45 Minutes

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. The resultant resistance between point A and B is

- (A) $\frac{10}{3} \Omega$ (B) $\frac{10}{4} \Omega$
(C) $\frac{10}{6} \Omega$ (D) 10Ω

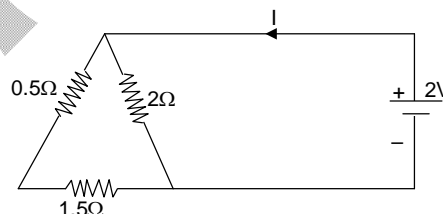


2. What mass of a liquid A of specific heat capacity $0.84 \text{ J g}^{-1} \text{ K}^{-1}$ at a temperature 40°C must be mixed with 100 g of a liquid B of specific heat capacity $2.1 \text{ J g}^{-1} \text{ K}^{-1}$ at 20°C , so that the final temperature of mixture becomes 32°C ?

- (A) 400 g (B) 500 g
(C) 600 g (D) 375 g

3. Value of current

- (A) in the circuit is $\frac{1}{2} \text{ A}$
(B) in the circuit is 2 A
(C) through 2Ω resistor is 1 A
(D) both (B) and (C)



4. A polished silvery surface is

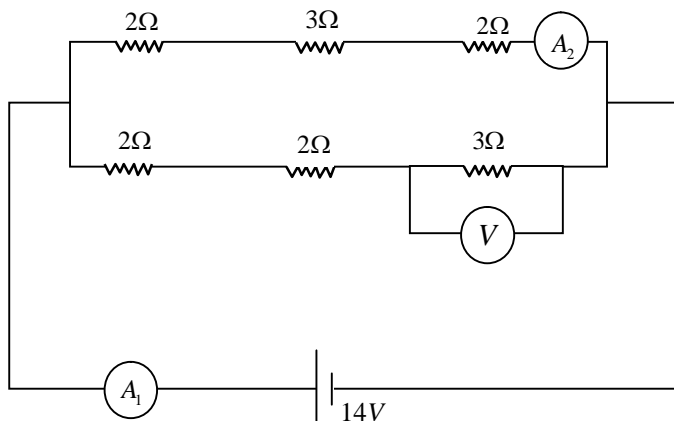
- (A) Good absorber of heat (B) Good reflector of heat
(C) Poor reflector of heat (D) None of these

5. Rise in temperature by 1498°C in Kelvin is equal to

- (A) Rise in temperature by 32 K (B) Same rise
(C) Rise in temperature by 273 K (D) Insufficient information

6. The reading of ammeter (A_1) in the circuit shown below is

- (A) 2A
(B) 4A
(C) 6A
(D) zero



7. The shape of the cloud of the tornado is
(A) cylindrical shaped (B) cone shaped
(C) sphere shaped (D) linear

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. Crystallisation is a:
(A) chemical change (B) physical change
(C) irreversible change (D) all of these
9. Which of the following methods is not used for the prevention of corrosion?
(A) greasing (B) painting
(C) plating (D) scratching
10. Which layer of soil prevents the minerals from being washed away by water?
(A) Parent rock (B) Subsoil
(C) Humus (D) Bed rock
11. Wasp stings can be treated with:
(A) baking soda (B) vinegar
(C) washing soda (D) milk of magnesia
12. Galvanization is a method to
(A) protect the iron metal from corrosion
(B) extract iron from its ore
(C) protect food from rancidity
(D) improve the ductility property of the metal
13. Caustic soda is the common name for:
(A) $Mg(OH)_2$ (B) KOH
(C) $Ca(OH)_2$ (D) NaOH
14. Which type of silk is most commonly used known as wild silk
(A) Tassar silk (B) Mussel silk
(C) Eri silk (D) Muga silk

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. The main function of the lacteals of intestine is the absorption of
(A) Amino acids (B) Glucose and vitamins
(C) Lactic acid (D) Fatty acids and glycerol
16. Which of the following pair of teeth are used for chewing and grinding of teeth?
(A) Canines and incisors (B) Molars and premolars
(C) Incisors and molars (D) Premolars and canines

17. Blood platelets help in
(A) Formation of urine (B) Excretion of urine
(C) Sweating (D) Blood clotting
18. When breakdown of glucose occurs with the use of oxygen, it is called
(A) Anaerobic respiration (B) Aerobic respiration
(C) Regular respiration (D) All of these
19. Given below are some adaptive features of animals:
(i) Layer of fat under the skin (ii) Long, curved and sharp claws
(iii) Slippery body (iv) Thick white fur
Which of them are the adaptive features of a polar bear?
(A) (i) only (B) (i) and (ii) only
(C) (i), (ii) and (iii) only (D) (i), (ii) and (iv) only
20. Read the following environmental conditions of tropical rain forests:
(i) Hot and humid climate (ii) Unequal lengths of day and night
(iii) Abundant rain fall (iv) Abundant light and moisture
Identify the conditions from the above list that are responsible for the presence of large number of plants and animals in tropical rain forests.
(A) (i) and (ii) (B) (i) and (iii)
(C) (i), (iii) and (iv) (D) (ii) and (iv)
21. Which is the characteristic feature of tropical rainforests?
(A) Hot and humid climate (B) Enormous number and variety of animals
(C) Competition for food and shelter (D) All of these

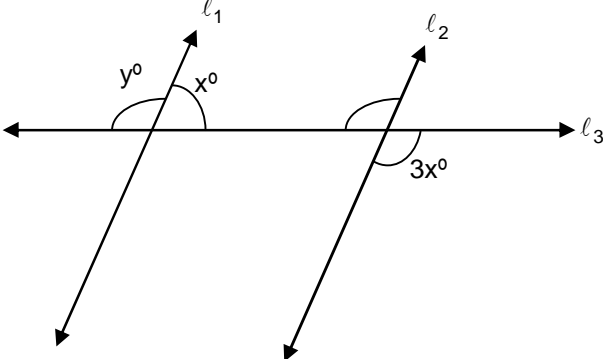
Section - II

Time: 45 Minutes

MATHEMATICS - (PART - A)

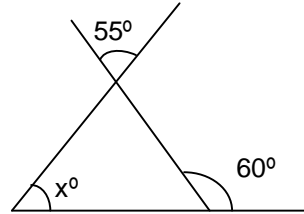
This part contains 21 Multiple Choice Questions number 22 to 42. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

22. If $a : b = 5 : 7$, then $(3a + 5b) : (5a - 2b)$ is equal to:
(A) 40 : 7 (B) 50 : 11
(C) 35 : 9 (D) 17 : 5
23. Find discount in percent when M.P. = Rs 625 and S.P = Rs 562.50
(A) 20% (B) 15%
(C) 10% (D) 5%
24. The ages of A and B are in the ratio 3 : 8, six years hence, their ages will be in the ratio 4 : 9. The present age of A is
(A) 18 years (B) 15 years
(C) 12 years (D) 21 years
25. On increasing the salary of a man by 25%, it becomes Rs 20000. What was his original salary?
(A) Rs 15000 (B) Rs 16000
(C) Rs 18000 (D) Rs 25000

26. Given that x varies directly with the y when x is 3, y is 15. Find y when x is 1.
 (A) $y = 5$ (B) $y = 4$
 (C) $y = 6$ (D) $y = 7$
27. The sum of three numbers is 98. If the ratio of first to second is 2 : 3 and that of second to third is 5 : 8, then second number is
 (A) 20 (B) 30
 (C) 48 (D) 58
28. The integer which should be multiplied to (-25) to give 200, is equal to
 (A) 4 (B) -4
 (C) 8 (D) -8
29. In the given figure, $l_1 \parallel l_2$. Find the value of $\angle y - \angle x$.
 (A) 80°
 (B) 95°
 (C) 85°
 (D) 90°
- 
30. If two angles a and b form a linear pair and also $(a - b) = 80$, find the values of a and b .
 (A) 130° and 50° (B) 150° and 30°
 (C) 120° and 40° (D) 110° and 50°
31. One of the acute angles of a right Δ is 58° then the other acute angle is
 (A) 60° (B) 20°
 (C) 32° (D) None
32. The value of $3 - \frac{1}{2} - \frac{1}{6} - \frac{1}{12} - \frac{1}{20} - \frac{1}{30} - \frac{1}{42} - \frac{1}{56}$ is
 (A) $\frac{15}{8}$ (B) $\frac{19}{8}$
 (C) $\frac{17}{8}$ (D) None of these
33. The mean of five numbers is 27. If one of the numbers is excluded, the mean gets reduced by 2. The excluded number is
 (A) 35 (B) 27
 (C) 25 (D) 40
34. If mean of the observations 2, 8, 1, 6, 5, $x + 1$, 3, $x + 3$ is 4 then find the value of x .
 (A) 2.5 (B) 1.5
 (C) 1.7 (D) 3.5

35. The value of x in the given figure will be

- (A) 15°
 (B) 10°
 (C) 20°
 (D) 5°



36. A ladder 25 m long reaches a window of a building, 20 m above the ground, the distance of the foot of the ladder from the building is

- (A) 15 m
 (B) 20 m
 (C) 30 m
 (D) None

37. A bug limbs 3 inches up a tree each day and then slides down the tree 1 inch at night. After 6 days and 5 nights, how many inches has the bug moved up from its starting point?

- (A) 14 inches
 (B) 13 inches
 (C) 12 inches
 (D) 11 inches

38. If $\left(\frac{z}{4} - \frac{3}{5}\right) \div \left(\frac{4}{3} - 7z\right) = \frac{-3}{20}$ then value of z is equal to

- (A) 0
 (B) 1
 (C) $\frac{1}{2}$
 (D) $-\frac{1}{2}$

39. Hamid has 3 boxes of different fruits. Box A weighs $2\frac{1}{2}$ kg more than box B and box C weighs $10\frac{1}{4}$ kg more than box B. The total weight of the boxes is $48\frac{3}{4}$ kg. How many kg does box A weight?

- (A) 12 kg
 (B) 13.5 kg
 (C) 14 kg
 (D) 14.5 kg

40. If $\frac{547.527}{0.0082} = x$, then the value of $\frac{547527}{82}$ is

- (A) $\frac{x}{10}$
 (B) $10x$
 (C) $100x$
 (D) None

41. The value of a quantity decreases by 20% and again increases to 20%. So by what % does the value of the quantity decrease ?

- (A) 1
 (B) 2
 (C) 3
 (D) 4

42. The value of $3\frac{1}{12} - \left[1 + \frac{3}{4} + \left\{2\frac{1}{2} - \left(1\frac{1}{2} - \frac{1}{3}\right)\right\}\right]$ is

- (A) 0
 (B) 2
 (C) 3
 (D) 4

DRONACHARYA

360° DIAGNOSTIC & SCHOLARSHIP EXAM

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ANSWER KEY

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