

Sample Paper

Aakash
NATIONAL
TALENT HUNT EXAMANTHE
— 2021 —**(Class VIII Studying Moving to Class IX)****Science, Mathematics & Mental Ability**

INSTRUCTIONS FOR CANDIDATE

1. Duration of Test is 1 hr.
2. The Test booklet consists of **35** questions. The maximum marks are **90**. There is **no negative marking** for wrong answer.
3. Pattern of the questions are as under:
 - (i) The question paper consists of five parts i.e., Physics, Chemistry, Biology, Mathematics and Mental Ability. Phy, Chem, Bio, Maths have **four sections** and Mental Ability has **two sections**.
 - (ii) **Section-I:** This section contains **21** multiple choice questions, which have **only one** correct answer. Each question carries **+2 marks** for correct answer.
 - (iii) **Section-II:** This section contains **6** multiple choice questions, in which **more than one** answer may be correct. Each question carries **+4 marks** for correct answer.
 - (iv) **Section-III:** This section contains **4** multiple choice questions based on Assertion & Reason Type, which have **only one** correct answer. Each question carries **+2 marks** for correct answer.
 - (v) **Section-IV:** This section contains **4** questions. Each question has two matching Columns. Column-I has four entries (A, B, C, D) and Column-II has four entries (P, Q, R, S). Each entry in Column-I may match with one or more entries in Column-II. Each question carries **+4 marks** for correct answer.

**Aakash**
+ BYJU'S

Aakash National Talent Hunt Exam 2021

Sample Paper

(Class VIII Studying Moving to Class IX)

(The questions given in sample paper are indicative of the level and pattern of questions that will be asked in ANTHE-2021)

Time : 1 Hour

MM : 90

PHYSICS

SECTION-I : SINGLE ANSWER TYPE

This section contains 4 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

- The ratio of amplitudes of two sound waves is 9 : 49, their loudness will be in the ratio
 - 3 : 7
 - 81 : 2401
 - 13 : 53
 - 2401 : 81
- When electrodes are immersed in water, and a current is passed, bubbles of oxygen and hydrogen are produced. Oxygen bubbles formed on the electrode connected to the (i) terminal(s) and hydrogen bubbles formed on the electrode connected to the (ii) terminal(s) of the battery.
 - Positive, negative
 - Negative, positive
 - Negative, both
 - Both, both
- A pendulum is oscillating with frequency of 10 Hz. The minimum time taken by the bob to reach its mean position from any extreme position is
 - 0.05 s
 - 0.1 s
 - 0.025 s
 - 0.25 s
- Vehicles have streamlined shape to reduce
 - Static friction
 - Kinetic friction
 - Rolling friction
 - Fluid friction

Space for Rough Work

7. Match the Columns.

| | Column-I | | Column-II |
|-----|--------------|-----|---|
| (A) | Electrolysis | (P) | A liquid solution which conducts electric current |
| (B) | Electrolyte | (Q) | Chemical decomposition of a liquid on passing an electric current |
| (C) | Bulb | (R) | Heating effect of electric current |
| (D) | Electrodes | (S) | Metal rods through which current enters or leaves an electrolyte |

CHEMISTRY**SECTION-I : SINGLE ANSWER TYPE**

This section contains 4 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

8. An example of thermoplastic is

- (1) PVC
- (2) Nylon
- (3) Melamine
- (4) Bakelite

9. A synthetic fibre which looks like silk is obtained by chemical treatment of wood pulp. This synthetic fibre is

- (1) Nylon
- (2) Cotton
- (3) PET
- (4) Rayon

Space for Rough Work

10. Ramesh prepared a blue coloured solution of salt of metal M_1 in beaker 'A' and placed some iron nails in it. Neeshu prepared same solution in another beaker 'B' and placed some pieces of metal M_2 in it. They observed that the colour of beaker 'A' and beaker 'B' turned green and colourless respectively. Identify the metals M_1 , M_2 and final solutions in beaker 'A' and 'B' and choose the correct option.

| | Metal M_1 | Metal M_2 | Solution in beaker 'A' | Solution in beaker 'B' |
|-----|-------------|-------------|------------------------|------------------------|
| (1) | Cu | Zn | ZnSO ₄ | FeSO ₄ |
| (2) | Cu | Mg | CuSO ₄ | MgSO ₄ |
| (3) | Cu | Zn | CuSO ₄ | ZnSO ₄ |
| (4) | Cu | Zn | FeSO ₄ | ZnSO ₄ |

11. A compound 'X' is formed when sulphur dioxide is dissolved in water. The chemical formula of 'X' and its nature respectively are
- (1) H₂SO₄ and acidic
 - (2) H₂SO₃ and acidic
 - (3) H₂SO₃ and basic
 - (4) H₂SO₄ and basic

SECTION-II : MORE THAN ONE ANSWER TYPE

This section contains 1 multiple choice question, which has 4 choices (1), (2), (3) and (4) out of which **MORE THAN ONE** answer may be correct.

12. Choose the correct option(s).
- (1) Fabric made from polyester fibre does not get wrinkled easily
 - (2) Terylene is a popular polyester
 - (3) A nylon thread is stronger than a steel wire
 - (4) Natural fabrics soak less water than the synthetic fabrics

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SECTION-III : ASSERTION & REASON TYPE

This section contains 1 Assertion-Reason type question, which has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

13. **A :** Sodium is stored in kerosene.

R : Sodium reacts vigorously with oxygen and water.

- (1) Both (A) and (R) are true and (R) is the correct explanation of (A)
 (2) Both (A) and (R) are true but (R) is not the correct explanation of (A)
 (3) (A) is true but (R) is false
 (4) (A) is false but (R) is true

SECTION-IV : MATRIX MATCH TYPE

This section contains 1 Matrix Match type question, which has 2 Columns (Column I and Column II). Column I has four entries (A), (B), (C) and (D), Column II has four entries (P), (Q), (R) and (S). Match the entries in Column I with the entries in Column II. Each entry in Column I may match with one or more entries in Column II.

For each entry in Column I, tick the boxes of all the matching entries in Column II. For example, if entry (A) in Column I matches with entries (P) & (S) in Column II, then tick the boxes (P) & (S). Similarly, tick the boxes for entries (B), (C) and (D).

| | P | Q | R | S |
|----|-------------------------------------|--------------------------|--------------------------|-------------------------------------|
| A. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| B. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| D. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

14. Match the Columns.

| | Column-I | | Column-II |
|-----|----------|-----|-----------------|
| (A) | Jute | (P) | Mixed fibre |
| (B) | PVC | (Q) | Natural fibre |
| (C) | Polycot | (R) | Flame resistant |
| (D) | Melamine | (S) | Plastic |

Space for Rough Work

SECTION-III : ASSERTION & REASON TYPE

This section contains 1 Assertion-Reason type question, which has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

20. **A :** Plant cell has a big central vacuole unlike the number of small vacuoles in animal cells.
R : Plant cells lack chloroplast and cell wall.
- (1) Both (A) and (R) are true and (R) is the correct explanation of (A)
 - (2) Both (A) and (R) are true but (R) is not the correct explanation of (A)
 - (3) (A) is true but (R) is false
 - (4) (A) is false but (R) is true

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| | P | Q | R | S |
|----|-------------------------------------|--------------------------|--------------------------|-------------------------------------|
| A. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| B. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| D. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

21. Match the Columns.

| | Column-I (Agricultural implements) | | Column-II (Their features/Uses) |
|-----|---|-----|--|
| (A) | Drip system | (P) | It is used to irrigate crop fields |
| (B) | Rahat | (Q) | It is used to plough fields |
| (C) | Combine | (R) | It is a modern method of irrigation |
| (D) | Cultivator | (S) | It is a harvester and thresher |

Space for Rough Work

MATHEMATICS**SECTION-I : SINGLE ANSWER TYPE**

This section contains 4 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

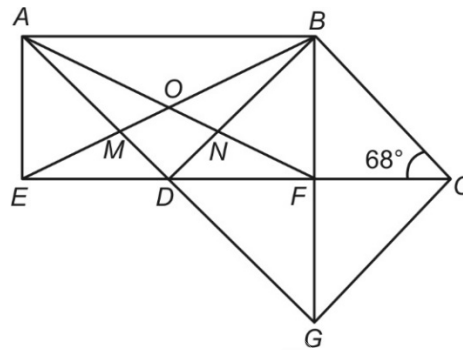
22. Ayaan's age is one-sixth of her mother's age. Ayaan's mother's age will be twice of Arun's age after 10 years. If Arun's ninth birthday was celebrated one year before, then Ayaan's present age is (in years)
- (1) 4
(2) 5
(3) 6
(4) 7
23. If $(15.86 \times 15.86 + 15.86 \times x + 0.13 \times 0.13)$ is a perfect square, then $(100x)^2$ is
- (1) 67600
(2) 57600
(3) 576
(4) 676
24. Simple interest on a certain sum of money for 5 years at 5% per annum is half the compound interest on ₹ 3000 for 2 years at 10% per annum. The sum placed on simple interest is
- (1) ₹ 1320
(2) ₹ 1260
(3) ₹ 1460
(4) ₹ 1275
25. How many two digit perfect square numbers are there whose unit's digit is a perfect cube?
- (1) 1
(2) 3
(3) 4
(4) 2

Space for Rough Work

SECTION-II : MORE THAN ONE ANSWER TYPE

This section contains 1 multiple choice question, which has 4 choices (1), (2), (3) and (4) out of which **MORE THAN ONE** answer may be correct.

26. In the given figure, $ABFE$ and $BDGC$ are rhombus and $ABCD$ is a parallelogram. Which of the following option(s) is/are correct? (Where ADG is a line segment)



- (1) $\angle ADB = \angle DGC = 44^\circ$
 (2) $\angle EBD = 23^\circ$
 (3) $\angle AMO = 36^\circ$
 (4) $\angle DNF = 67^\circ$

SECTION-III : ASSERTION & REASON TYPE

This section contains 1 Assertion-Reason type question, which has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

27. **A** : For any three rational numbers, a , b and c , $a + (b + c) = (a + b) + c$.
R : Addition is associative for rational numbers.
- (1) Both (A) and (R) are true and (R) is the correct explanation of (A)
 (2) Both (A) and (R) are true but (R) is not the correct explanation of (A)
 (3) (A) is true but (R) is false
 (4) (A) is false but (R) is true

Space for Rough Work

SECTION-IV : MATRIX MATCH TYPE

This section contains 1 Matrix Match type question, which has 2 Columns (Column I and Column II). Column I has four entries (A), (B), (C) and (D), Column II has four entries (P), (Q), (R) and (S). Match the entries in Column I with the entries in Column II. Each entry in Column I may match with one or more entries in Column II.

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| | | | | |
|----|-------------------------------------|--------------------------|--------------------------|-------------------------------------|
| | P | Q | R | S |
| A. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| B. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| D. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

28. Match the Columns.

| | Column-I | | Column-II |
|-----|---|-----|-------------------------------|
| (A) | Tickets numbered from 1 to 30 are mixed up and then a ticket is drawn at random. If the probability that the ticket drawn has a number which is an even number and also a multiple of 3 is $\frac{m}{n}$, where m and n are in lowest form, then mn is | (P) | 360 |
| (B) | The range of the data 18, 16, 14, 29, 13, 10, 12, 16, x , 12, 89, 4, 16, 17, 89, 90, 31, 4, 7, 3, 6 is a prime number, then lowest possible value of x is (where $x > 0$) | (Q) | Multiple of 6 |
| (C) | The width of the class-interval 10 – 22 is | (R) | 12 |
| (D) | The measure of total angle at the centre in a pie-chart is (in degrees) | (S) | Multiplicative identity of 13 |

Space for Rough Work

MENTAL ABILITY

SECTION-I : SINGLE ANSWER TYPE

This section contains 5 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

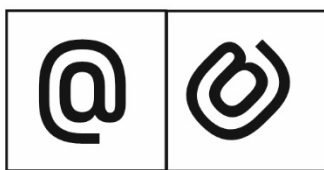
29. Choose the odd one.

- | | |
|---------------|-------------|
| (1) Square | (2) Rhombus |
| (3) Rectangle | (4) Circle |

30. Which of the following word cannot be made from the letters of the given word 'EXAMINATION'?

- | | |
|------------|---------------|
| (1) NATION | (2) ANIMATION |
| (3) NEXT | (4) MOTIONED |

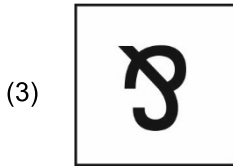
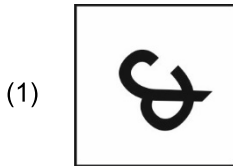
31. Choose the figure in place of '?' which has same relation with figure 'c' as figure 'a' and figure 'b' have.



(a) (b)



(c) (d)

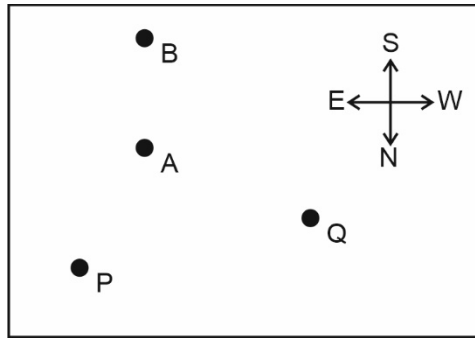


32. In a certain code language 'Ram Eat Food' is written as '123', 'Eat Healthy Food' is written as '143' and 'Ram is tall' is written as 267. The code for 'Ram' and 'Healthy' are respectively

- (1) 1 and 3
- (2) 6 and 7
- (3) 2 and 4
- (4) 4 and 6

Space for Rough Work

33. The position of point P with respect to point A in the following figure is



- (1) Southwest
- (2) Northwest
- (3) Southeast
- (4) Northeast

SECTION-II : MORE THAN ONE ANSWER TYPE

This section contains 2 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **MORE THAN ONE** answer may be correct.

34. Which of the following series has/have no wrong term?

- (1) 2, 5, 10, 17, 26, 37
- (2) 2, 9, 28, 65, 126, 217
- (3) 0, 3, 8, 15, 24, 37
- (4) 0, 7, 29, 64, 124, 215

35. Which of the following figure/s has/have more than 15 triangles?

(1)

(2)

(3)

(4)

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Perfect Score
720
2



715
720
3

1700 JEE (Advanced) 2020

(1560 Classroom + 140 Digital & Distance)

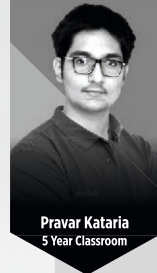


Highest Scorer
352
396
1

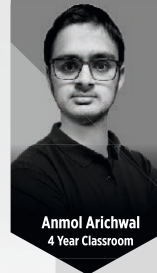


65

JEE (Main) 2021 PHASE-III



100
PERCENTILE



100
PERCENTILE

Our Result in Scholarship Exams /Olympiads

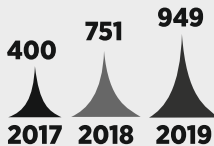
949 832 Classroom + 117 Digital & Distance NTSE (Stage-I) 2019-2020

Our 1st Rankers from Classroom Programs

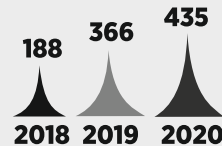


Our performance in Olympiads & Scholarship Exams Over Past 3 Years

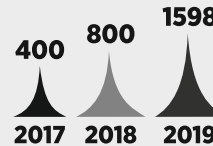
NTSE Stage-I



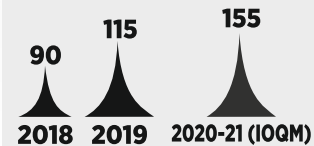
NTSE Stage-II



PRMO



RMO



AAKASHIANS OUTSHINE IN CBSE CLASS X BOARD EXAM 2020

Glimpse of our top performers



1598

1556 Classroom + 42 Digital & Distance
PRMO
2019

155

151 Classroom + 04 Digital & Distance
IOQM
2020-21

620

533 Classroom + 87 Digital & Distance
KVPY Aptitude Test
2019

521

435 Classroom + 86 Digital & Distance
KVPY Fellowship Award
2020-21

771

705 Classroom + 66 Digital & Distance
NSEs
2019

1611

1477 Classroom + 134 Digital & Distance
IMO (Level-I)
2020-21

1656

1528 Classroom + 128 Digital & Distance
NSO (Level-I)
2020-21

26

20 Classroom + 06 Digital & Distance
INO
2020

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