

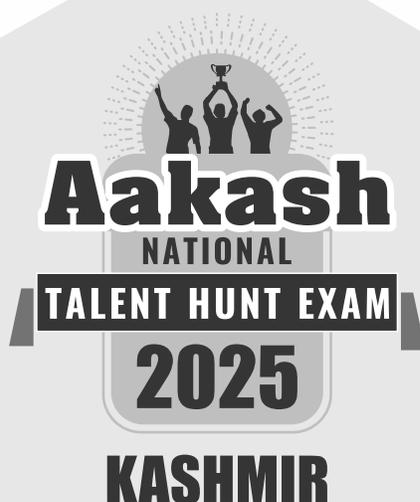
# Sample Paper

FOUNDATIONS



**Aakash**

Medical | IIT-JEE | Foundations



**(Class IX Studying Moving to Class X)**

## Science, Mathematics & Mental Ability

### INSTRUCTIONS FOR CANDIDATE

1. Duration of Test is 1 hr.
2. The Test Booklet consists of **40** 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 three parts *i.e.*, **Science, Mathematics** and **Mental Ability**. Each part has **two sections**.
  - (ii) **Section-I**: This section contains **35** multiple choice questions, which have **only one** correct answer. Each question carries **+2 marks** for correct answer.
  - (iii) **Section-II**: This section contains **5** multiple choice questions, in which **one or more than one** choice(s) is(are) correct. Each question carries **+4 marks** for correct answer.



# Aakash National Talent Hunt Exam (Kashmir)-2025

## Sample Paper

(Class IX Studying Moving to Class X)

(The questions given in sample paper are indicative of the level and pattern of questions that will be asked in ANTHE (Kashmir)-2025)

Time : 1 Hour

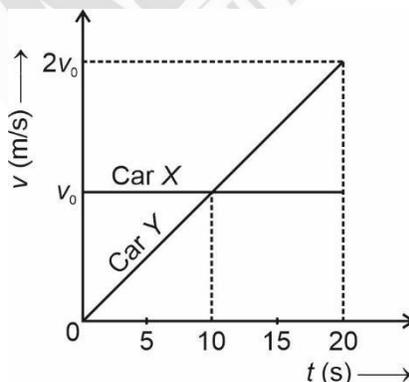
MM : 90

### SCIENCE

#### SECTION-I : SINGLE CORRECT ANSWER TYPE

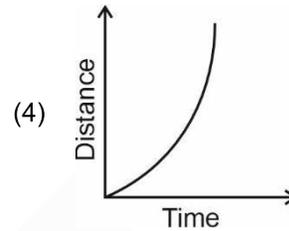
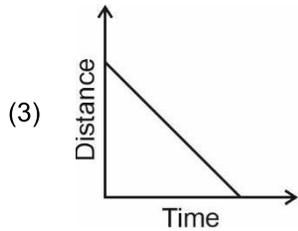
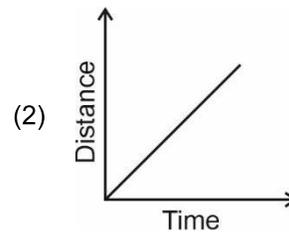
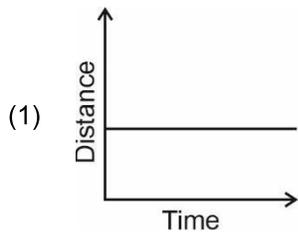
This section contains 18 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** choice is correct.

- Which of the following statement is **incorrect** about mass?
  - The mass of an object is the measure of its inertia
  - It is the quantity of matter contained in a body
  - Greater the mass of a body more will be its inertia
  - The mass of an object on the moon is one-sixth of mass on the earth
- The given figure shows velocity ( $v$ )-time ( $t$ ) graph for cars X and Y. At time  $t = 0$ , car X passes car Y. If both the cars travel in same direction on two parallel lanes of the same straight road, then at time  $t = 20$  s

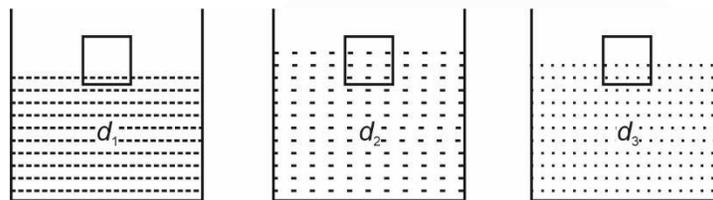


- Car Y is 10 m behind the car X
- Car X is 20 m behind the car Y
- Both the cars are crossing same point
- Car X is 30 m behind the car Y

3. Which of the following distance-time graph shows the object is moving with non-uniform speed?



4. A cubical block floats in three different liquids of densities  $d_1$ ,  $d_2$  and  $d_3$  as shown in the figures. Then the correct relation is



- (1)  $d_1 > d_2 > d_3$
- (2)  $d_1 > d_3 > d_2$
- (3)  $d_2 > d_1 > d_3$
- (4)  $d_2 > d_3 > d_1$

5. A body of mass 50 g moving with a uniform velocity has linear momentum  $1 \text{ kg ms}^{-1}$ . The velocity of the body is

- (1)  $20 \text{ ms}^{-1}$
- (2)  $50 \text{ ms}^{-1}$
- (3)  $1 \text{ ms}^{-1}$
- (4)  $200 \text{ ms}^{-1}$

6. A constant force of 40 N is applied on a body of mass 8 kg moving with speed  $v \text{ m/s}$ . Under the action of this force, the body comes to rest in 6 s. The speed  $v$  is

- (1) 50 m/s
- (2) 30 m/s
- (3) 25 m/s
- (4) 40 m/s

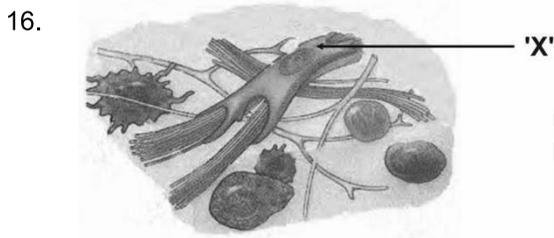
7. Consider the given table.

Colloid	Dispersion medium	Dispersed phase
Pumice	a	b
Cheese	a	c
'P'	c	b
'Q'	b	c

Now, choose the **incorrect** statement.

- (1) Colloid 'P' can be shaving cream  
 (2) b is gas and c is solid  
 (3) Cheese is an example of gel and 'Q' is an example of aerosol  
 (4) a is solid and 'Q' can be fog
8. When a solid starts melting, the heat energy further supplied
- (1) Decreases the kinetic energy of the particles in the solid  
 (2) Increases the temperature of the solid  
 (3) Is lost to the surroundings as such  
 (4) Is absorbed as latent heat of fusion by the solid
9. The common elements present in nitric acid and ammonium chloride are
- (1) N and O (2) N and Cl  
 (3) N and H (4) H and Cl
10. Which of the following is **incorrect** about matter?
- (1) It is particulate (2) It may exist in different physical states  
 (3) It can occupy space (4) It is continuous
11. The solvent present in tincture of iodine and the solute present in soda water respectively are
- (1) Carbon dioxide and alcohol (2) Iodine and alcohol  
 (3) Alcohol and carbon dioxide (4) Alcohol and water
12. Tanya prepared 500 g solution of copper sulphate to perform an activity. The concentration of the solution was 10% (w/w). Two days later she found that the mass of solution reduced to 450 g. In an attempt to maintain the previous concentration, she added 100 g more water to it. The concentration (% w/w) of the solution so formed is
- (1) 8.01% (2) 9.09%  
 (3) 11.01% (4) 9.99%

13. The movement of food in the alimentary canal or the contraction and relaxation of blood vessels are controlled by
- (1) Cardiac muscles (2) Smooth muscles  
(3) Striated muscles (4) Skeletal muscles
14. Select the **incorrect** statement w.r.t. neuron.
- (1) It consists of a cell body with a nucleus (2) It has a single long process called dendrite  
(3) It has cytoplasm (4) It is present in brain, spinal cord and nerves
15. The type of tissue present in aquatic plants which help them to float is called
- (1) Collenchyma (2) Aerenchyma  
(3) Sclerenchyma (4) Chlorenchyma



Identify the part labelled as 'X' in the above given figure and select the correct option.

- (1) Plasma cell (2) Macrophage  
(3) Mast cell (4) Fibroblast
17. Select the **incorrect** matches amongst the following.

(i)	Mitochondria	-	Powerhouses of the cell
(ii)	Golgi apparatus	-	Suicide bags of a cell
(iii)	Vacuoles	-	Storage sacs for solid contents of the cell
(iv)	Endoplasmic reticulum	-	Involved in photosynthesis

- (1) (i) and (iii) (2) (ii) and (iv)  
(3) (i) and (ii) (4) (iii) and (iv)
18. In nucleus, the rod-shaped structure visible during cell division is called **(i)** which is composed of **(ii)** and protein. Here, **(i)** and **(ii)** are respectively
- (1) DNA and gene (2) Chromosome and DNA  
(3) DNA and chromatin material (4) Gene and chromosome

**SECTION-II : ONE OR MORE THAN ONE CORRECT ANSWER TYPE**

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

19. Two objects *A* and *B* of masses 1 kg and 4 kg respectively are placed at a distance 3 m apart. A small particle of unknown mass is kept between them. Then which of the following option(s) is(are) true?

- (1) Both objects *A* and *B* will pull each other with equal and opposite forces
- (2) The smaller particle will feel no net force at a distance 1 m from object *A* along the line joining the objects *A* and *B*
- (3) 1 m distance is independent of mass of small particle
- (4) 1 m distance is dependent on mass of small particle

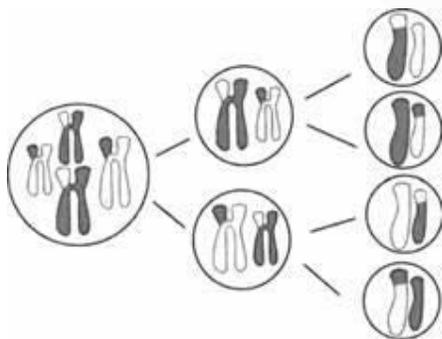
20. Consider the following table.

Compound	Cation	Anion
X	Calcium	Carbonate
Y	Magnesium	Hydroxide
Z	Aluminium	Chloride

Now, choose the correct option(s).

- (1) Atomicity of 'X' and 'Y' is same
- (2) Difference in the molecular mass of 'X' and 'Y' is 42 u
- (3) Chemical formulae of 'X', 'Y' and 'Z' are  $\text{CaCO}_3$ ,  $\text{MgOH}$  and  $\text{AlCl}_3$  respectively
- (4) 'X' has a polyatomic divalent anion whereas 'Z' has a trivalent cation

21.



Which of the following statement(s) is(are) **incorrect** regarding the above given process?

- (1) It forms only two identical daughter cells in two consecutive divisions
- (2) It produces gametes in reproductive organs of animals
- (3) It produces new cells which have the same number of chromosomes as that of mother cell
- (4) It helps in the growth and repair of tissues in organisms

## MATHEMATICS

### SECTION-I : SINGLE CORRECT ANSWER TYPE

This section contains 10 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** choice is correct.

22. Which of the following is a constant polynomial?
- (1)  $x^2$  (2)  $x$   
 (3)  $\frac{-5}{2}$  (4)  $x = 0$
23. If  $\triangle PQR \cong \triangle ABC$ ,  $PQ = PR$  and  $\angle P = 100^\circ$ , then  $\angle B$  equals
- (1)  $50^\circ$  (2)  $80^\circ$   
 (3)  $40^\circ$  (4)  $100^\circ$
24. If the point  $A(6a, 3a - 4)$  lies on the line with equation  $x - 2y = 8$ , then the number of value(s) of  $a$  is(are)
- (1) 0 (2) 1  
 (3) 2 (4) Infinitely many
25. Which of the following rational numbers will lie between  $\frac{4}{5}$  and  $\frac{5}{4}$ ?
- (1)  $\frac{7}{5}$  (2)  $\frac{13}{10}$   
 (3)  $\frac{11}{10}$  (4)  $\frac{3}{4}$
26. If  $a$ ,  $b$  and  $c$  are degrees of polynomials  $x^2 - 4x^3 + 5$ ,  $7x^5 + 2$  and  $-3x^3 + x^4 - 2$  respectively, then the value of  $\left(\frac{a+b}{c}\right)$  is
- (1)  $-2$  (2) 2  
 (3) 1 (4) 4
27. If  $ab > 0$ , then the point  $(a, b)$  will lie in
- (1) II or III quadrant (2) II or I quadrant  
 (3) I or IV quadrant (4) I or III quadrant
28. Lines  $AC$  and  $BD$  intersect at  $O$ . If  $\angle AOB = 40^\circ$ , then the difference of complement of  $\angle COD$  and supplement of  $\angle AOD$  is
- (1)  $50^\circ$  (2)  $140^\circ$   
 (3)  $40^\circ$  (4)  $10^\circ$
29. If  $x = \frac{\sqrt{\sqrt{10}+3} + \sqrt{\sqrt{10}-3}}{\sqrt{\sqrt{10}+1}}$  and  $y = \sqrt{\frac{1}{2-\sqrt{3}} - \frac{1}{2+\sqrt{3}}} - 2\sqrt{3}$ , then the value of  $\sqrt{x^2 + y}$  is
- (1)  $\sqrt{3}$  (2)  $\sqrt{2}$   
 (3) 4 (4) 2

30. The value of  $\sqrt{1+4010\sqrt{1+4011\sqrt{1+4012\sqrt{1+4013\times 4015}}}}$  is
- (1) 4013 (2) 4011  
 (3) 4012 (4) 4010
31. Each section A, B, C and D of a class have  $x$  number of boys and no girl and each section E, F, G, H and I of a class have  $y$  number of girls and no boy. If all the boys and girls from all the classes are combined to make a single class of 100 students, then the number of all possible ordered pairs  $(x, y)$ , where  $x, y \neq 0$ , is
- (1) 7 (2) 5  
 (3) 6 (4) 4

**SECTION-II : ONE OR MORE THAN ONE CORRECT ANSWER TYPE**

This section contains 1 multiple choice question, which has 4 choices (1), (2), (3) and (4) out of which **ONE OR MORE THAN ONE** choice(s) is(are) correct.

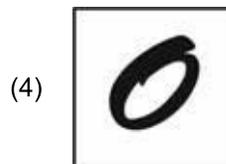
32.  $ABCD$  is an isosceles trapezium such that  $AB \parallel CD$  and diagonals  $AC$  and  $BD$  intersect each other at right angle at point  $O$ . If bisectors of  $\angle ACD$  and  $\angle BAC$  intersect  $BD$  at  $E$  and  $F$  respectively, then the correct option(s) is(are)
- (1)  $\frac{OA}{OB} = \frac{OC}{OD}$   
 (2)  $CD = OC + OE$   
 (3)  $\triangle AOD \cong \triangle BOC$   
 (4)  $AB = OA + OF$

**MENTAL ABILITY**

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

This section contains 7 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) out of which **ONLY ONE** choice is correct.

33. Choose the odd one.



34. Find the next term of the given series.

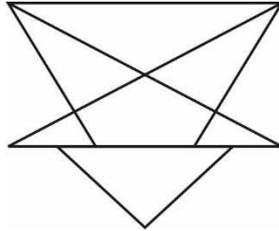
125, 343, 1331, 2197, 4913, ?

- (1) 5832 (2) 6859  
 (3) 9261 (4) 6895

35. Ram is son of Sohan, who is husband of Meera. Priya is only sister of Ram and sister-in-law of Rani. Pankaj is son of Ram, who is husband of Rani. How is Sohan related to Pankaj?

- (1) Grandson
- (2) Father
- (3) Grandfather
- (4) Uncle

36. Count the total number of triangles in the given figure.



- (1) 8
- (2) 11
- (3) 10
- (4) 9

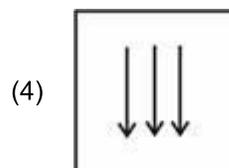
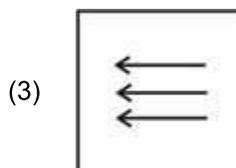
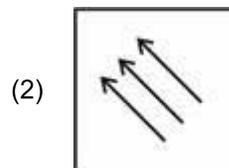
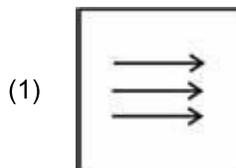
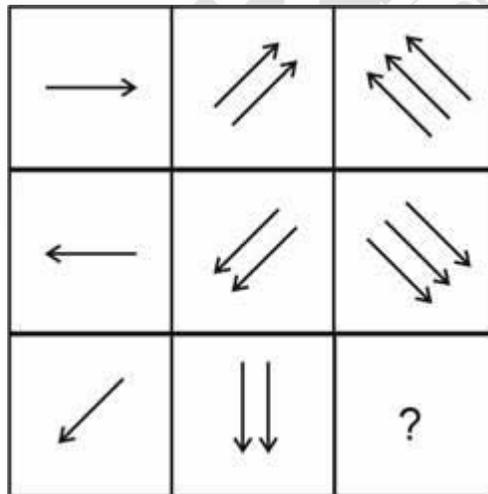
37. A is left of B and right of C. D is immediate right of B and left of E. Who is second from left end?

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

38. If JACK is coded as PXZQ and MARK is coded as PIZN, then RAIN will be coded as

- (1) MRZI
- (2) IZRM
- (3) MZRI
- (4) IMZR

39. Complete the following figure matrix.



**SECTION-II : ONE OR MORE THAN ONE CORRECT ANSWER TYPE**

This section contains 1 multiple choice question, which has 4 choices (1), (2), (3) and (4) out of which **ONE OR MORE THAN ONE** choice(s) is(are) correct.

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40. Which of the following pair(s) follow(s) the same pattern?

98 : 665 :: 59 : 44 :: 76 : 307

(1) 84 : 448

(2) 32 : 23

(3) 53 : 116

(4) 92 : 729

  
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## OUR TOP PERFORMERS IN JEE (Advanced) 2025



## Olympiads Results

899 Classroom Students  
Aakashians Qualified

in IOQM  
2024

161 Classroom Students  
Aakashians Qualified

in RMO  
2024-25

420 Classroom Students  
Aakashians Qualified

in NSEs  
2024-25

25 Classroom Students  
Aakashians Qualified

for OCSCs/IMOTC  
/APMO 2024-25

4902 Classroom Students  
Aakashians Qualified

in NSO (Level-I)  
2024-25