

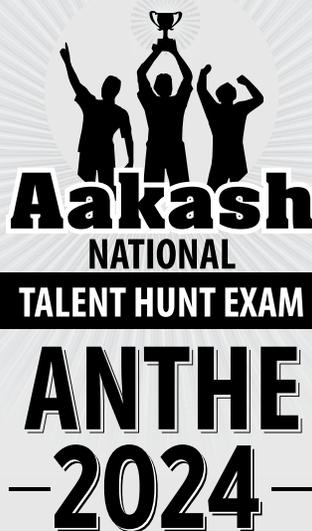
Sample Paper

FOUNDATIONS



Aakash

Medical | IIT-JEE | Foundations



(Class VII Studying Moving to Class VIII)

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 2024

Sample Paper

(Class VII Studying Moving to Class VIII)

(The questions given in sample paper are indicative of the level and pattern of questions that will be asked in ANTHE-2024)

Time : 1 Hour

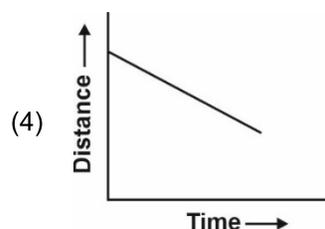
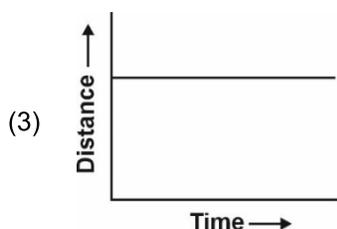
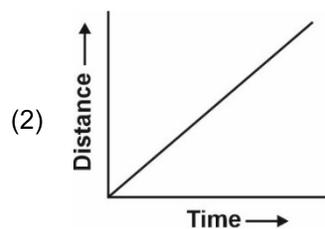
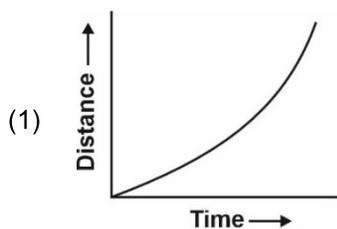
MM : 90

SCIENCE

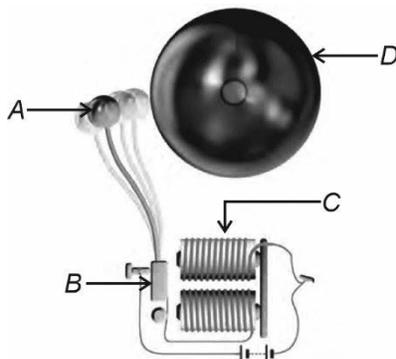
SECTION-I : SINGLE CORRECT ANSWER TYPE

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.

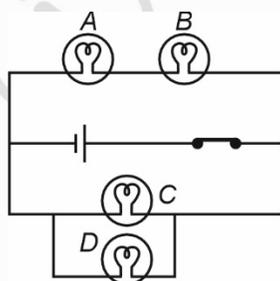
- A body covers a distance 5 km in 30 min and next 4 km in 60 min. The average speed of the body for whole journey is
 - 60 m/min
 - 150 m/min
 - 100 m/min
 - 50 m/min
- Which of the following is the correct use of kink in a clinical thermometer?
 - To hold the extra amount of mercury in case of leakage
 - It prevents mercury level from falling on its own
 - To hold the thermometer while reading
 - To store all the mercury at 50°C
- Which of the following distance-time graphs represents the motion of a car moving with changing speed?



4. The bob of a simple pendulum is released from one of its extreme position. If it reaches to its mean position in 0.2 s, then time taken by the bob to complete 15 oscillations is
- (1) 10 s (2) 11 s
(3) 12 s (4) 13 s
5. An electric bell is shown in the figure. Which of the following part works as an electromagnet?



- (1) A (2) B
(3) C (4) D
6. In the given electric circuit diagram, which bulb(s) will glow when the switch is in ON position?



- (1) Only bulbs A and B
(2) Only bulbs C and D
(3) Bulbs A, B and D only
(4) All bulbs A, B, C and D
7. Which of the following is an example of physical change?
- (1) Digestion of animal waste by anaerobic bacteria
(2) Burning of fuel
(3) Galvanisation of iron to prevent it from rusting
(4) Setting of curd
8. When an iron nail is placed in the solution of copper sulphate, change in colour of the solution is observed due to the formation of 'X'. Identify 'X' and choose the correct option.
- (1) 'X' is the solid form of copper
(2) Blue deposition of copper is observed on the surface of nail
(3) 'X' is the solution of iron sulphate
(4) Bubbles of a gas are observed in the solution

9. Which of the following is not a naturally occurring indicator?
- (1) Turmeric
 - (2) Litmus
 - (3) China rose
 - (4) Phenolphthalein
10. Amla and other citrus fruits contain majorly
- (1) Lactic acid
 - (2) Ascorbic acid
 - (3) Magnesium hydroxide
 - (4) Hydrochloric acid
11. The process involved in the purification of salt obtained from sea water is called
- (1) Galvanisation
 - (2) Crystallisation
 - (3) Condensation
 - (4) Rusting
12. Rohit collected two different samples of soil 'A' and 'B' to grow plants. His father who is a soil expert, tested both the samples 'A' and 'B' and to treat the soil, his father asked Rohit to add some amount of quick lime to sample 'A' and organic matter to sample 'B'.
- The nature of sample 'A' and 'B' was
- (1) Basic and acidic respectively
 - (2) Basic and neutral respectively
 - (3) Acidic and neutral respectively
 - (4) Acidic and basic respectively
13. Milk teeth fall off at the age between
- (1) 3 to 4 years
 - (2) 2 to 5 years
 - (3) 6 to 8 years
 - (4) 12 to 15 years
14. **Statement-I:** Chocolates, sweets and other sugar products cause tooth decay.
- Statement-II:** The bacteria present in our mouth breakdown sugar into acid and cause tooth decay.
- Consider the given statements and choose the correct option.
- (1) Only statement-I is correct
 - (2) Only statement-II is correct
 - (3) Both the statements are correct
 - (4) Both the statements are incorrect

15. The percentage of oxygen in exhaled air is about
- (1) 21% (2) 4.4%
- (3) 16.4% (4) 0.04%

16. Match the following columns and select the correct option.

Column-I
(Blood vessels)

Column-II
(Their characteristics)

- | | |
|--------------------------|---|
| a. Pulmonary artery | (i) It carries blood from lungs to heart |
| b. Pulmonary vein | (ii) It carries carbon dioxide-rich blood |
| | (iii) It carries oxygen-rich blood |
| | (iv) It carries blood from heart to lungs |
| (1) a(ii, iv), b(i, iii) | (2) a(i, iii), b(ii, iv) |
| (3) a(i, iv), b(ii, iii) | (4) a(ii, iii), b(i, iv) |

17. In rose plants, the food factories are

- (1) Leaves (2) Roots
- (3) Stems (4) Flowers

18. Which of the following sequences correctly depicts the pathway of urine excreted from the human body?

- (1) Kidney → Urinary bladder → Ureter → Urethra (2) Kidney → Ureter → Urinary bladder → Urethra
- (3) Kidney → Urethra → Urinary bladder → Ureter (4) Kidney → Ureter → Urethra → Urinary bladder

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. There are three tanks A, B and C contains same amount of water at 30°C, 40°C and 50°C respectively and three iron balls at temperature 25°C, 45°C and 50°C. Then choose the correct statement(s) from the following.
- (1) If the iron ball at temperature 45°C is dipped in tank-C, then the temperature of iron ball increases
- (2) If the iron ball at temperature 50°C is dipped in tank-B, then the temperature of iron ball decreases
- (3) If the iron ball at temperature 25°C is dipped in tank-A, then the temperature of iron ball becomes 40°C
- (4) If the iron balls at temperature 25°C and 45°C are dipped simultaneously in tank-C, then the heat is transferred from water to iron balls
20. Preeti, Bindu and Sangeeta visit a restaurant and wish to have an acidic, basic and neutral drinks respectively. On the basis of their choices, choose the correct statement(s).
- (1) Preeti can have lemonade and Bindu can have buttermilk (made from curd) but Sangeeta cannot have aerated drink
- (2) Preeti can have buttermilk (made from curd) and Sangeeta can have distilled water but Bindu cannot have lemonade
- (3) Bindu can have aerated drink and Sangeeta can have orange juice but Preeti cannot have water
- (4) Preeti can have orange juice but Bindu and Sangeeta cannot have grape juice and aerated drink respectively

21.



Select the **incorrect** statement(s) w.r.t. the organism depicted above.

- (1) It is a saprotroph
- (2) Its pitcher secretes digestive juices to digest the trapped insects
- (3) It has a jug-like structure which is a modified part of leaf
- (4) It lacks chlorophyll pigment

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. If $3x + 18 = 29$, then x is a
 - (1) Improper fraction
 - (2) Proper fraction
 - (3) Integer
 - (4) Natural number
23. If a man walks 4 km in 50% of the entire day, then the number of hours in which he will walk 6 km is (assuming his walking speed is uniform)

(1) 16	(2) 18
(3) 20	(4) 15
24. The supplement of complement of two-third of 69° is

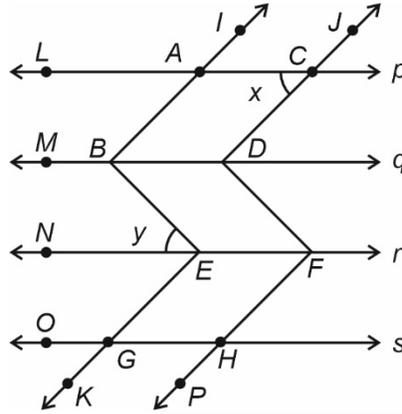
(1) 44°	(2) 123°
(3) 142°	(4) 136°
25. If the mean of the given data :
13, a is 30 then the value of a is
 - (1) 17
 - (2) 43
 - (3) 47
 - (4) 35

26. If 85% students of a class like Maths, then the percentage of students who do not like Maths is
- (1) 15% (2) 20%
(3) 25% (4) 35%
27. If $x = \frac{4}{5} \div \frac{24}{25}$, $y = \frac{3}{16} \times \frac{64}{18}$ and $z = \frac{4}{5}$ of $\left(\frac{2}{3} - \frac{3}{2}\right)$, then the correct statement(s) is(are)
- Statement-I** : $x > y$.
Statement-II : $(y + z)$ is positive.
Statement-III : $6(x + z)$ is neither prime nor composite.
- (1) Statement I only
(2) Both statements I and II
(3) Both statements I and III
(4) Statement III only
28. Let p be a natural number from 1 to 99. Then the product of all the fractions of the form $\frac{p}{p+1}$ will be
- (1) $\frac{98900}{999000}$
(2) $\frac{1}{100}$
(3) $\frac{999}{9990}$
(4) $\frac{99}{100}$
29. A shopkeeper sold an article A costing ₹50 at 12% profit and an article B costing ₹500 at 1.4% profit. The correct statement is
- (1) Profit made on article A is greater
(2) Profit made on both the articles is same
(3) The profit percent of both the articles combined is 2%
(4) Difference in profits of both the articles is ₹1
30. Two sides of an isosceles triangle measure 6 cm and 12 cm. Which of the following could be the measure of the third side?
- (1) 14 cm (2) 12 cm
(3) 6 cm (4) 10 cm
31. For any two positive integers a and b , $a \times (-b)$ is not equal to
- (1) $(-a) \times b$
(2) $-(a \times b)$
(3) $-(b \times a)$
(4) $(-a) \times (-b)$

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. In the given figure, lines $p \parallel q \parallel r \parallel s$, $AB \parallel CD \parallel EG \parallel FH$ and $BE \parallel DF$. If $x = 40^\circ$ and $y = 60^\circ$, then the correct option(s) is(are)



- (1) $\angle ABE = 100^\circ$
- (2) Supplement of $(\angle HGK - \angle ABD) = \angle DBE + 20^\circ$
- (3) $\angle ABD + \angle GEN =$ Complement of $\angle DFE$
- (4) Supplement of complement of $\angle GEN = 130^\circ$

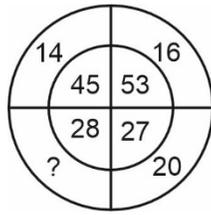
MENTAL ABILITY

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. Find the missing term in the following series.
31, 37, 41, ?, 47, 53
- (1) 45
 - (2) 43
 - (3) 42
 - (4) 44
34. Find the next term in the following series.
PM, QN, SP, VS, ?
- (1) ZV
 - (2) YW
 - (3) AZ
 - (4) ZW
35. Mohan walks towards south and covers the distance of 10 m, then turns left and walks 9 m, then turns right and walks 15 m, again takes a right turn and walks 18 m. Now, in which direction is he from his starting point?
- (1) Southeast
 - (2) South
 - (3) Southwest
 - (4) Northeast

36. Find the missing number in place of '?'.

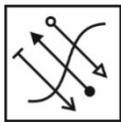


- (1) 18
- (2) 20
- (3) 15
- (4) 27

37. In a game, A is having half number of sticks than B and C is having double the number of sticks as B. If A and B together have 45 sticks whereas B and C together have 90 sticks, then how many sticks does C have?

- (1) 30
- (2) 50
- (3) 90
- (4) 60

38. Choose the correct water image of the given figure (X).



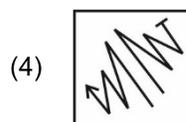
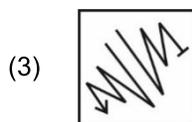
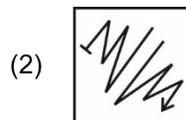
(X)

- (1)
- (2)
- (3)
- (4)

39. Choose the correct mirror image of the given figure (X).



(X)



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.

40. If $5 * 8 \# 9 = 85$, $6 * 4 \# 7 = 66$ and $3 * 9 \# 5 = 42$, then which of the following option(s) follow(s) these mathematical operation?

- (1) $8 * 7 \# 3 = 80$
 (2) $6 * 6 \# 4 = 60$
 (3) $8 * 8 \# 8 = 130$
 (4) $9 * 3 \# 7 = 100$

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