

PACE - IIT & MEDICAL

Delhi/ Ghaziabad /Mumbai/ Pune / Goa/ Akola/ Nashik/ Kolkata / Lucknow / Bokaro/ Dubai

Admission cum Scholarship Test for SUPER-50

Standard: 8th

Set - 1

DURATION: 1 HOUR

TOTAL MARKS: 120

INSTRUCTIONS: {Paper consists of the following sections}

Section - I : Mathematics : Q. No. **01 to 10**

Section - II : Science : Q. No. **11 to 20**

Section - III : Mental Ability : Q. No. **21 to 30**

1. This booklet is your question paper. Answers have to be marked on the provided OMR sheet.
2. Space for rough work is provided in the question paper.
3. Log tables, Slide rule, Calculators, Cellular phones and other Electronic devices in any form are NOT allowed in the examination hall.
4. If a student is caught copying, he / she will not be allowed to write the exam.
5. On the OMR sheet, write your name, roll number, mobile number, paper code and put your signature in the appropriate boxes.
6. There are total 30 questions in this paper. Only one choice is correct. Each question carries **+4** for correct answer & **0** for wrong answer.

**NOTE: THE RESULT WILL BE ANNOUNCED ON 5TH OCTOBER 2025
AT PACE RDC CENTRE**

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(MATHEMATICS)

1. Identify the missing digit in the number 234,4_6, if the number is divisible by 4.
 (a) 2 (b) 6
 (c) 4 (d) 5

2. The factors of $3m^2 + 9m + 6$ are:
 (a) $(m + 1)(m + 2)$ (b) $3(m + 1)(m + 2)$
 (c) $6(m + 1)(m + 2)$ (d) $9(m + 1)(m + 2)$

3. When 'p' is subtracted from 10 and the difference is divided by 2, the result is 3. What is the value of 'p'?
 (a) 4 (b) 3
 (c) -4 (d) 6

4. $\frac{3x-2}{3} + \frac{2x+3}{2} = x + \frac{7}{6}$ then x =
 (a) $\frac{2}{3}$ (b) $\frac{1}{3}$
 (c) 3 (d) None

5. $\sqrt{4\frac{57}{196}} = ?$
 (a) $2\frac{1}{14}$ (b) $2\frac{3}{14}$
 (c) $2\frac{5}{14}$ (d) $2\frac{9}{14}$

6. Find the cost of carpeting a room 13 m long and 9 m broad with a carpet 75 cm wide at the rate of Rs. 12.40 per square meter
 (a) 1954.4 Rs (b) 1934.4 Rs
 (c) 1964.4 Rs (d) 1924.4 Rs

SPACE FOR ROUGH WORK

7. If $a - \frac{1}{a} = 2$, then $a^2 + \frac{1}{a^2}$ will be equal to:
(a) 6 (b) 0
(c) 4 (d) None of these
8. The value of $\sqrt[3]{343} \times \sqrt[3]{-64}$ is
(a) -28 (b) -18
(c) 28 (d) 18
9. The measures of two angles of a quadrilateral are 110° and 100° . The remaining two angles are equal. The measure of each of the remaining two angles is
(a) 30° (b) 60°
(c) 75° (d) 45°
10. ABCD is a parallelogram. If $\angle A$ is equal to 45° , then find the measure of its adjacent angle.
(a) 135° (b) 120°
(c) 115° (d) 180°

SCIENCE

11. To reduce friction _____ is used in machines
(a) Gas (b) Paints
(c) Lubricant (d) Paper
12. Every body continues its motion or come to rest after certain period of time unless & until _____ is applied to it
(a) Inertia (b) Force
(c) Momentum (d) None of these
13. If two or more notes are sounded together to produce pleasant effect, this is called as
(a) Melody (b) Loudness
(c) Harmony (d) Pitch

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14. Coal is processed in industries to get some useful products. Which of the following is not obtained from coal?
- (a) Coke (b) Coal tar
(c) Coal gas (d) CNG
15. Which of the following is the characteristic of exhaustible natural resources?
- (a) They are unlimited
(b) They are limited
(c) They are not dependent on nature
(d) All of the above
16. The lowest temperature at which a substance catches fire is called it's?
- (a) B.P. (b) M.P.
(c) Ignition temperature (d) Critical temperature
17. Which was the first National park established in India?
- (a) Kanha (b) Jim Corbett
(c) Kaziranga (d) Gir
18. Cellular respiration occurs in:
- (a) Golgi bodies (b) Mitochondria
(c) Lysosome (d) Vacuole
19. _____ soil cannot hold water.
- (a) Clay (b) Loamy
(c) Sandy (d) Silt
20. If a person is suffering with AIDS, he or she will
- (a) Lose their ability to walk
(b) Become blind
(c) Lose their ability to fight diseases
(d) Lose memory

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MENTAL ABILITY - (MAT)**21. Odd One Out:**

Find the word that does not belong to the group.

- | | |
|--------------|----------|
| (a) Elephant | (b) Lion |
| (c) Tiger | (d) Deer |

22. Number Series:

What comes next in the series?

1, 4, 9, 16, 25, ?

- | | |
|--------|--------|
| (a) 30 | (b) 36 |
| (c) 49 | (d) 64 |

23. Letter Series:

What comes next in the series?

A, C, F, J, O, ?

- | | |
|-------|-------|
| (a) U | (b) V |
| (c) W | (d) X |

24. Complete the analogy: Square : Cube :: Circle : ?

- | | |
|--------------|----------|
| (a) Sphere | (b) Oval |
| (c) Cylinder | (d) Cone |

25. If 'CAT' is coded as '3120', how would 'DOG' be coded?

- | | |
|-----------|-----------|
| (a) 4157 | (b) 41517 |
| (c) 41519 | (d) 41520 |

26. A person walks 10 meters towards the east, then turns right and walks 5 meters. He then turns left and walks 5 meters. In which direction is he from the starting point?

- | | |
|-----------|----------------|
| (a) North | (b) South-East |
| (c) East | (d) North-East |

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27. Pointing to a photograph, a woman says, "This man's son's sister is my daughter." Who is the man in the photograph to the woman?
 (a) Brother (b) Father
 (c) Father-in-law (d) Brother-in-law
28. **Missing Figure:** Identify the missing figure from the following options that completes the pattern. (Please imagine a 3x3 grid here with 8 figures and one blank spot. The figures could be simple shapes, like circles, squares, and triangles, with a progression or a pattern based on position or color. Since I cannot generate images, I will provide a verbal description of the pattern)
Row 1: Circle, Square, Triangle
Row 2: Square, Triangle, Circle
Row 3: Triangle, Circle, ?
 (a) Square (b) Circle
 (c) Triangle (d) Rectangle
29. Five friends A, B, C, D, and E are sitting in a row facing North. C is sitting between A and B. D is not at the end. E is sitting to the right of D. Who is sitting at the extreme right end?
 (a) A (b) B
 (c) C (d) E
30. If '+' means 'x', '-' means '÷', 'x' means '-', and '÷' means '+', what is the value of the expression: $15 - 3 + 10 \times 5 \div 2$
 (a) 47 (b) 10
 (c) 15 (d) 20

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