

# Services Preparatory Institute (SPI)

## Entrance Exam 2021

### Sample Question Paper By Disha Foundation

Question Paper No:  
SPI210005033

Students Roll Number

Exam Center : Pune

Total Questions: 150

Maximum Marks: 150

Time Duration: 150 Min

Test Booklet Series

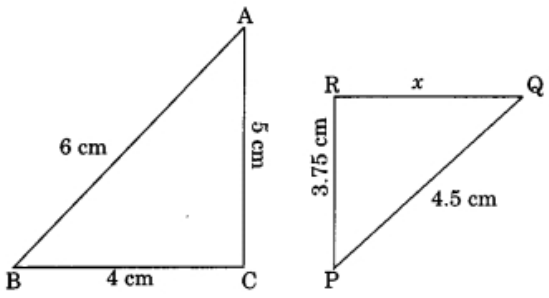


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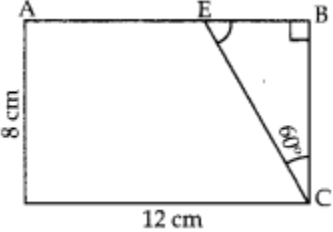
#### INSTRUCTIONS

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2. ENCODE CLEARLY THE TEST BOOKLET SERIES A, B, C OR D AS THE CASE MAY BE IN THE APPROPRIATE PLACE IN THE ANSWER SHEET.
3. You have to enter your Roll Number on the Test Booklet in the Box provided alongside. Do NOT write anything else on the Test Booklet.
4. This Test Booklet contains 150 items (Questions). Each item is printed in English. Each item comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response with you consider the best. In any case, choose ONLY ONE response for each item.
5. You have to mark all your responses ONLY on the separate Answer Sheet provided. See direction in the answers sheet.
6. All items carry equal marks. Attempt all items. Your total marks will depend only on the number of correct responses marked by you in the answer sheet. For every incorrect response half of the allotted marks will be deducted.
7. Before you proceed to mark in the Answer sheet the response to various items in the Test booklet, you have to fill in some particulars in the answer sheets as per instruction sent to you with your Admission Certificate.
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9. Sheet for rough work are appended in the Test Booklet at the end..

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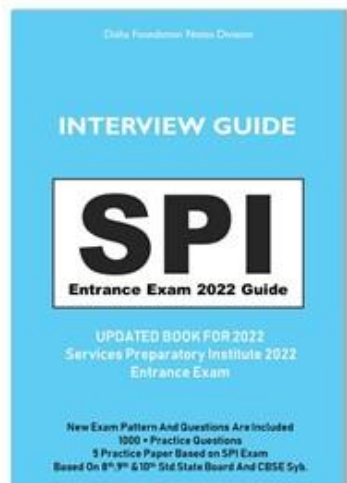
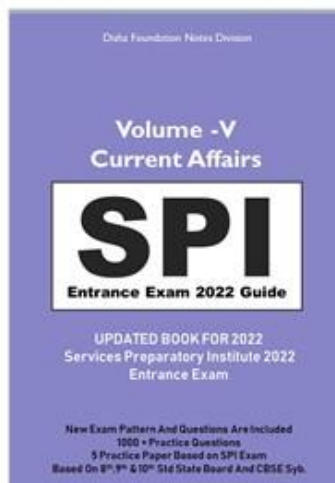
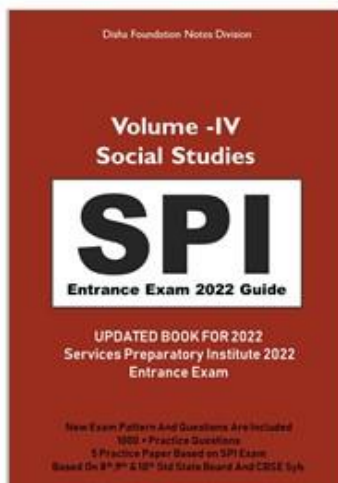
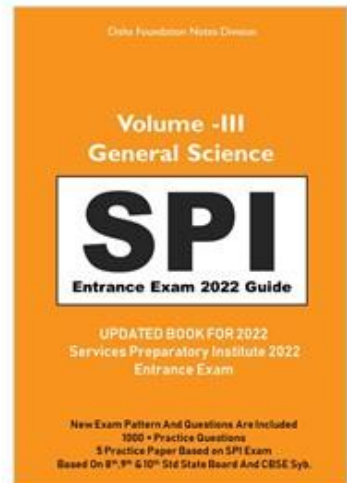
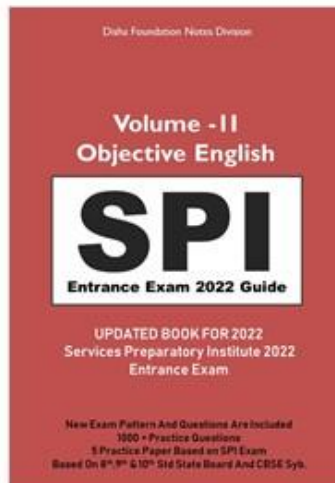
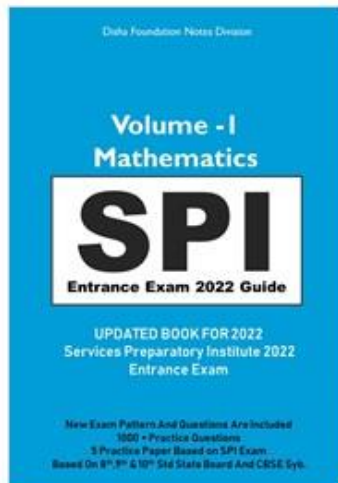
<p><b>1. The product of a rational and irrational number is</b></p> <p>(a) Rational            <b>(b) irrational</b></p> <p>(c) both of above    (d) none of above</p>	<p><b>5. In the given figure <math>\Delta ABC \sim \Delta PQR</math>. The value of x is</b></p>  <p>(a) 2.5 cm            (b) 3.5 cm</p> <p>(c) 2.75 cm        <b>(d) 3 cm</b></p>
<p><b>2. The pair of equations <math>x = 0</math> and <math>x = 5</math> has</b></p> <p>(a) no solution</p> <p>(b) unique/one solution</p> <p><b>(c) two solutions</b></p> <p>(d) infinitely many solutions</p>	
<p><b>3. The number of polynomials having zeroes as -2 and 5 is</b></p> <p>(a) 1                      (b) 2</p> <p>(c) 3                      <b>(d) more than 3</b></p>	<p><b>6. First four terms of the sequence <math>a_n = 2n + 3</math> are</b></p> <p>(a) 3, 5, 7, 9            <b>(b) 5, 7, 9, 11</b></p> <p>(c) 5, 8, 11, 14        (d) 1, 3, 5, 7</p>
<p><b>4. The quadratic equation has degree</b></p> <p>(a) 0                      (b) 1</p> <p><b>(c) 2</b>                      (d) 3</p>	<p><b>7. The distance between the point <math>P(1, 4)</math> and <math>Q(4, 0)</math> is</b></p> <p>(a) 4                      <b>(b) 5</b></p> <p>(c) 6                      (d) <math>3\sqrt{3}</math></p>

Space For Rough Work

<p><b>8. If <math>x</math> and <math>y</math> are complementary angles, then</b></p> <p>(a) <math>\sin x = \sin y</math>            (b) <math>\tan x = \tan y</math></p> <p>(c) <math>\cos x = \cos y</math>            (d) <b><math>\sec x = \operatorname{cosec} y</math></b></p>	<p><b>12. The area of the circle whose diameter is 21 cm is</b></p> <p>(a) <b><math>346.5 \text{ cm}^2</math></b>            (b) <math>37.68 \text{ cm}^2</math></p> <p>(c) <math>18.84 \text{ cm}^2</math>            (d) <math>19.84 \text{ cm}^2</math></p>
<p><b>9. In figure given ABCD is a rectangle, the value of CE is</b></p>  <p>(a) 1 cm (b) 2 cm (c) 3 cm (d) <b>4 cm</b></p>	<p><b>13. A solid formed on revolving a right angled triangle about its height is</b></p> <p>(a) cylinder                            (b) sphere</p> <p>(c) <b>right circular cone</b>            (d) two cones</p>
<p><b>10. The distance between two parallel tangents of a circle of radius 4 cm is</b></p> <p>(a) 2 cm                            (b) 4 cm</p> <p>(c) 6 cm                            (d) <b>8 cm</b></p>	<p><b>14. Construction of a cumulative frequency table is useful in determining the</b></p> <p>(a) mean                            (b) median</p> <p>(c) <b>mode</b>                            (d) none of these</p>
<p><b>11. To divide a line segment PQ in the ratio 5 : 7, first a ray PX is drawn so that <math>\angle QPX</math> is an acute angle and then at equal distances points are marked on the ray PX such that the minimum number of these points is</b></p> <p>(a) 5                            (b) 7</p> <p>(c) <b>12</b>                            (d) 10</p>	<p><b>15. The probability of getting exactly one head in tossing a pair of coins is</b></p> <p>(a) 0                            (b) 1</p> <p>(c) <math>1/3</math>                            (d) <b><math>1/2</math></b></p>

Space For Rough Work

# Disha Foundations Useful Notes For SPI Exam Preparation



These Notes Are Free For our SPI  
Entrance Exam Course Students

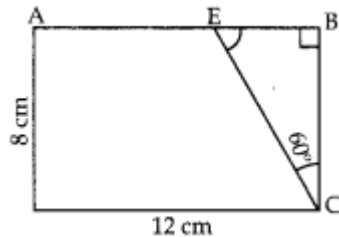


Contact:  
937122244, 9028916498  
Office Address: Disha Foundation,  
42, Aamdar Road, Satara Patisar,  
Aurangabad, Maharashtra. 431001  
Email : Manish.b.Bankar@gmail.com

<p><b>16. The sum of two irrational numbers is always</b></p> <p>(a) irrational (b) rational</p> <p>(c) rational or irrational (d) one</p>	<p><b>20. if a, b, c are in AP then</b></p> <p>(a) <math>b = a + c</math></p> <p>(b) <math>2b = a + c</math></p> <p>(c) <math>b^2 = a + c</math></p> <p>(d) <math>2b^2 = a + c</math></p>
<p><b>17. The graph of <math>y = 5</math> is a line parallel to the</b></p> <p>(a) x-axis (b) y-axis</p> <p>(c) both axis (d) none of these</p>	<p><b>21. If <math>\Delta ABC</math> is similar to <math>\Delta DEF</math> such that <math>2 AB = DE</math> and <math>BC = 8</math> cm then <math>EF</math> is equal to.</b></p> <p>(a) 12 cm (b) 4 cm</p> <p>(c) 16 cm (d) 8 cm</p>
<p><b>18. If the lines given by <math>2x + ky = 1</math> and <math>3x - 5y = 7</math> are parallel, then the value of k is</b></p> <p>(a) <math>-\frac{10}{3}</math> (b) <math>\frac{10}{3}</math></p> <p>(c) - 13 (d) - 7</p> <p>(a)</p>	<p><b>22. The points (2, 5), (4, - 1) and (6, - 7) are vertices of an/a</b></p> <p>(a) isosceles triangle</p> <p>(b) equilateral triangle</p> <p>(c) right-angled triangle</p> <p>(d) none of these</p>
<p><b>19. The cubic equation has degree.....</b></p> <p>(a) 1 (b) 2</p> <p>(c) 3 (d) 4</p>	<p><b>23. Ratios of sides of a right triangle with respect to its acute angles are known as</b></p> <p>(a) trigonometric identities</p> <p>(b) trigonometry</p> <p>(c) trigonometric ratios of the angles</p> <p>(d) none of these</p>

Space For Rough Work

24. In figure given ABCD is a rectangle, the value of CE is

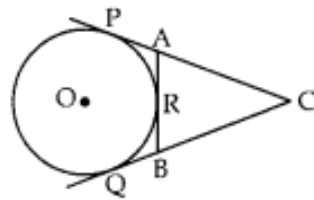


- (a) 1 cm
- (b) 2 cm
- (c) 3 cm
- (d) 4 cm

28. The total surface area of a hemispherical solid having radius 7 cm is

- (a) 462 cm<sup>2</sup>
- (b) 294 cm<sup>2</sup>
- (c) 588 cm<sup>2</sup>
- (d) 154 cm<sup>2</sup>

25. In given figure, CP and CQ are tangents to a circle with centre O. ARB is another tangent touching the circle at R. If CP = 11 cm and BC = 6 cm then the length of BR is



- (a) 6 cm
- (b) 5 cm
- (c) 4 cm
- (d) 3 cm

29. One of the methods for determining mode is

- (a) Mode = 2 Median - 3 Mean
- (b) Mode = 3 Median - 2 Mean
- (c) Mode = 2 Mean - 3 Median
- (d) Mode = 3 Mean - 2 Median

26. When a line segment is divided in the ratio 2 : 3, how many parts is it divided into?

- (a) 2/3
- (b) 2
- (c) 3
- (d) 5

30. the total events to throw three dice simultaneously is

- (a) 6
- (b) 18
- (c) 81
- (d) 216

27. The area of the circle whose diameter is 21 cm is

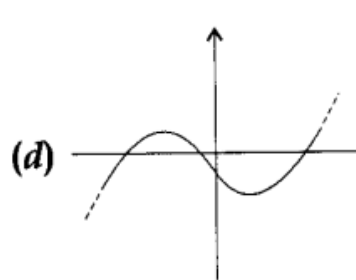
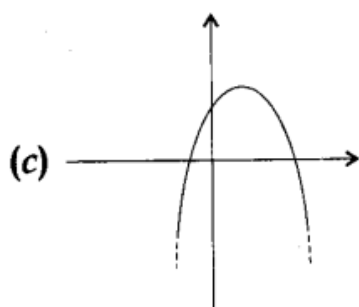
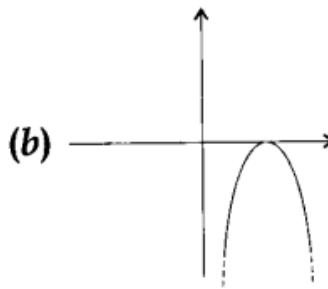
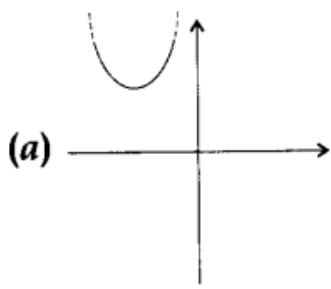
- (a) 346.5 cm<sup>2</sup>
- (b) 37.68 cm<sup>2</sup>
- (c) 18.84 cm<sup>2</sup>
- (d) 19.84 cm<sup>2</sup>

31. The set A = {0,1, 2, 3, 4, ...} represents the set of

- (a) whole numbers
- (b) integers
- (c) natural numbers
- (d) even numbers

Space For Rough Work

32. Which of the following is not the graph of quadratic polynomial?



(d)

33. One equation of a pair of dependent linear equations is  $2x + 5y = 3$ . The second equation will be

(a)  $2x + 5y = 6$

(b)  $3x + 5y = 3$

(c)  $-10x - 25y + 15 = 0$

(d)  $10x + 25y = 15$

35. The sum of first ten natural number is

(a) 55

(b) 155

(c) 65

(d) 110

34. The polynomial equation  $x(x+1) + 8 = (x+2)(x-2)$  is

(a) Linear equation

(b) Quadratic equation

(c) Cubic equation

(d) none

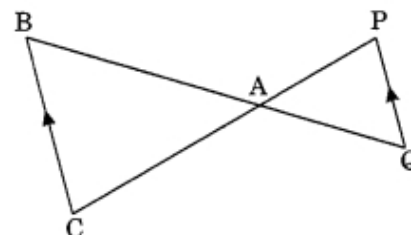
36. In the given figure,  $\Delta ACB \sim \Delta APQ$ . If  $AB = 6$  cm,  $BC = 8$  cm, and  $PQ = 4$  cm then  $AQ$  is equal to

(a) 2 cm

(b) 2.5 cm

(c) 3 cm

(d) 3.5 cm





## Our Results:

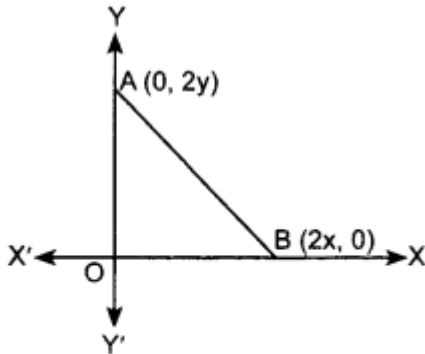
Year 2021		
Sr. No	Exam Name	Total Selection
1	UPSC NDA	183 In NDA-1-2021 In Written Exam
2	SPI Aurangabad	32 In Written Exam(Highest In Maharashtra in 2021)
3	AISSEE: Sainik School Exam	52 Final Selectins in 17 Sainik Schools Across India.
4	RIMC Deharadoon	1 Selected
5	Rashtriya Military School	7 Selected

Year 2020		
Sr. No	Exam Name	Total Selection
1	UPSC NDA	392 In NDA-1&2-2021 In Written Exam
2	SPI Aurangabad	3 Selected
3	AISSEE:Sainik School Exam	28 Final Selectins in 14 Sainik Schools Across India.
4	RIMC Deharadoon	0 Selected
5	Rashtriya Military School	0 Selected

Year 2019		
Sr. No	Exam Name	Total Selection
1	UPSC NDA	No Classes Were Conducted For NDA
2	SPI Aurangabad	No Classes Were Conducted For SPI
3	AISSEE: Sainik School Exam	6 Final Selectins in 4 Sainik Schools Across India.
4	RIMC Deharadoon	0 Selected
5	Rashtriya Military School	0 Selected



37. The coordinates of the point which is equidistant from the three vertices of the  $\Delta AOB$  as shown in the figure is



- (a)  $(x, y)$                       (b)  $(y, x)$   
 (c)  $\left(\frac{x}{2}, \frac{y}{2}\right)$               (d)  $\left(\frac{y}{2}, \frac{x}{2}\right)$

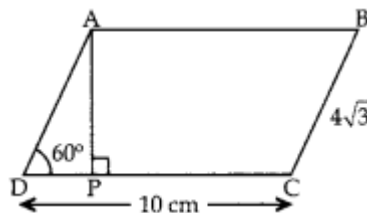
(a)

38. The value of  $\sin^2 5^\circ + \sin^2 10^\circ + \sin^2 15^\circ + \dots + \sin^2 90^\circ$  is equal to

- (a) 8                                      (b) 8.5  
 (c) 9                                      (d) 9.5

39. In given figure, ABCD is a || gm. The length of AP is

- (a) 2 cm  
 (b) 4 cm  
 (c) 6 cm  
 (d) 8 cm



40. A tangent is drawn from a point at a distance of 17 cm of circle  $C(0, r)$  of radius 8 cm. The length of its tangent is

- (a) 5 cm                                  (b) 9 cm  
 (c) 15 cm                                  (d) 23 cm

41. To draw a pair of tangents to a circle which are inclined to each other at an angle of  $35^\circ$ , it is required to draw tangents at the end-points of those two radii of the circle, the angle between which is

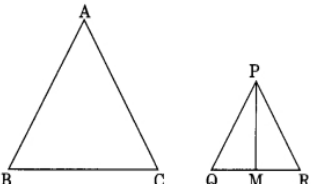
- (a)  $145^\circ$                                   (b)  $130^\circ$   
 (c)  $135^\circ$                                   (d)  $90^\circ$

42. The length of the minute hand of a clock is 14 cm. The area swept by the minute hand in 5 minutes is

- (a)  $153.9 \text{ cm}^2$                           (b)  $102.6 \text{ cm}^2$   
 (c)  $51.3 \text{ cm}^2$                           (d)  $205.2 \text{ cm}^2$

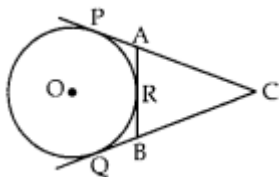
43. A cylinder and a cone are of same base radius and of same height. The ratio of the volume of the cylinder to that of the cone is

- (a) 2 : 1                                      (b) 3 : 1  
 (c) 2 : 3                                      (d) 3 : 2

<p><b>44. The algebraic sum of the deviations of a frequency distribution from its mean is always,</b></p> <p>(a) greater than zero  (b) less than zero  <b>(c) zero</b>  (d) a non-zero number</p>	<p><b>48. The graph of <math>x = -2</math> is a line parallel to the</b></p> <p>(a) x-axis  <b>(b) y-axis</b>  (c) both x- and y-axis  (d) none of these</p>
<p><b>45. A girl calculates that the probability of her winning the first prize in a lottery is <math>8/100</math>. If 6,000 tickets are sold, how many tickets has she bought?</b></p> <p>(a) 400  (b) 750  <b>(c) 480</b>  (d) 240</p>	<p>49. The value of <math>\sqrt{6 + \sqrt{6 + \sqrt{6} \dots}}</math></p> <p>(A) 3.5 (B) 4  <b>(C) 3</b> (D) -3</p>
<p><b>46. Which number is divisible by 11?</b></p> <p>(a) 1516 (b) <b>1452</b>  (c) 1011 (d) 1121</p>	<p><b>50. The sum of first n terms of the series <math>a, 3a, 5a, \dots</math> is</b></p> <p>(a) <math>Na</math> (b) <math>(2n - 1)a</math>  <b>(c) <math>n^2a</math></b> (d) <math>n^2a^2</math></p>
<p><b>47. A quadratic polynomial, whose zeros are -4 and -5, is</b></p> <p>(a) <math>x^2 - 9x + 20</math> (b) <b><math>x^2 + 9x + 20</math></b>  (c) <math>x^2 - 9x - 20</math> (d) <math>x^2 + 9x - 20</math></p>	<p><b>51. In the given figure <math>\Delta ABC \sim \Delta PQR</math>, PM is median of <math>\Delta PQR</math>. If ar <math>\Delta ABC = 289 \text{ cm}^2</math>, <math>BC = 17 \text{ cm}</math>, <math>MR = 6.5 \text{ cm}</math> then the area of <math>\Delta PQM</math> is</b></p> <p>(a) <math>169 \text{ cm}^2</math>  (b) <math>13 \text{ cm}^2</math>  <b>(c) <math>84.5 \text{ cm}^2</math></b>  (d) <math>144.5 \text{ cm}^2</math></p> 

Space For Rough Work

<p>52. If P(1, 2), Q(4, 6), R(5, 7) and S(a, b) are the vertices of a parallelogram PQRS, then</p> <p>(a) <math>a = 2, b = 4</math>                      (b) <math>a = 3, b = 4</math></p> <p>(c) <math>a = 2, b = 3</math>                      (d) <math>a = 3, b = 5</math></p>	<p>56. The radii of two circles are 19 cm and 9 cm respectively. The radius of the circle which has circumference equal to the sum of the circumferences of two circles is</p> <p>(a) 35 cm                                      (b) 10 cm</p> <p>(c) 21 cm                                      (d) 28 cm</p>
<p>53. <math>\sin(90^\circ - A) =</math></p> <p>(a) <math>\sin A</math>                                      (b) <math>\tan A</math></p> <p>(c) <math>\cos A</math>                                      (d) <math>\operatorname{cosec} A</math></p>	<p>57. The volume of a sphere is <math>4851 \text{ cm}^3</math>. Its diameter is</p> <p>(a) 3.5 cm                                      (b) 7 cm</p> <p>(c) 14 cm                                      (d) 21 cm</p>
<p>54. The tops of two poles of height 20 m and 14 m are connected by a wire. If the wire makes an angle of <math>30^\circ</math> with horizontal, the length of the wire is</p> <p>(a) 6 m    (b) 10 m</p> <p>(c) 12 m    (d) 20 m</p>	<p>58. Mode is the</p> <p>(a) middle most frequent value</p> <p>(b) least frequent value</p> <p>(c) maximum frequent value</p> <p>(d) none of these</p>
<p>55. In given figure, CP and CQ are tangents to a circle with centre O. ARB is another tangent touching the circle at R. If CP = 11 cm and BC = 6 cm then the length of BR is</p> <p>(a) 6 cm</p> <p>(b) 5 cm</p> <p>(c) 4 cm</p> <p>(d) 3 cm</p>	<p>59. A card is drawn from a well shuffled deck of 52 cards. The probability of a seven of spade is</p> <p>(a) <math>\frac{1}{26}</math>                      (b) <math>\frac{1}{52}</math>                      (c) <math>\frac{3}{52}</math>                      (d) <math>\frac{1}{13}</math></p> <p>(b)</p>



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# SPI INTERVIEW PROGRAM 2022

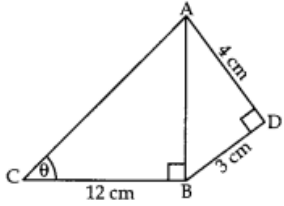
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<p>60. LCM of the given number 'x' and 'y' where y is a multiple of 'x' is given by</p> <p>(a) X                                   <b>(b) y</b></p> <p>(c) Xy                                   (d) x/y</p>	<p>64. If the ratio of the perimeters of two similar triangles is 4 : 25, then the ratio of the areas of the similar triangles is</p> <p>(a) 16 : 625                           (b) 2 : 5</p> <p>(c) 5 : 2                                   (d) 625 : 16</p>
<p>61. The zeroes of the quadratic polynomial <math>x^2 + px + p</math>, <math>p \neq 0</math> are</p> <p>(a) both equal <b>(b) both cannot be positive</b> (c) both unequal (d) both cannot be negative</p>	<p>65. The area (in square units) of the triangle formed by the points A(a, 0), O(0, 0) and B(0, b) is</p> <p>(a) ab                                   (b) <math>\frac{1}{2}ab</math></p> <p>(c) <math>\frac{1}{2}a^2b^2</math>                           (d) <math>\frac{1}{2}b^2</math></p> <p><b>(b)</b></p>
<p>62. The graph of the equation <math>2x + 3y = 5</math> is a</p> <p>(a) vertical line <b>(b) straight line</b> (c) horizontal line (d) none of these</p>	<p>66. If <math>\operatorname{cosec} A - \cot A = \frac{4}{5}</math>, then <math>\operatorname{cosec} A =</math></p> <p>(a) <math>\frac{47}{40}</math>                                   (b) <math>\frac{59}{40}</math></p> <p><b>(d)</b> (c) <math>\frac{51}{40}</math>                                   (d) <math>\frac{41}{40}</math></p>
<p>63. Bi-quadratic equation has degree.....</p> <p>(a) 1 <b>(b) 4</b> (c) 3 (d) 2</p>	<p>67. In given figure, AD = 4 cm, BD = 3 cm and CB = 12 cm. The value of <math>\tan \theta</math> is</p> <p>(a) <math>\frac{5}{13}</math> (b) <math>\frac{12}{13}</math> (c) <math>\frac{5}{12}</math> (d) <math>\frac{12}{5}</math></p> <p><b>(c)</b></p> 

<p><b>68. The length of tangents drawn from an external point to the circle</b></p> <p>(a) are equal  (b) are not equal  (c) sometimes are equal  (d) are not defined</p>	<p><b>72. Which of the following can not be determined graphically?</b></p> <p>(a) Mean  (b) Median  (c) Mode  (d) None of these</p>
<p><b>69. The area of the circle that can be inscribed in a square of side 6 cm, is</b></p> <p>(a) <math>18\pi \text{ cm}^2</math>  (b) <math>12\pi \text{ cm}^2</math>  (c) <math>9\pi \text{ cm}^2</math>  (d) <math>14\pi \text{ cm}^2</math></p>	<p><b>73. If one of the zeroes of the quadratic polynomial <math>(k - 1)x^2 + kx + 1</math> the value of k is</b></p> <p>(a) <math>\frac{4}{3}</math>                      (b) <math>\frac{-4}{3}</math>  (c) <math>\frac{2}{3}</math>                         (d) <math>\frac{-2}{3}</math></p> <p>(c)</p>
<p><b>70. The curved surface area of glass having radii 3 cm and 4 cm respectively and slant height 10 cm is</b></p> <p>(a) <math>55 \text{ cm}^2</math>  (b) <math>110 \text{ cm}^2</math>  (c) <math>220 \text{ cm}^2</math>  (d) <math>440 \text{ cm}^2</math></p>	<p><b>74. Asha has only ₹1 and ₹2 coins with her. If the total number of coins that she has is 50 and the amount of money with her is ₹75, then the number of ₹1 and ₹2 coins are, respectively</b></p> <p>(a) 35 and 15  (b) 15 and 35  (c) 35 and 20  (d) 25 and 25</p>
<p><b>71. A child has a die whose six faces show the letters as given below:  A B C D E F</b>  The die is thrown once. The probability of getting a 'D' is</p> <p>(a) <math>\frac{1}{2}</math>            (b) <math>\frac{1}{3}</math>            (c) <math>\frac{1}{4}</math>            (d) <math>\frac{1}{6}</math></p> <p>(d)</p>	<p><b>75. If the sum of the first m terms of an AP is n and the sum of its n terms is m, then the sum of its <math>(m + n)</math> terms will be</b></p> <p>(a) <math>m + n</math>  (b) <math>-(m + n)</math>  (c) <math>m - n</math>  (d) 0</p>

Part 2 : General Ability Test

<p><b>76. Which of the following is the ultimate source of energy?</b></p> <p>(a) Water <b>(b) Sun</b> (c) Fossil fuels (d) Uranium</p>	<p><b>80. The Indira Gandhi Canal has brought greenery to considerable areas of</b></p> <p>(a) Gujarat <b>(b) Rajasthan</b> (c) Bihar (d) Madhya Pradesh</p>
<p><b>77. Environment Day falls on</b></p> <p>(a) 28th February (b) 23rd March <b>(c) 5th June</b> (d) 16th August</p>	<p><b>81. Which of the two in the following sets belong to the same trophic level?</b></p> <p>(a) Grass; Grasshopper (b) Goat; Spider (c) Hawk ; Rat <b>(d) Frog ; Lizard</b></p>
<p><b>78. Which one of the following pairs belong to the category of primary consumers?</b></p> <p>(a) Eagle and snake <b>(b) Grasshoppers &amp; cattle</b> (c) Snake and frog (d) Water beetles &amp; fish</p>	<p><b>82. The other name of potential difference is:</b></p> <p>A. Amphereage B. Wattage <b>C. Voltage</b> D. Potential energy</p>
<p><b>79. Which salt is Neutral salt?</b></p> <p>(A) <math>\text{NH}_4\text{Cl}</math> <b>(B) <math>\text{CH}_3\text{COONH}_4</math></b> (C) <math>\text{CH}_3\text{COONa}</math> (D) <math>\text{Na}_2\text{CO}_3</math></p>	<p><b>83. Spent slurry (Bio-waste after obtaining biogas) is used as</b></p> <p>(a) fuel <b>(b) manure</b> (c) food for livestock (d) used again for generating biogas</p>

# SPI ENTRANCE EXAM

## Structure Of The Exam And Syllabus

SPI Entrance Exam	Part 1	Part 2
Duration	150 Minutes For Both Parts (No Separate Time For Any One Part)	
Subjects	Mathematics	General Ability Test
Number Of Questions	75 Questions	75 Questions
Marks To Each Question	1 Mark For Right Answer and 0.5 negative mark for each Wrong Answers Total 75 Marks	1 Mark For Right Answer and 0.5 negative mark for each Wrong Answers Total 75 Marks
Question type	Objective MCQ	Objective MCQ
Subjects Included	Math's only	English, Science, Social Studies, Current Affairs, Mental Ability
Question Are Asked Based On	SSC and CBSE Boards	SSC and CBSE Boards
Difficulty Level	Not So Tough	Not So Tough

### Syllabus For SPI Written Exam:

8<sup>th</sup> Std, 9<sup>th</sup> Std & 10<sup>th</sup> Std State Board And CBSE Board Syllabus.

English, General Science, History, Geography, Mathematics.

Higher Weightage Is Given To 10<sup>th</sup> Std Syllabus.

And Current Affairs Are Asked Based on Recent News in Discussion.



<p><b>84. Growing foetus derive nutrition from mother's blood through</b></p> <p>a. Uterus                      b. Fallopian tube</p> <p><b>c. placenta</b>                      d. cervix</p>	<p><b>88. At the time of Mendeleev, the number of elements known was</b></p> <p>(a) 63                      (b) 65</p> <p>(c) 62                      (d) 64</p>
<p><b>85. Which of the following is the correct arrange-ment of the given metals in ascending order of their reactivity?</b></p> <p>Zinc, Iron, Magnesium, Sodium</p> <p>(a) Zinc &gt; Iron &gt; Magnesium &gt; Sodium</p> <p>(b) Sodium &gt; Magnesium &gt; Iron &gt; Zinc</p> <p>(c) Sodium &gt; Zinc &gt; Magnesium &gt; Iron</p> <p><b>(d) Sodium &gt; Magnesium &gt; Zinc &gt; Iron</b></p>	<p><b>89. Pick out the chemically most reactive elements from the given triads.</b></p> <p>Li, Na, K F, Cl, Br</p> <p>(a) Li and F</p> <p>(b) Li and Br</p> <p><b>(c) K and F</b></p> <p>(d) K and Br</p>
<p><b>86. Oxides of moderately reactive metals like Zinc, Iron, Nickel, Tin, Copper etc. are reduced by using</b></p> <p>(a) Aluminium as reducing agent</p> <p>(b) Sodium as reducing agent</p> <p><b>(c) Carbon as reducing agent</b></p> <p>(d) Calcium as reducing agent</p>	<p><b>90. Name the neutral atom in the Periodic Table which has the same number of electrons as K<sup>+</sup> and Cl<sup>-</sup>.</b></p> <p>(a) Helium</p> <p><b>(b) Argon</b></p> <p>(c) Neon</p> <p>(d) Krypton</p>
<p><b>87. Homologous organ have</b></p> <p>a. Same structure, same function</p> <p>b. Different structure, different function</p> <p><b>c. Same structure, different function</b></p> <p>d. different structure, same function</p>	<p><b>91. Which of the following oxide(s) of iron would be obtained on prolonged reaction of iron with steam?</b></p> <p>(a) FeO</p> <p>(b) Fe<sub>2</sub>O<sub>3</sub></p> <p><b>(c) Fe<sub>3</sub>O<sub>4</sub></b></p> <p>(d) Fe<sub>2</sub>O<sub>3</sub> and Fe<sub>2</sub>O<sub>4</sub></p>

<p><b>92. Who have a perfect pair of sex chromosomes?</b></p> <p>a. Girls only  b. Boys only  c. Both girls and boys  d. It depends on many other factors</p>	<p><b>96. Who wrote Sevasadan and when?</b></p> <p>(a) Bankim Chandra in 1865  (b) Sarat Chandra in 1888  (c) Premchand in 1916  (d) Bharatendu Harishchandra in 1882</p>
<p><b>93. In 1916, Gandhiji travelled to Champaran in Bihar to inspire the peasant to struggle against the:</b></p> <p>(a) Upper caste people  (b) Landless agriculture labourers  (c) Oppressive plantation system  (d) None of them</p>	<p><b>97. Which of the following is not true about the Rowlatt Act?</b></p> <p>(a) It allowed the detention of prisoners for five years without trial.  (b) Gave the government powers to repress political activity  (c) It passed the Act despite opposition from the Indian members in the Imperial Legislative Council.  (d) Led to the launch of a movement under Gandhiji's leadership.</p>
<p><b>94. From the ideas and teaching of which of these leaders does BSP draw inspiration?</b></p> <p>(a) Sahu Maharaj  (b) Mahatma Phule and Ramaswami Naicker  (c) Babasaheb Ambedkar  (d) All the above</p>	<p><b>98. Laws concerning family matters such as marriage, divorce, adoption etc. are known as:</b></p> <p>(a) Family laws  (b) Constitutional Laws  (c) Criminal Laws  (d) Civil Laws</p>
<p><b>95. Which one of the following is not a cause of communalism?</b></p> <p>(a) Religion is taken as the basis of nation  (b) When one religion is discriminated against other  (c) State has no official religion  (d) Demands of one religious group are formed in opposition to another</p>	<p><b>99. Which one of the following countries has multi-party system?</b></p> <p>(a) India  (b) China  (c) The United States of America  (d) The United Kingdom</p>

<p><b>100. Which one of the following European managing agencies did not control Indian industries?</b></p> <p>(a) Bird Heiglers and Company  (b) Andrew Yule  <b>(c) Indian Industrial and Commerce Congress</b>  (d) Jardine Skinner and Company</p>	<p><b>103. Cultivation of coffee is confined to which of the following hills?</b></p> <p><b>(a) Nilgiri</b>  (b) Aravali  (c) Shivalik  (d) None of these</p>
<p><b>101. In which one of the following years did the first cotton mill in Bombay (Mumbai) come up?</b></p> <p><b>(a) 1854</b>  (b) 1855  (c) 1862  (d) 1874</p>	<p><b>104. Which one of the following minerals is not obtained from the veins and lodes?</b></p> <p>(a) Tin  (b) Zinc  (c) Lead  <b>(d) Gypsum</b></p>
<p><b>102. Which of the following statements does not support the view of some historians that Print Culture was the basis for the French Revolution?</b></p> <p>(a) Print culture led to the spread of ideas of enlightened thinkers and encouraged questioning, critical reasoning and rule of reason rather than tradition</p> <p>(b) It led to a public culture of debate, discussion, new ideas of social revolution</p> <p><b>(c) Print did not directly shape the people's minds but opened up the possibility of thinking differently</b></p> <p>(d) It aroused hostility against monarchy, its mentality and mocked it</p>	<p><b>105. What is the correct meaning of agglomeration economies?</b></p> <p>(a) Many industries set up in rural centres  (b) Industries are basically agro-based.  <b>(c) Many industries tend to come together to make use of the advantages offered by the urban centres</b>  (d) Industries set up produce raw material for secondary sector.</p>

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<p><b>106. When running water cuts through clayey soils and makes deep channels, they lead to:</b></p> <p>(a) Gully erosion  (b) Sheet erosion  (c) Deforestation  (d) Afforestation</p>	<p><b>110. Which one of the following groups of cities is connected by the National Highway No. 1?</b></p> <p>(a) Delhi – Amritsar  (b) Delhi – Kolkata  (c) Delhi – Mumbai  (d) Varanasi – Kanyakumari</p>
<p><b>107. The helicopter services to Oil and Natural Commission in its offshore operations are provided by:</b></p> <p>(a) Air India  (b) Indian Airlines  (c) Pawanhans helicopters  (d) Alliance Air</p>	<p><b>111. Forests and wastelands belonging to both private individuals and government are known as:</b></p> <p>(a) Sacred groves  (b) Reserved forest  (c) Protected forests  (d) Unclassed forests</p>
<p><b>108. Which of the following crops are grown with the onset of monsoons and are harvested in the month of September and October?</b></p> <p>(a) Rabi  (b) Kharif  (c) Zadi  (d) None of the above</p>	<p><b>112. The mountain share in the total land area is:</b></p> <p>(a) 30%  (b) 27%  (c) 43%  (d) 40%</p>
<p><b>109. Which one of the following agencies, market steel for the public sector plants ?</b></p> <p>(a) HAIL  (b) SAIL  (c) TATA STEEL  (d) MNCC</p>	<p><b>113. Admiral Gorshkov, the Soviet aircraft carrier imported by India is now named –</b></p> <p>(A) INS Vikrant  (B) INS Vikramaditya  (C) INS Virat  (D) INS Vishaal</p>

<p><b>114. What are the three R's to save the environment?</b></p> <p>(a) Reduce, Recycle, Reuse  (b) Replenish, Reduce, Reuse  (c) Reconstruct, Recycle, Reduce  (d) Reduce, Recycle, Remove</p>	<p><b>118. Which of the following chemicals causes depletion of the ozone layer?</b></p> <p>(a) Carbon tetrachloride  (b) Methane  (c) Chloro fluoro carbon  (d) Carbon monoxide</p>
<p><b>115. The unit for measuring potential difference is:</b></p> <p>A. Watt  B. Ohm  C. Volt  D. kWh</p>	<p><b>119. Which of the following will undergo addition reactions?</b></p> <p>(a) CH<sub>4</sub>  (b) C<sub>3</sub>H<sub>8</sub>  (c) C<sub>2</sub>H<sub>6</sub>  (d) C<sub>2</sub>H<sub>4</sub></p>
<p><b>116. Identify 'A' in the following reaction:</b>  <b>CH<sub>3</sub>COOH + Na<sub>2</sub>CO<sub>3</sub> → A + CO<sub>2</sub> + H<sub>2</sub>O</b></p> <p>(a) CH<sub>3</sub>COONa  (b) CH<sub>2</sub>(Na)COOH  (c) NaOH  (d) NaHCO<sub>3</sub></p>	<p><b>120. expand the abbreviation GAP</b></p> <p>(a) Government Action Plan  (b) Ganga Action Plan  (c) Government Agency for Pollution Control  (d) Government Animal Protection Plant</p>
<p><b>117. The asexual reproduction in the Spirogyra involves:</b></p> <p>(a) Breaking up of filaments into smaller bits  (b) Division of a cell into many cells  (c) Division of a cell into two cells  (d) Formation of a large number of buds</p>	<p><b>121. Which of the following is a contraceptive?</b></p> <p>a. Copper t  b. Condom  c. Diaphragm  d. All of these</p>

<p><b>122. Project 75 Is Related To...</b></p> <p>A. <b>Indian Navy</b>  B. Indian Airforce  C. Indian Army  D. Maharashtra Sainik Prabodhini</p>	<p><b>126. Who of the following was the Chief of Army at the time of Indo-Pak war of 1971?</b></p> <p>(A) General PP Kumaramangalam  <b>(B) Field Marshal SHFJ Manekshaw</b>  (C) General JN Chaudhari  (D) General KS Thimayya</p>
<p><b>123. Which of the following organizations has Sarvatra Sarvottam Suraksha as its slogan?</b></p> <p>(A) Border Security Force  (B) Sikh Light Infantry  (C) Indian Air Force  <b>(D) National Security Guard</b></p>	<p><b>127. The objective of India's space programme was</b></p> <p>(A) Mass communication and education via satellite  (B) Survey and management of natural resources  (C) Development of indigenous satellites and satellite launch vehicles  <b>(D) All of the above</b></p>
<p><b>124 Which of the following is India's first indigenously developed nuclear-powered submarine?</b></p> <p>(A) INS Vikrant  <b>(B) INS Trikhand</b>  (C) INS Arihant  (D) INS Sindhurakshak</p>	<p><b>128. IGMT Stands For.</b></p> <p>A. Indira Gandhi Missile Technology  B. Indian Guarantee Mission Technology  <b>C. Integrated Guided Missile Technology</b>  D. None Of The Above</p>
<p><b>125 Indra series of exercises are jointly held biennially in the Indian Ocean by India and –</b></p> <p><b>(A) Russia</b>  (B) France  (C) Singapore  (D) Israel</p>	<p><b>129. Indian Space Research Organization Was Established in</b></p> <p><b>A. 1969</b>  B. 1955  C. 1998  D. 1991</p>

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**Directions -(Q. 130 to 134):** Some of the sentences have errors and some have none. Find out which part of a sentence has error and blacken the oval corresponding to the appropriate to the appropriate letter (A,B,C).If there is no error, blacken the oval corresponding to (D) in the Answer Sheet.

130. Kiran was not doing well (A)/ yesterday so he absented (B)/ from the seminar. (C)/ No error. (D)

131. The guard hides himself behind (A)/ the tree to observe what (B)/ the stranger is doing. (C)/ No error. (D)

132. The supervisor said to the (A)/ servant, "The containers are (B)/ empty, Please fill". (C)/ No error.(D)

133. The manager said "The employees (A)/ who perform well, they (B)/ will get the incentives. (C)/ No error.(D)

133. I read with pleasure Vivekananda's (A)/ works who was a (B)/disciple of Ramakrishna Paramahamsa.(C)/ No error (D)

**Directions :** In questions 134 to 138, four alternatives are given for the Idiom/Phrase. Choose the alternative which best expresses the meaning of the idiom/phrase and mark it on the answer sheet.

**134. A fair weather friend.**

- (A) At daggers drawn
- (B) A selfish .**
- (C) A dark horse
- (D) A friend in need

**135. Addle egg :**

- (A) foolish**
- (B) smoker
- (C) useful
- (D) proud)

**Directions : Read the following passage carefully and answer the questions given below it.**

Recent advances in science and technology have made it possible for geneticists to find out abnormalities in the unborn foetus and take remedial action to rectify some defects which would otherwise prove to be fatal to the child. Though genetic engineering is still at its infancy, scientists can now predict with greater accuracy a genetic disorder. It is not yet an exact science since they are not in a position to predict when exactly a genetic disorder will set in. While they have not yet been able to change the genetic order of the gene in germs, they are optimistic and are holding out that in the near future they might be successful in achieving this feat. They have, however, acquired the ability in manipulating tissue cells. However, genetic misinformation can sometimes be damaging for it may adversely affect people psychologically. Genetic information may lead to a tendency to brand some people as inferiors. Genetic information can therefore be abused and its application in deciding the sex of the foetus and its subsequent abortion is now hotly debated on ethical lines. But on this issue geneticists cannot be squarely blamed though this charge has often been levelled at them. It is mainly a societal problem. At present genetic engineering is a costly process of detecting disorders but scientists hope to reduce the costs when technology becomes more advanced. This is why much progress in this area has been possible in scientifically advanced and rich countries like the USA, UK and Japan. It remains to be seen if in the future this science will lead to the development of a race of supermen or will be able to obliterate disease from this world.

136. Which of the following statements according to passage is/are true ?

(1) Technicians are not able to determine the time when genetic disorder will set in

(2) Technicians have been able to manipulate tissue cells.

(A) 1 only (B) 2 only

(C) Both 1 and 2 (D) Either 1 or 2

137. Which of the following is the same in meaning as the word 'squarely' as used in the passage?

(A) rigidly (B) firmly

(C) directly (D) at right angle

<p><b>138. Which of the following is not true, according to the passage?</b></p> <p>(A) Society is not affected by the research in genetic engineering.</p> <p>(B) Genetic engineers are not able to say some things with certainty.</p> <p>(C) If genetic information is not properly handled, it will create problems.</p> <p>(D) Manipulation of genes is presently done only in tissue cell.</p>	<p><b>Directions : Rearrange the jumbled paragraph.</b></p> <p>142. 1. The problem P. at a price Q. is to build houses R. lower middle-class people S. today 6. can afford to pay</p> <p>(A) QRSP (B) SQPR (C) PQSR (D) RSPQ</p>
<p><b>139. According to the author, the present state of knowledge about heredity has made geneticists:-</b></p> <p>(A) introspective (B) accusative (C) arrogant (D) optimistic</p>	<p>143. 1. Computer lovers claim P. with the help of a computer and Q. declare results R. that they can learn everything S. it can also administer tests, 6. and award certificates.</p> <p>(A) PSQR (B) RSPQ (C) RPSQ (D) QPRS</p>
<p><b>140. What is the tone of the author in the last sentence of the passage?</b></p> <p>(A) resignation (B) cautious (C) relief (D) concern</p>	<p>144. 1. Freedom fighters P. an enhanced pension Q. and their spouses R. would now get S. of `10,000 a month 6. effective from October 2</p> <p>(A) SQPR (B) QRPS (C) RQSP (D) QSPS</p>
<p><b>141. Which of the following is not true of the genetic engineering movement?</b></p> <p>(A) Possibility of abuse (B) It is confronted by ethical problems.</p> <p>(C) Increased tendency to manipulate gene cells.</p> <p>(D) Acquired ability to detect genetics disorders in unborn babies.</p>	<p>145. 1. In the present day world, P. technology, medicine Q. in the fields of R. demand for specialists S. there is a lot of 6. and business management</p> <p>(A) RPQS (B) PQRS (C) SRQP (D) SQRP</p>

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<p>146. Give the antonym of <b>MILITARY</b></p> <p><b>A.Civil</b></p> <p>B.Militant</p> <p>C.Civility</p> <p>D.Coup</p>	<p>149. Find most opposite word of <b>COERCIVE</b></p> <p>A.Progressive</p> <p>B.Promoting</p> <p>C.Opinionated</p> <p><b>D.Gentle</b></p>
<p>147. Choose the word which is most opposite in meaning to the word <b>EMBRACE</b></p> <p>A.Disobey</p> <p>B.Contradict</p> <p><b>C.Reject</b></p> <p>D.Obscure</p>	<p>150. Find the word just opposite of <b>TIMID</b></p> <p>A.Gentle</p> <p>B.Tired</p> <p><b>C.Brave</b></p> <p>D.Snicker</p>
<p>148. Find the most opposite meaning of <b>SUBVERSION</b></p> <p>A.Destabilisation</p> <p>B.Clarity</p> <p><b>C.Compliance</b></p> <p>D.Sanity</p>	

Space Of Rough Work

Question Paper Credit.

Mr. Manish Patil, Director, Disha Foundation.

Dr. Tanmay Patil, M.sc., P.hd. Botany

Mr. RR Sir, Mathematics Expert for NDA mathematics.

Prof. Sharad Patil. Aviation Engineer.

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## SPI Is A Golden Opportunity... Don't Miss It

### एसपीआयच्या ११ विद्यार्थ्यांची उत्तुंग भरारी एनडीए व एनएसआठी ४७८ विद्यार्थ्यांची गुणवत्ता यादी जाहीर

समाज वृत्तवेत्ता

औरंगाबाद, ता.७ : केंद्रीय लोकसेवा आयोगाच्यावतीने पंतप्रधानी (ना.साहा) राष्ट्रीय संरक्षण अकादमी व उत्तुंग गुणवत्ता यादी पत्रे आली. या गुणवत्ता यादीची सेवापूर्व प्रतिलिपि (एनपीआय) ११ स्थान पटकावरले आर.ए.ए. राष्ट्रीय संरक्षण नेटवर्क अकादमीवरले नागपूर व मुंबई येथे ६ रोजी लेखी परीक्षा होती. या निवेदनात



विनायक ओरपे, दिव्येश पाटील, प्रहलद साठे, अश्विन शिंदे, प्रहलद साठे, अश्विन शिंदे, प्रहलद साठे, अश्विन शिंदे, प्रहलद साठे, अश्विन शिंदे, प्रहलद साठे, अश्विन शिंदे

## 22 cadets of SPI in Aurangabad make it to Indian Armed Forces

Times News Network

### शासकीय सैनिकी संस्थेचे २२ विद्यार्थी 'एनडीए'मध्ये

म. टा. प्रतिनिधी, औरंगाबाद

राष्ट्रीय संरक्षण अकादमीच्या (एनडीए) प्रवेश प्रक्रियेत शासकीय सैनिकी सेवापूर्व शिक्षण संस्थेने पंदाही एवढ्या कामय ठेवला आहे. प्रवेश प्रक्रियेत संस्थेचे २२ विद्यार्थी पात्र ठरले आहेत. 'एनडीए' प्रवेशसाठी लोकसेवा



is a one-of-its-kind state government-run institution that prepares the youth for the officer cadre of the Indian Armed Forces

Service Selection Board (SSB) interview. The SPI continues to shine at the national level by producing more and more cadets for IMA and INA," he said. Vinayak Orpe (all-India rank 21), Divyesh Patil (65), Pushkar Sadavarte (67), Prathamesh Hase (70) and Eshan Ghanote (98) are among top SPI cadets, who have made it to the Indian Armed Forces, a release said. Earlier, in January 17 SPI

Lokmat Times

## Desire to serve country, 5 father-son duos join army

Aurangabad First looks at such families where both the father and son are serving in Indian Armed Forces

Father-son duos from SPI  
The father-son duos from SPI who joined...

1st SPI student to join Goa Academy  
I was motivated to join the armed forces when I was in school, an Air Force officer, who visited our...

First in family to join army  
I'm the first person from my family to join the armed forces. As my father was posted in...



An Initiative By Disha Foundation  
Army and Colonel Prakash Chaudhary (Army) where both the father and SPI and son are serving in the armed forces.

Contact:  
9371222244, 9028916498  
Office Address: Disha Foundation,  
42, Aamdar Road, Satara Patisar,  
Aurangabad, Maharashtra. 431001  
Email : Manish.b.Bankar@gmail.com

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