

**SECTION-A**

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| <b>1.</b> | If $x = 1$ and $y = 2$ is a solution of the pair of linear equations $2x-3y+a= 0$ and $2x+3y- b = 0$ , then :<br>(A) $a = 2b$ (B) $2a = b$ (C) $a + 2b = 0$ (D) $2a + b = 0$  | <b>1</b> |
| <b>2.</b> | If $\alpha$ and $\beta$ are the zeroes of polynomial $3x^2 + 6x + k$ such that $\alpha + \beta + \alpha\beta = -\frac{2}{3}$ , then value of k is :<br>(A) 8                      (B) 8                      (C) 4                      (D) 4 | <b>1</b> |
| <b>3.</b> | The least number which is a perfect square and is divisible by each of 16, 20 and 50, is :<br>(A) 1200                      (B) 100                      (C) 3600                      (D) 2400   | <b>1</b> |

**SECTION- B**

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| <b>4.</b> | Observe the following factor tree and find the value of x, y and z: <div style="text-align: center; margin: 10px 0;"> <pre>                     graph TD                         x[x] --- 2[2]                         x --- y[y]                         y --- 3[3]                         y --- 1855[1855]                         1855 --- 5[5]                         1855 --- 371[371]                         371 --- 7[7]                         371 --- z[z]                     </pre> </div> | <b>2</b> |
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| <b>5.</b> | If one zero of the polynomial $3x^2 - 8x + 2k + 1$ is seven times of the other, find value of k? | <b>2</b> |
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**SECTION-C**


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| <b>6.</b> | Find the values of k for which the pair of linear equations $kx + y = k^2$ and $x + ky = 1$ have infinitely many solutions.   | <b>3</b> |
| <b>7.</b> | The set of Mathematics, Physics and Physical Education books have to be stacked in such a way that all the books are stored topic wise. The number of Mathematics, Physics and Physical Education books are 14, 18 and 22. Determine the number of stacks of each books provided books are of the same thickness. | <b>3</b> |

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|----------------|--|----------------|---------|---------|---------|---------|---------|---------|---------|-----------|----|---|----|----|----|----|----|----------|
| <b>8.</b>      | Calculate mean by using step-deviation method only. <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width:15%;">CLASS INTERVAL</td> <td style="width:12.5%;">120-140</td> <td style="width:12.5%;">140-160</td> <td style="width:12.5%;">160-180</td> <td style="width:12.5%;">180-200</td> <td style="width:12.5%;">200-220</td> <td style="width:12.5%;">220-240</td> <td style="width:12.5%;">240-260</td> </tr> <tr> <td>FREQUENCY</td> <td>12</td> <td>8</td> <td>15</td> <td>17</td> <td>22</td> <td>10</td> <td>16</td> </tr> </table> | CLASS INTERVAL | 120-140 | 140-160 | 160-180 | 180-200 | 200-220 | 220-240 | 240-260 | FREQUENCY | 12 | 8 | 15 | 17 | 22 | 10 | 16 | <b>3</b> |
| CLASS INTERVAL | 120-140  | 140-160        | 160-180 | 180-200 | 200-220 | 220-240 | 240-260 |         |         |           |    |   |    |    |    |    |    |          |
| FREQUENCY      | 12   | 8              | 15      | 17      | 22      | 10      | 16      |         |         |           |    |   |    |    |    |    |    |          |

**SECTION – D**

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|----------------|--|----------------|-------|-------|-------|-------|-------|-------|-------|-----------|---|---|---|----|---|---|---|----------|
| <b>9.</b>      | If median of following frequency distribution is 32.5. Find values of x and y, if total of the frequencies is 40. <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width:15%;">Class interval</td> <td style="width:10%;">0-10</td> <td style="width:10%;">10-20</td> <td style="width:10%;">20-30</td> <td style="width:10%;">30-40</td> <td style="width:10%;">40-50</td> <td style="width:10%;">50-60</td> <td style="width:10%;">60-70</td> </tr> <tr> <td>Frequency</td> <td>x</td> <td>5</td> <td>9</td> <td>12</td> <td>y</td> <td>3</td> <td>2</td> </tr> </table> | Class interval | 0-10  | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | Frequency | x | 5 | 9 | 12 | y | 3 | 2 | <b>5</b> |
| Class interval | 0-10   | 10-20          | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 |       |       |           |   |   |   |    |   |   |   |          |
| Frequency      | x  | 5              | 9     | 12    | y     | 3     | 2     |       |       |           |   |   |   |    |   |   |   |          |

**SECTION – E**

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| <b>10.</b> | <b>CASE STUDY:</b> A school is organizing a grand cultural event to show the talent of its students. To accommodate the guests, the school plans to rent chairs and tables from a local supplier. It finds that rent for each chair is 50 and for each table is 200. The school spends 30,000 for renting the chairs and tables. Also, the total number of items (chairs and tables) rented are 300. If school rents ' <b>x</b> ' chairs and ' <b>y</b> ' tables, then answer the following questions: <ol style="list-style-type: none"> <li>1. Write down the pair of linear equations representing the given information.</li> <li>2. (A) Find the number of chairs and number of tables rented by the school.<br/>OR<br/>(B) If the school wants to spend a maximum of Rs. 27,000 on 300 items (table and chairs), then find the number of chairs and tables it can rent.</li> <li>3. What is maximum number of tables that can be rented in Rs.30,000 if no chair is rented ?</li> </ol> |  | <b>1</b><br><b>2</b><br><b>1</b> |
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