

## Worksheet: Three-Dimensional Geometry

Rajasthan State Board · Class 12 · Mathematics · 3 questions · 13 marks

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 13

**Q1.** Find the vector and Cartesian equations of the line through  $(1, 2, 4)$  with direction ratios  $(2, 1, 3)$ . [3 marks]

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**Q2.** Find the distance of the point  $(2, 3, 5)$  from the plane  $x + 2y - 2z = 9$ . [4 marks]

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**Q3.** Find the shortest distance between the lines  $\vec{r} = (\hat{i} + 2\hat{j} - k) + \lambda(\hat{j} - 5\hat{k})$  and  $\vec{r} = (2\hat{i} - 5\hat{j}) + \mu(2\hat{i} + 5\hat{j} - 2\hat{k})$ . [6 marks]

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