# Speed, Distance & Time: Medium Practice Paper 7 Answers

| Q# | Answer | Explanation |
|---|---|---|
| 1 | D | The graph shows her distance from home, which climbs to 6 km and later returns to 0. She walked 6 km out and 6 km back, so she covered 6 + 6 = 12 kilometres even though she finished where she started. |
| 2 | A | Divide each distance by its time: 180 ÷ 2 = 90, then 225 ÷ 3 = 75 and 260 ÷ 4 = 65 kilometres each hour. Train A is fastest at 90 km/h, even though it covers the shortest distance. |
| 3 | A | Four and a half minutes for each kilometre means six kilometres take 4.5 × 6 = 27 minutes. |
| 4 | E | The train covers 90 ÷ 3 = 30 metres each second. In an hour that is 30 × 3600 = 108000 metres, which is 108 kilometres, so its speed is 108 km/h. |
| 5 | E | The rest of the journey is 300 − 120 = 180 kilometres, covered in 5 − 2 = 3 hours. Its average speed is 180 ÷ 3 = 60 km/h. |
| 6 | B | The car keeps moving at 20 metres each second while the driver reacts, so it covers 20 × 0.7 = 14 metres before the brakes are touched. |
| 7 | B | Three kilometres is 3,000 m, which is 3,000 ÷ 400 = 7.5 laps. At 80 seconds each that takes 7.5 × 80 = 600 seconds, and 600 ÷ 60 = 10 minutes. |
| 8 | B | The first leg takes 90 ÷ 60 = 1.5 hours and the second 40 ÷ 80 = 0.5 hours, which is 2 hours of travelling plus the 10 minute wait. From 08:40 to 10:50 is 2 hours and 10 minutes. |
| 9 | C | Put them all into kilometres per hour: 20 m/s is 72 km/h and 18 m/s is 64.8, while 1.1 km a minute is 66 km/h and 0.9 km a minute is 54. The largest is 72 km/h. |
| 10 | C | Over 3 hours at an average of 12 km/h she covered 12 × 3 = 36 kilometres. The cycling accounted for 15 × 2 = 30 of them, so the walk was 36 − 30 = 6 kilometres. |

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| 11 | A | Each leg takes its distance divided by its speed: 60 ÷ 60 = 1, then 90 ÷ 45 = 2 and 50 ÷ 50 = 1 hour. Altogether that is 1 + 2 + 1 = 4 hours. |
| 12 | D | In the first hour the car covered 40 km and in the second it covered 100 − 40 = 60 km. The difference in speed is 60 − 40 = 20 km/h, which is why the line is steeper in the second hour. |
| 13 | C | The journey takes 210 ÷ 70 = 3 hours. Counting back three hours from the arrival, from 12:05 to 15:05 is 3 hours. |
| 14 | D | Twelve minutes is a fifth of an hour, so the time is 1.2 hours. The average speed is 84 ÷ 1.2 = 70 km/h. |
| 15 | E | Speed is the distance covered in each hour, so the distance is shared between the hours by dividing. Here that is 150 ÷ 2.5 = 60 km/h. |

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