**Design & Technology**

**Mathematics for D&T –** Graphs and Charts

**Materials required for questions**

* Pencil
* Rubber
* Calculator

**Instructions**

* Use black ink or ball-point pen
* Try answer all questions
* Use the space provided to answer questions
* Calculators can be used if necessary

**Advice**

* Marks for each question are in brackets
* Read each question fully
* Try to answer every question
* Don’t spend too much time on one question

**Good luck!**

**Q1.** The table shows the relative humidity at different times of the day

|  |  |  |  |
| --- | --- | --- | --- |
| 12:00 | 13:00 | 14:00 | 15:00 |
| 65% | 68% | 72% | 75% |

Draw a graph to represent this data and predict the relative humidity at 16:30. You must draw a graph for full marks **(3 marks)**

**Q2.** Calculate the CO2 emissions when the car is not moving **(4 marks)**

**A graph with a line

Description automatically generated**

**Q3.** The table shows scores for a DT class. Complete the cumulative frequency graph and estimate the number of scores about 70% **(5 marks)**

|  |  |  |
| --- | --- | --- |
| Score (%) | Frequency | Cumulative frequency |
| 0 < x < 20 | 2 |  |
| 20 < x <40 | 3 |  |
| 40 < x < 60 | 5 |  |
| 60 < x < 80 | 8 |  |
| 80 < x < 100 | 3 |  |

**Q4.** The table shows the RPM needs for different densities of materials

|  |  |
| --- | --- |
| RPM | Density (kg/m3) |
| 1200 | 14 |
| 1500 | 18 |
| 1800 | 22 |

Calculate the density for a material with a RPM of 800 **(4 marks)**

**Q5.** The table below shows the donation amounts for a new DT workshop. Represent this data as a histogram and calculate the number of donations over £900 **(4 marks)**

|  |  |
| --- | --- |
| Donation amount | Frequency |
| 0 < x < 250 | 12 |
| 250 < x < 500 | 14 |
| 500 < x < 750 | 5 |
| 700 < x < 1000 | 7 |
| 1000 < x < 1500 | 3 |

**Answers**

**Q1.**

Around 80% ish

**Q2.**

500ppm

**Q3.**

Graph drawn

13-14 as estimate

**Q4.**

8.67kg/m3

**Q5.**

5.33 people