

Pearson BTEC Level 2 Diploma in Aerospace and Aviation Engineering (Foundation Knowledge)

Science for Engineering

Sample mark scheme

November 2015

Version 1.0

The mark scheme shows the question number, the answer, the associated assessment criteria covered in the unit specification (*Unit 4 Mathematics and Science for Engineering*) and the total mark for each item.

A screen may contain one or more items. Each item is worth 1 mark.

Question Number	Answer	Assessment Criteria	Total Mark
1	23	4.1	(1)
2	Protons and neutrons	4.1	(1)
3	Periods	4.2	(1)
4	2.8.8	4.2	(1)
5	Stable	4.2	(1)
6	Made of one type of atom	4.2	(1)
7	Ionic (a strong electrostatic attraction)	4.3	(1)
	Covalent (the sharing of a pair of electrons)	4.3	(1)
8	Na transfers an electron to Cl	4.3	(1)
9	They contain electrons that are free to move	4.3	(1)
10	Whether atoms slide easily past each other	4.3	(1)
11	Solid to a liquid (melting)	4.4	(1)
	Gas to a liquid (condensation)	4.4	(1)
12	5 770 000 N	5.1	(1)
13	40 kN	5.1	(1)
14	60	5.1	(1)
15	50 Nm	5.2	(1)
16a	100 Nm	5.2	(1)
16b	Anticlockwise	5.2	(1)
17	Tensile	5.3	(1)
18	25 000	5.3	(1)
19	OB	5.3	(1)
20	0.39	6.1	(1)
21	47.1	6.1	(1)
22	16.33 m/s²	6.1	(1)
23	28 125.0 N	6.1	(1)

Question Number	Answer	Assessment Criteria	Total Mark
24	0.99	6.2	(1)
25	Motion will continue until a force is applied to stop it	6.2	(1)
26	Conduction (touching a hot-plate and getting burnt)	7.1	(1)
	Convection (hot air rising, cooling and falling)	7.1	(1)
27	1000	7.1	(1)
28	Indicates the pitch	7.2	(1)
29	100 N	7.3	(1)
30	Applied force is larger	7.3	(1)
31	0.5	7.3	(1)
32	4	7.3	(1)
33	8000	8.1	(1)
34	Pressure	8.1	(1)
35	The weight of water displaced	8.1	(1)
36	In all directions	8.1	(1)
37	Increase in cavitation	8.1	(1)
38	Pressure decreases	8.2	(1)
	Velocity Increases	8.2	(1)
39	273 K	9.1	(1)
40	Average speed increases	9.1	(1)
41	5 litres	9.1	(1)
42	Troposphere	9.2	(1)
43	Altitude increases, temperature decreases	9.3	(1)
44	Decreases gradually	9.3	(1)
45	Humidity	9.3	(1)

**Total = 50
Marks**

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