1.5 Paper, Board and Packaging: 10-minute Pack

AQA 8552 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions.

1 A designer is choosing paper for an information leaflet. A sample has a mass of 120 g and an area of 2.0 m². Calculate its grammage in g/m2.

(a) Calculate the grammage. **(2)**

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(Total for Question 1 is 2 marks)

2 A packaging trial records the following compression force before the sides buckle. Sample A: 42 N, 45 N, 43 N. Sample B: 51 N, 48 N, 50 N. Calculate the mean for each and select a sample for a package expected to carry 47 N.

(a) Calculate both means and make a selection. **(4)**

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(Total for Question 2 is 4 marks)

3 A company is reducing packaging waste. Explain two ways to reduce material use while keeping a package fit for purpose.

(a) Explain two approaches. **(3)**

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(Total for Question 3 is 3 marks)

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Mark scheme · 1.5 Paper, Board and Packaging: 10-minute Pack

Question 1

(a) 120 / 2.0	**M1**
(a) 60 g/m2 cao	**A1**

(a) Answer: 60 g/m2

Question 2

(a) A: (42+45+43)/3	**M1**
(a) A mean = 43.3 N	**A1**
(a) B: (51+48+50)/3	**M1**
(a) B mean = 49.7 N and selects B against 47 N	**A1**

(a) Answer: A mean = 43.3 N; B mean = 49.7 N. Select B because its mean exceeds 47 N, while noting one trial or a design safety margin may still matter.

Question 3

(a) first valid strategy with an explanation of how it reduces material use; accept any defensible approach	**B1**
(a) explains how the package remains fit for purpose, or how this is checked, for the proposed reduction or reductions	**B1**
(a) second distinct valid strategy with an explanation of how it reduces material use; a trade-off alone does not earn this mark	**B1**

(a) Answer: Reduce excess package dimensions so less board is needed around the product. Use folds or ribs to provide stiffness with thinner board, reducing board mass. Check that both changes preserve the required protection through testing. Accept any two distinct defensible approaches with explanations.

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