



PIABC LEVEL 3 CERTIFICATE IN PACKAGING

(Qualification Number: 610/0741/9)

SAMPLE EXAMINATION QUESTIONS WITH SUGGESTED SOLUTIONS

1. Excluding inform and contain, name the other FOUR functions of packaging. (4 x ½ mark)

1.	Sell
2.	Protect
3.	Preserve
4.	Convenience

2. Using examples, briefly explain how primary packaging performs the inform function of packaging. (3 marks)

The pack must provide the consumer with all information they need about the product. Information must be legible by humans and electronic means. Information must provide product identify, how to use the product, storage and handling instructions and promotional information. Packs provide information for both legal and marketing reasons. Some information is legally required to be present on the packs. Marketing information will help contribute towards the selling function.

3. Using examples, briefly explain how secondary packaging performs the contain function of packaging. (2 marks)

Case will contain an appropriate number of packs. Case will enclose the product and be sealed with adhesive or tape to prevent accidental or deliberate loss of product. Case will prevent loss of primary packs to ensure correct number of packs reaches the retailer/distributor.

4. Using examples, provide a definition for tertiary packaging. (2 marks)

'Tertiary' or 'Transport' packaging is packaging that is used to group secondary packaging together to aid handling and transportation and prevent damage to the products, for example, the pallet and stretch wrap used to transport a number of cardboard outers containing boxes of soap powder.

5. Using mayonnaise packed in a glass bottles, collated in trays and palletised then shipped from the manufacturer to the retailer. Identify TWO mechanical hazards that the complete pack may experience during its journey, describing the typical causes and briefly explain how the packaging system minimises the effects. (2 x 3 marks)

For the glass jar the typical mechanical hazards would be shock, vibration and puncture.

Hazard	Causes	Possible Effects	Mitigating the effects
Shock	<ul style="list-style-type: none"> • Falls from vehicles, possibly due to poor stacking • Shunts due to irregular movement along conveyors • Drops due to manual handling • Impacts in transit due to driving over poor road surfaces 	<ul style="list-style-type: none"> • Breakage of jar • Deformation of closure • Damage to case or tray 	<ul style="list-style-type: none"> • Reduce the amount of manual handling
			<ul style="list-style-type: none"> • Use additional cushioning materials
Vibration	Vibration occurs naturally in all types of transport and is enhanced by: <ul style="list-style-type: none"> • Position in vehicle • Irregular road surfaces • Unbalanced loads 	<ul style="list-style-type: none"> • Breakage of bottle • Scuffing of label • Stack resonance of pallet 	<ul style="list-style-type: none"> • Reduce product/pack movement:
			<ul style="list-style-type: none"> • Reduce contact points:
			<ul style="list-style-type: none"> • Protect surfaces:
Puncture and Tearing	<ul style="list-style-type: none"> • Poor quality pallets • Bad handling practices e.g. forklift forks 	<ul style="list-style-type: none"> • Breakage of bottle • Product spoilage • Load collapse 	<ul style="list-style-type: none"> • Good pallet quality
			<ul style="list-style-type: none"> • Good handling practices

6. Glass is made up from FOUR abundant natural resources. List these FOUR materials. (4 x ½ mark)

1.	Sand (or Silicon Dioxide)
2.	Limestone (or Calcium Carbonate)
3.	Soda Ash (or Sodium Carbonate)
4.	Aluminium (or Aluminium Oxide)

7. What does PET acronym stand for? (1 mark)

Polyethylene Terephthalate

8. For the following types of plastic packaging. Name ONE common use for each. (4 x ½ mark)

1.	PVC	Bottles for toiletries Blister packs Rigid and flexible films
2.	HDPE	Bottles Drums Bags and sacks Boil in bag applications
3.	LDPE	Shrink film, bags, sacks Coating of heat sealing Small bottles where flexibility is required Snap on caps, screw threaded caps for limited use
4.	PP	Bottles, jars and closures, especially those with live hinges Film for confectionary, biscuits and snacks Carton overwrap Thermoform tubs

9. What is the alloy of iron and carbon? (½ mark)

Steel

10. A two-piece draw and wall iron (DWI) container can be used for what type of packaging? (½ mark)

Drinks and food cans

11. Flexible or laminate packaging is usually made up from a number of layers of materials which are stuck or bonded together. Name TWO of the methods for bonding the layers together. (2 x ½ mark)

1.	Wet bonding Dry bonding
2.	Heat set adhesive with extrusion lamination and coating

12. A layer of fluted paper sandwiched between two layer of flat paper. This is a description of what type of packaging material? (½ mark)

Corrugated board

13. List FOUR reasons why a company may change a product's packaging. (4 x ½ mark)

1.	
2.	Marketing – new variety, legislation or promotion
	New branding
	Cost savings
3.	Change in format of the contents
	Change in format of packaging
4.	

14. Name the SIX common steps in the packaging development process. (6 x ½ mark)

1.	Define the objective
2.	Developing a packaging brief
3.	Developing solutions
4.	Packaging materials and pack test
5.	Finalising specification
6.	Launch and review

15. Briefly describe environmentally responsible packaging. (2 marks)

An environmentally responsible packaging gets the product from producer to consumer with minimum use of materials, minimum use of energy and minimum amount of waste. (Must also consider inert or degradable, from renewable or non-renewable sources, capable of being refilled or not and easy or difficult to recycle.)

16. Identify TWO techniques that can be used to assess the impact of packaging on the environment. (2 x 1 mark)

1.	Life Cycle Analysis, Life Cycle Assessment, CO2 Equivalent, Carbon Measurement or a similar approach
2.	

17. In theory all possible colours can be made up combining CMYK. What does the abbreviation CMYK stand for? (4 x ½ mark)

C	Cyan
M	Magenta
Y	Yellow
K	Key colour usually black

18. What is the name of the printing process which uses a flexible relief plate for printing crisp packets? (½ mark)

Flexographic

19. List FOUR different ways a pack can be labelled. (4 x ½ mark)

1.	Wet Glue
2.	Self-Adhesive
3.	Shrink Sleeved
4.	Stretch Sleeved

20. What does the acronym VFFS stand for? (½ mark)

Vertical Form Fill Seal

21. The packing line can be summarised into 10 process steps. Complete the missing process steps below. (4 x ½ mark)

1.	Loading the packing line
2.	Inspection and cleaning
3.	Presentation to filler
4.	Filling
5.	Closing the pack
6.	Labelling
7.	Cartonnised
8.	End of line operations
9.	Palletised
10.	Removal from the packing line