

Past-paper walk-through

Water ■ 10.1

eXercise

Questions in this set

- 0620/22 N25 Q30 ■ 1 mark
- 0620/22 J25 Q29 ■ 1 mark
- 0620/23 J25 Q28 ■ 1 mark
- 0620/23 J25 Q29 ■ 1 mark
- 0620/22 M25 Q31 ■ 1 mark
- 0620/22 M25 Q32 ■ 1 mark

Question 30

0620/22 N25 ■ Q30 ■ 1 mark

30 Which flow chart describes the correct treatment sequence of the domestic water supply?

- A** filtration → chlorination → sedimentation
- B** sedimentation → chlorination → filtration
- C** chlorination → filtration → sedimentation
- D** sedimentation → filtration → chlorination

Solution 30

Answer: **D**

Why

- First let the large suspended particles settle out – sedimentation.
- Then filter to remove the finer insoluble solids.
- Chlorinate last, to kill the bacteria in water that is already clear.

Question 29

0620/22 J25 ■ Q29 ■ 1 mark

29 Water is added separately to anhydrous copper(II) sulfate and to anhydrous cobalt(II) chloride.

Which row shows the colour changes?

	anhydrous copper(II) sulfate	anhydrous cobalt(II) chloride
A	blue to white	blue to pink
B	blue to white	pink to blue
C	white to blue	blue to pink
D	white to blue	pink to blue

Solution 29

Answer: **C**

Why

- Anhydrous copper(II) sulfate is *white* and turns blue when water is added.
- Anhydrous cobalt(II) chloride is *blue* and turns pink.
- Both are standard tests for water, and both go from the anhydrous colour to the hydrated one.

Question 28

0620/23 J25 ■ Q28 ■ 1 mark

28 A sample of water taken from a river contains harmful microbes.

What is a source of harmful microbes in the river water?

- A** sewage
- B** fertilisers
- C** detergents
- D** plastics

Solution 28

Answer: **A**

Why

- Harmful microbes come from human or animal waste.
- Untreated sewage entering a river is the source.
- Fertilisers, detergents and plastics are pollutants but they are not living microbes.

Question 29

0620/23 J25 ■ Q29 ■ 1 mark

- 29** Anhydrous copper(II) sulfate and anhydrous cobalt(II) chloride change colour when water is added to them.

Which row shows the correct colour changes?

	copper(II) sulfate	cobalt(II) chloride
A	blue to white	blue to pink
B	blue to white	pink to blue
C	white to blue	blue to pink
D	white to blue	pink to blue

Solution 29

Answer: **C**

Why

- Anhydrous copper(II) sulfate is white and turns blue on adding water.
- Anhydrous cobalt(II) chloride is blue and turns pink.
- Both changes are standard tests for the presence of water.

Question 31

0620/22 M25 ■ Q31 ■ 1 mark

31 A sample of river water contains a high concentration of nitrates from fertilisers.

Which statements about the river water are correct?

- 1 It has a boiling point of 100°C .
- 2 Its melting point is below 0°C .
- 3 It turns anhydrous cobalt(II) chloride from pink to blue.
- 4 It turns anhydrous copper(II) sulfate from white to blue.

A 1 and 3

B 1 and 4

C 2 and 3

D 2 and 4

Solution 31

Answer: **D**

Why

- Dissolved solutes *raise* the boiling point above 100°C , so statement 1 is wrong.
- They lower the freezing point below 0°C , so statement 2 is right.
- It is still mostly water, so it turns anhydrous copper(II) sulfate blue – statement 3 is right.

Question 32

0620/22 M25 ■ Q32 ■ 1 mark

32 Which statements about the treatment of domestic water supplies are correct?

- 1 The water undergoes sedimentation to remove dissolved solids.
- 2 The water is filtered to remove insoluble solids.
- 3 The water is treated with carbon to improve the taste.
- 4 The water is chlorinated to decrease the pH.

A 1 and 2

B 1 and 4

C 2 and 3

D 3 and 4

Solution 32

Answer: **C**

Why

- Sedimentation lets *suspended* solids settle; it cannot remove dissolved substances – statement 1 is wrong.
- Filtration then takes out the remaining insoluble solids – statement 2 is right.
- Chlorine is added to kill bacteria – statement 3 is right.