Winter Traditions, Science, and Festive Maths for Key Stage 3

Multiple Choice Questions

1. Different cultures observe celebrations around the winter solstice that feature light and special customs. One tradition involves an eight-day observance in Judaism where families light candles in an eight-branched holder known as a hanukkiah, spin a traditional four-sided top called a dreidel, and eat fried foods like latkes.

Which winter festival is being described?

A) Diwali
B) Hogmanay
C) Saint Lucia's Day
D) Hanukkah

2. During Scottish Hogmanay celebrations, households take part in the traditional custom of first-footing after midnight on New Year's Day. The first visitor to cross the threshold typically brings symbolic gifts, each intended to bring a specific form of good fortune to the home for the coming year.

According to this custom, which gift is traditionally brought to symbolise warmth for the household?

A) A lump of coal
B) A piece of shortbread
C) A pinch of salt
D) A silver coin

3. Around the world, celebrations coincide with astronomical milestones in December. In Scandinavia, 13 December is marked by processions where young people wear white gowns and red sashes. The leader wears a wreath of lingonberry twigs fitted with illuminated candles, singing songs to mark the return of light amid dark winter days.

Which winter celebration is characterised by this Scandinavian candle-wreath procession?

A) Saint Lucia's Day
B) Boxing Day
C) Saint Nicholas Day
D) Epiphany

4. A bookshop offers a seasonal sale on hardback books. A boxed set with an original price of £60 is reduced by 35% in the clearance sale.

What is the sale price of the boxed set after the 35% discount is applied?

A) £25
B) £39
C) £45
D) £21

5. A recipe for a festive punch mixes orange juice, cranberry juice, and ginger ale in the ratio 3 : 2 : 1 by volume. A total of 24 litres of punch is made for a school event.

How many litres of cranberry juice are needed?

A) 4 litres
B) 8 litres
C) 16 litres
D) 12 litres

6.

Town	Minimum outdoor temperature (°C)
Aviemore	-7
Braemar	-12
Carlisle	3
Durham	-2

Based on the table, what is the temperature difference between Braemar and Carlisle?

A) 10 °C
B) 9 °C
C) 16 °C
D) 15 °C

7. A school winter concert is planned in three musical sets. Set 1 lasts 42 minutes, followed by an interval of 25 minutes. Set 2 lasts 38 minutes, followed by a short break of 10 minutes, and Set 3 lasts 35 minutes. The concert begins at 18:30.

At what time does the winter concert end?

A) 20:50 B) 20:25 C) 21:10 D) 21:00

8. Earth orbits the Sun with its axis tilted at an angle of roughly 23.5 degrees. In December, the Northern Hemisphere experiences winter, even though Earth is slightly closer to the Sun in January than in July.

What is the primary scientific reason for lower average temperatures during winter in the Northern Hemisphere?

A) The Northern Hemisphere is tilted away from the Sun, so solar rays hit at a shallower angle and spread energy over a larger area
B) The Northern Hemisphere is tilted towards the Sun, but shorter daylight hours prevent the surface from absorbing enough heat
C) Earth's elliptical orbit moves the entire planet much further away from the Sun during the month of December
D) Earth's axial tilt regularly flips direction every six months, which temporarily cuts off direct sunlight to the north

9. Snowflakes form when water vapour in cold clouds crystallises directly into ice. As the water molecules join together, they settle into a repeating lattice pattern governed by how the molecules bond at freezing temperatures.

Which basic shape and symmetry do these ice crystals naturally take as a snowflake grows?

A) A four-sided square pattern
B) A five-sided pentagonal pattern
C) An eight-sided octagonal pattern
D) A six-sided hexagonal pattern

10. In 1843, civil servant Henry Cole introduced the first commercial Christmas card in Britain, featuring an illustration by John Callcott Horsley alongside printed festive greetings.

In which historical era did the tradition of sending commercial Christmas cards begin in Britain?

A) Edwardian era
B) Stuart era
C) Victorian era
D) Georgian era

11. In Victorian London, a sweet-maker named Tom Smith wanted to sell more of his paper-wrapped sweets. Over several years he added a strip that made a loud snap when the package was pulled apart, and later put paper hats, small gifts and mottos inside. Which traditional British festive item was developed through these ideas?

A) The Christmas card
B) The Christmas cracker
C) The Christmas stocking
D) The Christmas wreath

12. Decorating indoor evergreen trees gained widespread popularity across British households after an 1848 illustration was published in the Illustrated London News. The image showed Queen Victoria and her family gathered around an elaborately decorated fir tree at Windsor Castle.

Which royal consort played a key role in popularising this decorated fir tree tradition in Victorian Britain?

A) Prince Leopold
B) Prince George of Denmark
C) Prince Philip
D) Prince Albert

13. The winter solstice in the Northern Hemisphere marks the day with the fewest hours of daylight and the longest night of the year, after which daylight hours begin to increase again. In London, daylight lasts for approximately 7 hours and 50 minutes on the solstice.

Based on astronomical patterns, on which date does the winter solstice typically occur in the Northern Hemisphere?

A) 21 March
B) 21 December
C) 21 September
D) 21 June

14. In Mexico, community celebrations leading up to Christmas feature 'Las Posadas' from 16 to 24 December. During these evenings, neighbours and children reenact a traditional journey by walking in procession from house to house, singing traditional verses and carrying lanterns until they are welcomed inside for food and the breaking of a piñata.

Which journey does the Mexican tradition of Las Posadas reenact?

A) The journey of the shepherds travelling across the hills to the stable
B) The journey of Mary and Joseph seeking shelter before the birth of Jesus
C) The journey of Saint Nicholas delivering gifts to households in Asia Minor
D) The journey of the Three Wise Men travelling from the East to Bethlehem

True/False Questions

15. Because of Earth's axial tilt, when the UK has its shortest day of the year in December, countries in the Southern Hemisphere such as Australia are having their summer season.

☐ True ☐ False

16. Wild penguins and wild polar bears share the same natural habitat in the Arctic.

☐ True ☐ False

17. In the UK, sleet is defined as precipitation that falls as a mixture of rain and partly melted snow.

☐ True ☐ False

18. True or false: The tradition of pulling Christmas crackers began during the Tudor period under King Henry VIII.

☐ True ☐ False

Fill in the Blank Questions

19. The major autumn festival of lights observed by Hindus, Sikhs, and Jains, during which small clay oil lamps called diyas are lit to celebrate the triumph of light over darkness, is _____.

20. A community group packs 120 gingerbread biscuits into small and large gift tins in the ratio 3 : 5. The number of biscuits placed into the large tins is _____.

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★ Answer Key ★

Multiple Choice Questions

1. **D** — Hanukkah
2. **A** — A lump of coal
3. **A** — Saint Lucia's Day
4. **B** — £39
5. **B** — 8 litres
6. **D** — 15 °C
7. **D** — 21:00
8. **A** — Tilted away from the Sun
9. **D** — Six-sided hexagonal pattern
10. **C** — Victorian era
11. **B** — The Christmas cracker
12. **D** — Prince Albert
13. **B** — 21 December
14. **B** — Mary and Joseph seeking shelter

True/False Questions

15. **True**
16. **False**
17. **True**
18. **False**

Fill in the Blank Questions

19. **Diwali**
20. **75**