Worksheet: Pressure, Winds, Storms, and Cyclones

NIOS · Class 8 · Science · 8 questions · 13 marks

Name: _____ Date: _____ Score: _____ / 13

Q1. The SI unit of pressure is *[1 mark]*

A) newton/metre² (N/m²), also called the pascal

B) metre² (m²)

C) millibar (mb)

D) newton (N)

Q2. Two vessels of very different widths are filled with water to the same height. Where is the pressure at the bottom greater? *[1 mark]*

A) It cannot be decided without knowing the weights

B) In the narrower vessel, because the water is more concentrated

C) It is the same in both

D) In the wider vessel, because it holds more water

Q3. A box weighing 300 N rests on the floor. Its base measures 2 m by 3 m. Find the pressure it exerts on the floor. If it is turned onto a face measuring 1 m by 2 m, what is the new pressure? *[2 marks]*

Q4. Why is it safer to keep doors and windows open during a storm with high-speed winds? *[1 mark]*

A) It lets the wind blow the rain out of the house

B) It makes the house heavier so it cannot be lifted

C) It lets the pressure inside fall too, so the difference across the roof is smaller

D) It stops the wind from reaching the roof

Q5. Assertion (A): A rubber sucker will not stick to a rough wall. Reason (R): Air leaks in through the gaps between the sucker's cup and a rough surface. *[1 mark]*

A) A is true but R is false

B) A is false but R is true

C) Both A and R are true, and R is the correct explanation of A

D) Both A and R are true, but R is not the correct explanation of A

Q6. Fig. 6.19 shows pressures falling from 1008 mb at the edge of a cyclone to 994 mb at its centre. Which statement is best supported? *[1 mark]*

A) The pressure at the centre is 14 times lower than at the edge

B) The centre is the lowest-pressure point and the calmest place in the system

C) The centre is the lowest-pressure point and therefore has the strongest winds

D) A 14 mb difference is too small to produce strong winds

Q7. Why does the chapter use ONE sheet of chart paper, folded and then unfolded, in Activity 6.3 rather than two sheets of different sizes? *[3 marks]*

Q8. The chapter says the atmosphere presses on a 15 cm × 15 cm patch with 2250 N — the weight of a 225 kg object. Show that this is consistent with the pressures marked on Fig. 6.19. *[3 marks]*