Terror in the Mountains

A What is incredibly beautiful, yet absolutely terrifying and deadly at the same time? For anyone above the snowline in the mountains, there is little doubt about the answer. Avalanche—the word strikes fear into the heart of any avid skier or climber. For those unfortunate enough to be caught up in one, there is virtually no warning or time to get out of danger and even less chance of being found. The 'destroyer' of the mountains, avalanches can uproot trees, crush whole buildings and bury people metres deep under solidified snow. Around the world, as more and more people head to the mountains in winter, there are hundreds of avalanche fatalities every year.

B A snow avalanche is a sudden and extremely fast-moving 'river' of snow which races down a mountainside (there can also be avalanches of rocks, boulders, mud or sand). There are four main kinds. Loose snow avalanches, or sluffs, form on very steep slopes. These usually have a 'teardrop' shape, starting from a point and widening as they collect more snow on the way down. Slab avalanches, which are responsible for about 90% of avalanche-related deaths, occur when a stiff layer of snow fractures or breaks off and slides downhill at incredible speed. This layer

may be hundreds of metres wide and several metres thick. As it tends to compact and set like concrete once it stops, it is extremely dangerous for anyone buried in the flow. The third type is an isothermal avalanche, which results from heavy rain leading to the snowpack becoming saturated with water. In the fourth type, air mixes in with loose snow as the avalanche slides, creating a powder cloud. These powder snow avalanches can be the largest of all, moving at over 300 kmh, with 10,000,000 or more tonnes of snow. They can flow along a valley floor and even a short distance uphill on the other side.

C Three factors are necessary for an avalanche to form. The first relates to the condition of the snowpack. Temperature, humidity and sudden changes in weather conditions all affect the shape and condition of snow crystals in the snowpack which, in turn, influences the stability of the snowpack. In some cases, weather causes an improvement in avalanche conditions. For example, low temperature variation in the snowpack and consistent below-freezing temperatures enable the crystals to compress tightly. On the other hand, if the snow surface melts and refreezes, this can create an icy or unstable layer.

D The second vital factor is the degree of slope of the mountain. If this is below 25 degrees, there is little danger of an avalanche. Slopes that are steeper than 60 degrees are also unlikely to set off a major avalanche as they ‘sluff’ the snow constantly, in a cascade of loose powdery snow which causes minimal danger or damage. This means that slabs of ice or weaknesses in the snowpack have little chance to develop. Thus the danger zone covers the 25 to 60 degree range of slopes, with most avalanches being slab avalanches that begin on slopes of 35 to 45 degrees.

E Finally, there is the movement or event that triggers the avalanche. In the case of slab avalanches, this can be a natural trigger, such as a sudden weather change, a falling tree or a collapsing ice or snow overhang. However, in most fatal avalanches, it is people who create the trigger by moving through an avalanche-prone area. Snowmobiles are especially dangerous. On the other hand, contrary to common belief, shouting is not a big enough vibration to set off a landslide.

F Anyone moving through snow in the mountains should understand the danger signals and follow some basic rules. Taking an approved avalanche safety course is an essential first step. Skiers and climbers should be up-to-date with local warning systems and check any avalanche forecast hotline or website. They should also be aware of their surroundings, avoid areas that have signs of previous avalanche activity and monitor the weather conditions carefully. Basic equipment should include a rescue beacon with fresh batteries, an inexpensive inclinometer to measure the angle of slopes and an avalanche probe.

G Beautiful but deadly, avalanches kill increasingly numbers of winter sports enthusiasts every year as more and more people enjoy the mountains in winter. As it is easier to avoid an avalanche than to survive one, it is vital for snow enthusiasts to recognize the three basic factors which contribute to avalanches. An awareness of the condition of the snowpack, the angle of the slope and the ways in which an avalanche may be triggered can be the difference between life and death in the mountains.

Questions 1-7

The article has 7 paragraphs.

Choose the correct heading for paragraphs 1-7 from the list of headings below. Write the correct number i-ix after the number of paragraphs in Questions 1-7.

List of Headings

i. Examples of Major Avalanches

ii. Stability of the Snowpack

iii. What Sets off an Avalanche

iv. How to Avoid an Avalanche?

v. An Expert's Comments

vi. Awareness is the key

vii. Steepness of Mountains

viii. Avalanches Peril

ix. An Avalanches Risk Table

x. Types of Avalanche

1. _____Paragraph A
2. _____Paragraph B
3. _____Paragraph C
4. _____Paragraph D
5. _____Paragraph E
6. _____Paragraph F
7. _____Paragraph G

Answer Keys:

1. viii
2. x
3. ii
4. vii
5. iii
6. iv
7. vi