

### Urban climate issues and management 3.2.3.4

Q1	<i>True or False?</i>	
A	Urban areas have lower precipitation levels than the surrounding rural area.	
B	Urban areas are warmer than the surrounding rural area because of building density.	
C	The urban heat island effect has the same impact on temperature across the whole of the urban area.	
D	Streets in urban areas can increase wind speed by causing a funnelling effect in some situations.	
E	Photochemical smog has limited impact on the urban environment.	

Q2	<b>Match the correct term to the correct definition</b>	
A	The increase in speed of a body of air as it moves through a restricted area.	
B	Haze in the atmosphere caused by the action of sunlight on pollutants.	
C	The proportion of an area of land that is built on.	
D	A city region where the air temperature is higher than the surrounding region.	
E	A mixture of solid and liquid droplets suspended in the air.	

Select from: **Urban heat island   Particulate matter   Photochemical smog   Building density   Venturi effect**

Q3	<b>One sentence is incorrect in each of the explanations below. Identify the wrong one.</b>	
A	Precipitation is higher in urban areas than the surrounding rural areas due to the increase in evaporation from dark surfaces, such as tarmac. This leads to cloud formation and precipitation. Winds also cause precipitation in urban areas as they carry clouds from the rural area into the city and precipitation occurs as they rise over high-rise buildings.	
B	The CBD of a city is always warmer than the area on the outskirts. This is due to building density increasing here, trapping heat between buildings, as well as heat output from electrical appliances in factories and office buildings. Cars give out CO <sub>2</sub> but don't directly contribute to heat exchange with the atmosphere.	
C	Photochemical smog is caused when sunlight reacts with pollutants in the atmosphere, creating a layer above the city. The smog is dark and blocks out sunlight from reaching the city. It can be a considerable health hazard.	
D	The urban heat island effect can never be reduced as it is completely caused by building density. Solutions for other climate issues in an urban area are available. Particulate matter in the atmosphere can be reduced by pedestrianising areas and improving public transport.	
E	The venturi effect, whereby in very dense areas of a city, winds can be restricted and this leads to an increase in wind speed, occurs often. Open areas within the city, such as parkland are then always experiencing much stronger gusts of wind during storm conditions than the surrounding rural areas.	

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Q4	<b>Decide which heading the various factors would match with, in regards to urban climate.</b>		
	<b><i>Urban climate causes</i></b>	<b><i>Urban climate issues</i></b>	<b><i>Urban climate management</i></b>
	Pedestrianising areas	Dark building materials	Public transport increase
	High building density	Narrow streets and walkways	Urban planning
	Rural-urban migration	Increase in asthma	Flash flooding

Q5	<b>Think about the implications of management strategies to influence urban climates</b>
A	What are some of the future negative implications?
B	What are some of the future positive implications?