

S211 SELF-STUDY TEST ANSWER KEY

1. The four weather elements that directly influence fire behaviour are:

_____ **Relative Humidity** __, _____ **Wind** _____ **speed** ____ and ____ **direction** __,
_ **Temperature** __, _ **Precipitation** _

2. Wind tends to: (Select all that apply)

___ blow from hot to cold

_ **X** _ blow from high pressure to low pressure

_ **X** _ blow upslope during the day

___ veer at night and back during the day

_ **X** _ veer with height

3. Extended periods of precipitation or moderate to heavy precipitation will affect fire fighter safety by:

_____ **Lower temperatures leading to hypothermia** _____

_____ **Poor footing and decreased grip** _____

4. A microburst is an intense downdraft from a _____ **Cumulonimbus** _____ cloud and may have windspeeds of _____ **100** _____ to over _____ **200** _____ km/h.

5. Define “virga”

_____ **Precipitation falling from cloud but not reaching the ground, it evaporates as it falls.** _____

6. You see a cumulus type cloud developing over a fire in an otherwise clear sky. This cloud is caused by _____ **Extreme heat of the fire** _____

and _____ **Very unstable air** _____

7. A sling psychrometer has two thermometers called the _____ **Wet** _____ _____ **Bulb** _____ and the _____ **Dry** _____ _____ **Bulb** _____. Measurements taken with these thermometers are used to calculate the _____ **Relative** _____ _____ **Humidity** _____

8. What is the minimum information you need to give a forecaster to write a spot forecast?

___Location in lat and long___ and ___Elevation___

Other valuable information includes

___Aspect___, ___Slope___, ___Valley orientation___ and

___Latest weather readings from the site or representative site___

9. A thunderstorm warning is issued when the forecaster sees the potential for severe thunderstorms. True or false. (An advisory would be issued for the potential for severe thunderstorms.)

10. Under normal circumstances, if the temperature at ground level is 18° C what temperature would you expect 300 metres above ground? ___15° C___

11. An inversion is when the atmospheric temperature increases/decreases with altitude. (Circle the correct answer.)

12. Wind blows clockwise/counter clockwise around a high pressure system. (Circle the correct answer.)

13. Would you associate sunny skies and light winds with a low pressure system? Yes or No.

14. Four characteristics of a cold front are:

___45-90 km wide___

___Cloudy and windy with showers___

___Abrupt wind shift as front passes___

___Temperature and RH decrease as front passes___

15. What does TROWAL stand for? ___TRough Of Warm Air aLoft___

16. Large rainfall amounts are likely to occur in areas of upslope. True or False.

17. Air warms and dries as it descends into a subsidence zone. True or False.

18. Why would you be more careful on the fireline when a nocturnal inversion breaks? ___Fire Behaviour becomes more active and erratic___

19. Land heats faster during the day than water, causing a sea/land breeze. (Circle the correct answer.)

20. What landscape feature would cause a downslope flow both day and night?

__Glacier__

21. If the forecaster tells you that a band of subtropical moisture is moving into southern BC, what weather phenomena would you be watching for? __Dry lightning

storms__

22. How much would you expect the wind to shift during a frontal passage in an open area?

a. 180°

b. 45° - 180°

c. 45° - 90°

d. 0°

23. Cloud types and cloud changes may signal

__Approaching frontal systems__

__Troughs__

__Cold Lows__

__Development of Thunderstorms__

24. Three weather features that may bring increasing relative humidities are:

__Frontal systems__

__cold lows__

__troughs of low pressure__