WAEC GCE EXPO QESTIONS 2019/2020 PHYSIC

SECTION A

1. A thermometer with an arbitrary scale, C of equivalent divisions registers -30℃ at the ice point and 90℃ at the steam point. Calculate the Celsius temperature corresponding to 60℃.A. 25℃

B. 50℃

C. 66.7℃

D. 75℃2. Water is not suitable for use as a thermometric liquid because

I. It wet glass.
II. It needs to be coloured
III. It expands abnormally
IV. It has low density

A. I only
B. I and II only
C. I, II, and III only
D. III and IV only

3. A thermometer has its stem marked in millimetre instead of degree Celsius. The lower fixed point is 30mm and the upper fixed point is 180mm. calculate the temperature in degree Celsius when the thermometer reads 45mm.

A. 67.5℃

B. 30℃

C. 25℃

D. 15℃

E. 10℃

4. Which of the following cannot be used to measure the temperature of a substance?

A. Variation of pressure with temperature
B. Expansion of a liquid
C. Change of resistance of a conductor
D. Thermoelectric effect
E. Change of colour with temperature

5. Which of the following thermometer can be used to measure a range of temperature from -50℃-80℃?

I. A clinical thermometer.
II. A mercury thermometer
III. An alcohol thermometer

A. I only
B. II only
C. III only
D. I and II only
E. II and III only.

6. Which of the following thermometer responds best to changing temperature?

A. Mercury thermometer.
B. Alcohol thermometer
C. Resistance thermometer
D. Thermoelectric thermometer
E. Gas thermometer

7. The quantity of heat required to change the temperature of a unit mass of a substance by 1℃ is called?

A. Heat capacity of fusion
B. Specific heat capacity of vaporization
C. Specific latent heat
D. Specific heat capacity

8. Why does melting ice cool an orange drink far better than the same mass of ice-cold water?

A. Because ice releases latent heat during melting.
B. Because the melting ice absorbs latent heat during melting
C. Because the ice is at lower temperature than the ice-cold water
D. Because melting ice has lower specific heat than ice cold water
E. Because the drink mixes better with ice than with ice cold water

9. When drops of methylated spirit are applied to our body, it normally feels cool because the methylated spirit

A. Easily evaporates
B. Extracts its latent heat of evaporation from the body
C. Gives away its latent heat of evaporation to the body
D. Evaporates without boiling

10. The S.V.P of a liquid depends on its

A. Density
B. Temperature
C. Volume
D. Pressure

11. A liquid boiling point is 84℃ is taken down to a deep well and its boiling point is measured. We expect the boiling point at the bottom of the well

A. Is still 84℃
B. Is less than 84℃
C. Is more than 84℃
D. Will depend on the temperature of the well

12. A tap supplies water at 26℃. While another supplies water at 26℃. If a man wishes to bath with water at 40℃ the ratio of the mass of hot water to that of cold water is

A. 1:3
B. 3:1
C. 3:7
D. 7:3

13. A heater marked 60W evaporates 6 x 10-3kg of boiling water in 60 seconds. what is the specific latent heat of vaporization of water?

A. 6 x 105
B. 6 x106
C. 3 x 10-5
D. 6 x 10-5
E. 3 x 105

14. The specific latent heat of fusion of a substance is the quality of heat required to

A. Heat unit mass of the substance through 1℃
B. Change the state of unit mass of the substance at its melting point.
C. Melt all the substance present at melting point.
D. Change the state of unit mass of substance at its boiling point.

15. When two objects P and Q are supplied with the same quantity of heat, the temperature change in P was observed to be twice that of Q. the mass of P is half that of Q. the ratio of the specific heat capacity of P to Q is

A. 1:4
B. 4:1
C. 1:1
D. 2:1

16. When an athlete perspires after running

A. Evaporation occurs and helps to cool the body
B. Convection cools the body
C. The body absorbs cold from the surrounding air.
D. Heat is conducted away from the body

17. A mass of gas occupies 20cm3 at 5℃ and 70mmHg. What is its volume at 30℃ and 800mmHg pressure?

A. 41.4cm3
B. 20.7cm3
C. 50cm3
D. 0.4cm3
E. 25cm3

18. A fixed mass of gas of volume 600cm3 at a temperature of 27℃ is cooled at constant pressure to a temperature of 0℃. What is the change in volume?

A. 54cm3
B. 273cm3
C. 300cm3
D. 546cm3
E. 600cm3

19. A given mass of gas has a pressure of 70N/m2 at a temperature of 7℃. If the temperature is raised to 20℃ with the volume remaining constant, what is the new pressure

A. 73.25N/m2
B. 73.25atm
C. 73.25mmHg
D. 73.25bar

20. The equation PxVyTz = constant is Boyle's law if

A. x = 0, y = 0, z = 1
B. x = 1, y = 0, z = 0
C. x = 1, y = 1, z = 0
D. x = 1, y = 1, z = 1

21. The equation PxVyTz = constant is Gay-Lussac's law if

A. x = 1, y = 0, z = -1
B. x = 1, y = 0, z = 1
C. x = 0, y = 0, z = 1
D. x = 1, y = 0, z = 1

22. The equation PxVyTz = constant is General gas law if

A. x = 1, y = 1, z = -1
B. x = 1, y = 1, z = 1
C. x = 1, y = 0, z = -1
D. x = 1, y = 1, z = 0

23. The equation PxVyTz = constant is Charles's law if

A. x = 0, y = 1, z = -1
B. x = 0, y = 1, z = 1
C. x = 2, y = 3, z = 4
D. x = -1, y = 0, z = 1

24. A ball is released from a height above the ground. Find its velocity after 5 seconds. Take g = 10m/s2.

A. 10m/s
B. 15m/s
C. 20m/s
D. 50m/s

25. A cricket ball is thrown vertically upwards with an initial velocity of 40m/s. find the velocity after 3 seconds.

A. 10m/s

B. 50m/s
C. 30m/s
D. 40m/s

SECTION B

INSTRUCTION: Answer any three questions from this section

Question one

a. Define heat energy.
b. State three desirable properties of a thermometric liquid.
c. List four advantages and four disadvantages of mercury and alcohol as thermometric liquids.
d. Why is water considered as an unstable liquid for a thermometer?
e. Distinguish between temperature and heat. Also, state the units in which they are measured.

Question two

a. State two physical properties used for measuring temperature.
b. What do you understand by upper fixed point and lower fixed point?
c. Differentiate between evaporation and boiling.
d. Define dew point. Also, state the relationship between relative humidity and S.V.P at dew point.
e. What does the statement “the specific latent heat of steam is 2.26 x 10^6J/kg”?

Question three

a. State Boyle’s law
b. State Charles’s law
c. Calculate the final centigrade temperature required to change 20 litres of gas at 120℃ and 1 atmosphere to 25 litres at 2 atmospheres.
d. What is meant by S.T.P? a gas occupies 8 litres at 23℃ and 70cmHg. What is its volume at S.T.P?

Question four

a. What is meant by absolute zero of temperature?
b. A fixed mass of gas occupies a volume of 1000cm3 at 0℃. If it is heated at constant pressure to 100℃. Calculate its new volume.
c. A closed in-expansible vessel contains air saturated with water vapour at 77℃. The total pressure in the vessel is 1007mmHg. Calculate the new pressure if the temperature is reduced to 27℃.

Question five

a. State the general gas law and its equation.
b. State and explain the kinetic molecular theory of gas.