



10/05/2024
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x 23

PHYSICS	TIME ALLOWED : 2 H
FORM 4	PAPER CONTENT: WAVES AND THERMODYNAMICS

SECTION A: MULTIPLE CHOICE QUESTIONS MCQs (30 Marks)

Instructions: Answer ALL questions neatly in the table by drawing a horizontal line.

1) The amount of heat needed to change the state of a substance without a change in temperature is called:

- [A]. Heat capacity
- [B]. Specific heat capacity
- [C]. Latent heat
- [D]. Specific latent heat

2) Latent heat of vaporization of water is used to

- [A]. raise the temperature of the water
- [B]. increase the average speed of the water molecules
- [C]. raise the temperature of the air near the water
- [D]. completely break the bonds between the water molecules.

3) When water at 100 degrees when heated turns to vapour

- [A]. the mass of the water increases
- [B]. the kinetic energy of its molecules remains the same
- [C]. the potential energy of its molecules decreases
- [D]. the density of the water increases

4) How much energy in joules does the heater supply during the first ten seconds?

- [A]. 50
- [B]. 250
- [C]. 50,000
- [D]. 250,000

5) When methylated spirit is poured on the skin, it has a cooling effects because

- [A]. it evaporates

[B]. it extract its latent heat of vaporization from the body

[C]. it gives away its latent heat of vaporization to the body.

[D]. it evaporates without boiling.

6) When one end of an iron is held in the hand and the other end is inserted into a flame and left there for a few minutes, heat energy soon reaches the hand by:

- [A]. convection
- [B]. radiation
- [C]. conduction
- [D]. convection and radiation

7) Heat from the sun reaches the earth by the method of

- [A]. convection only
- [B]. conduction only
- [C]. conduction, convection and radiation
- [D]. radiation only

8) Heat can travel through a vacuum by

- [A]. conduction, convection and radiation
- [B]. radiation only
- [C]. convection only
- [D]. conduction only

9) Which of the following surfaces absorb heat first?

- [A]. dull black
- [B]. shiny black
- [C]. shiny white
- [D]. dull white

10) Solar panels used to generate electricity are painted black to

- [A]. absorb maximum energy from the sun
 - [B]. reflect maximum energy from the sun
 - [C]. emit maximum energy from the sun
 - [D]. radiate maximum energy from the panel.
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11) A bimetallic strip is used in temperature control devices because the two metals used in a bimetallic strip

- [A]. are good conductors of heat
 - [B]. expand unequally when heated
 - [C]. conduct heat at different rates
 - [D]. can bend easily
-

12). The SI units of latent heat is

- [A]. J
 - [B]. J/kg/k
 - [C]. J/K
 - [D]. J/kg
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13) The specific latent heat of vaporization of a substance is greater than its specific heat capacity because

- [A]. More bonds are broken and work is done against the atmosphere.
 - [B]. Little or no heat is lost in the process of latent heat
 - [C]. more mass is heated in the process of latent heat
 - [D]. temperature change more in the process of latent heat.
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14) Good absorbers of heat are also good

- [A]. conductors of heat
 - [B]. absorbers of electricity
 - [C]. insulators of heat
 - [D]. emitters of heat
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15) Which of the following is not an E.M wave?

- [A] Sound

[B] Radio wave

[C] infra-red

[D] waves produced by vibrating string

16) Heat travels from the sun to earth by the method of

- [A] Conduction
 - [B] Radiation
 - [C] Induction
 - [D] Friction
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17) The fundamental frequency of a sound wave is given by 7GHz. The first overtone in GHz will be

- [A] 7
 - [B] 14
 - [C] 21
 - [D] 28
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18) Sound is

- [A] Electromagnetic wave
 - [B] Transverse wave
 - [C] Longitudinal wave
 - [D] Both transverse and longitudinal wave
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19) Birds can perch safely on high tension electric cables without being electrocuted because:

- [A] birds withstand high potential difference
 - [B] the legs of birds are well insulated
 - [C] very little current flows in high tension cables
 - [D] very little current flows through the body of the birds.
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20) An example of a good electrical and thermal conductor

- [A] glass
 - [B] rubber
 - [C] wood
 - [D] iron
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