

Gondwana University, Gadchiroli.

Practical exam sem-III (Winter-2020)

Shivaji Mahavidyalaya, Gadchiroli.

Subject: Physics

Time: 6 hrs

Marks: 30

Date: / / 2021

Name of Student:

1) Heat capacity has units as

- (a) J/kg.K (b) J/mol.K (c) J.ohm/sec.K² (d) W/m.k

2) With increase in temperature, thermal conductivity of a metal

- (a) Increases (b) Decreases (c) Either (d) All, depending on metal.

3) Units for thermal conductivity

- (a) J/kg.K (b) J/mol.K (c) J.ohm/sec.K² (d) W/m.K

4) The value of Stefan's constant is

- (a) $5.996 \times 10^{-8} \text{ w m}^{-2} \text{ k}^{-1}$ (b) $4.3219 \times 10^{-8} \text{ w m}^{-2} \text{ k}^{-1}$
(c) $5.6696 \times 10^8 \text{ w m}^{-2} \text{ k}^{-1}$ (d) $5.6696 \times 10^7 \text{ w m}^{-2}$

5) Lee's method for bad conductors a steady current passed through

- (a) heater coil (b) thermo couples (c) thin disk (d) copper plates

6) Searle's method determined by

- (a) conductivity (b) thermal conductivity
(c) co-efficient of thermal conductivity (d) temperature

7).....has the highest value of thermal conductivity.

- a) Copper (b) Aluminium (c) Brass (d) Steel

8) Mechanical equivalent is associate with

- (a) Newton (b) Kelvin (c) Joule (d) Boltzmann

9) The mechanical equivalent of heat is.....

- (a) has the same dimension as heat (b) has the same dimension as energy
(c) has the same dimension as work (d) dimensionless

10) The energy emitted by a black surface should not vary accordance with.....

- a) Wavelength b) Temperature c) Surface characteristics d) Time

11) The Planck's constant h has the dimensions equal to

- a) ML^2T^{-1} b) MLT^{-1} c) MLT^{-2} d) MLT

12) Planck's law is given by.....

- a) $(E)_b = 2 \pi c^2 h (\text{Wavelength})^{-5} / [c h/k (\text{Wavelength}) T]^2$
b) $(E)_b = \pi c^2 h [\text{exponential } [c h/k (\text{Wavelength}) T]^3$
c) $(E)_b = 2 \pi c^2 h (\text{Wavelength})^{-5} / \text{exponential } [c h/k (\text{Wavelength}) T]^1$
d) $(E)_b = 2 c^2 h (\text{Wavelength}) / \text{exponential } [c h/k (\text{Wavelength}) T]^6$

13) The Stefan-Boltzmann constant has units of

- a) $\text{kcal/m}^2 \text{ hr K}^4$ b) kcal/m hr K^4 c) kcal/hr K^4 d) $\text{kcal/m}^2 \text{ K}^4$

14) The Stefan-Boltzmann law of thermal radiation is applicable for

- a) white body b) gray body c) black body d) all the bodies

15) The Stefan-Boltzmann constant depends on the

- a) Medium b) Temperature c) Surface d) None of these

16) Stefan Boltzmann law is applicable for heat transfer by

- a) conduction b) convection
c) radiation d) conduction and radiation combined

17) If two events (both with probability greater than 0) are mutually exclusive, then:

- a) They also must be independent b) They also could be independent
c) They cannot be independent. d) They cannot be complements.

18) What happens to the half-life of a radioactive substance as it decays?

- a) It remains constant b) It increases
c) It decreases. d) It could do any of these.

19) A Geiger-Muller tube is a.....

- (a) gas ionization detector (b) cloud chamber
(c) fluorescence detector (d) spectrophotometer

20) Which type of radiation is the least penetrating?

- (a) alpha (b) beta (c) gamma (d) x-ray