

1. A Kelvin thermometer and a Fahrenheit thermometer both give the same reading for a certain sample. What would be the corresponding reading in a Celsius thermometer

301

2. In metastable state electrons reside

10-3s

The metastable state is the state which lies between the ground state and excited state. The atom in the ground state absorbs some energy and goes to the excited state. From an excited state, it loses some energy and comes to a metastable state. The lifetime of the metastable state is 10-3s.

3. When we accelerate the charge which type of waves are produced

Electromagnetic waves

4. The primary of a 3:1 step-up transformer is connected to a source and the secondary is connected to a resistor R. The power dissipated by R in this situation is P. If R is connected directly to the source it will dissipate a power of?

p/9

5. In general, the light emitted from a source, such as a flame, will be

Un-polarized

6. The wavelength of red light is 700 nanometer its frequency is

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4.29 *10¹⁴ hertz

7. Coherent light means

. Coherent means that both coherent waves should have a fixed phase relative to each other

8. An inductor may store energy in its

Magnetic field

9. Virtual image is

From which light rays diverge but do not pass through

10. When you stand in front of a plane mirror, your image is

Virtual, erect, and the same size as you

11. The resolving power of telescope can be increased by

Increasing the lens diameter

12. two sources of light are said to be coherent, when they give light waves of same

Wavelength and constant phase difference.

13. the AC circuit in which current and voltage are in phase the power factor is

1

14. work done on a charged particle moving in uniform magnetic field is

Zero

15. The total energy in an LC circuit is 5.0×10^{-6} J. If $L = 25$ mH the maximum current is:

20mA

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16. A laser in a compact disc player generates light that has a wavelength of 780 nm in air. (i) Find the speed of this light once it enters the plastic of a compact disc ($n = 1.55$)

1.94×10^8 m/s

17. which method of heat transfer take place in vacuum

Radiation

18. An erect object is in front of a convex mirror a distance greater than the focal length. The image is:

Virtual, erect, and smaller than the object

19. In constructing a thermometer it is necessary to use a substance that

Undergoes some change when heated or cooled.

20. A generator supplies 100V to a transformer's primary coil, which has 50 turns. If the secondary coil has 500 turns, what is the secondary voltage?

$$V_s = (N_s/N_p)V_p = (500/50)100V = 1000V$$

21. If a charged particle is projected perpendicular to a uniform magnetic field, then the particle revolves in a

Circular path

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22. Electro magnetic upper limit for the frequency of electromagnetic wave is

Electromagnetic spectrum has no theoretical limit

23. the specific heat of a substance is

The amount of heat energy per unit mass to raise the temperature of the substance by 1 °C

24. Which of the following types of waves travels at the greatest speed through the vacuum?

None of the above; all these waves would travel at the same speed

25. Heat has the same units as:

Work

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26. Constant-volume gas thermometers using different gases all indicate nearly the same temperature when in contact with the same object if

The particle concentrations are all extremely small

27. a light entering into glass prism from air does not give change in its

Frequency remains same when light travels from air to glass.

28. Tesla is the unit of

Magnetic flux density

29. thermometer indicates 98.6 Celsius if maybe

It is in a hot cup of tea

30. unit of Stefan Boltzmann constant r

$(W \cdot m^{-2} \cdot K^{-4})$.

31. If two objects are in thermal equilibrium with each other:

They cannot be at different temperatures

32. Kirchoff's second rule is the manifestation of the law of conservation of

Energy

33. the waveform of alternating voltage is a

Sine wave

34. the strength of a lens is measured in

Diopter

35. force on a charged particle is zero when projected at angle with the magnetic field

0 or 180 not sure

36. In a photoelectric effect experiment at a frequency above cut off, the stopping potential is proportional to:

the energy of the most energetic electron after it is ejected

37. $2d\sin\theta = n\lambda$

Bragg equation

38. the rest mass of photon is

Zero

39. polarization experiments provide evidence that light is

A transverse waves.

40. electric energy is measured

Watt

41. when light passes through the prism it splits into how many colors

7

42. which of the following is the difference between sound and light waves

Light waves are transverse while sound waves are longitudinal

43. When two gases separated by a diathermal wall are in thermal equilibrium with each other only their temperatures must be the same During a slow adiabatic expansion of a gas:

no energy enters or leaves as heat

44. the appearance of color in the thin film is due to

Interference

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45. capacitive resistance X_c is

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$1/2\pi fC$

46. following are the ways by which light can interact with matter except

Interference