

CG PVPT 2022 Question Paper

Q.1 A moving charge produces

- A. Electric field only
- B. Magnetic field only
- C. Both of them
- D. None of them

Q.2 Unit of magnetic flux is

- A. Debye
- B. Henry
- C. Weber
- D. Rutherford

Q.3 A body is falling freely under the action of gravity alone in a vacuum. Which of the following quantities remain constant during the fall?

- A. Kinetic energy
- B. Potential energy
- C. Total mechanical energy
- D. Total linear momentum

Q.4 Two slits are made one millimeter apart and the screen is placed one meter away. What is the fringe separation when blue-green light of wavelength 500 nm is used?

- A. 5 cm
- B. 1 cm
- C. 5 mm
- D. 0.5 mm

Q.5 Which of the following particles will describe the smallest circle when projected with the same velocity perpendicular to a magnetic field?

- A. Electron
- B. Proton
- C. He^+
- D. Li^+

Q.6 The net external torque on a system of particles about an axis is zero. Which of the following are compatible with it?

- A. The forces may be acting radially from a point on the axis
- B. The forces may be acting parallel to the axis of rotation
- C. The torque caused by some forces may be equal and opposite to that caused by other forces
- D. All of the above are true

Q.7 The bluish colour of water in the deep sea is due to

- A. the presence of algae and other plants found in water
- B. reflection of the sky in the water
- C. scattering of light
- D. absorption of light by the sea

Q.8 A small telescope has an objective lens of focal length 144 cm and an eye piece of focal length 6.0 cm. What is the separation between the objective and the eyepiece?

- A. 24 mm
- B. 24 cm
- C. 150 mm
- D. 150 cm

Q.9 A particle is acted simultaneously by mutually perpendicular simple harmonic motion $x = a \cos t$ and $y = a \sin t$. The trajectory of motion of the particle will be

- A. an ellipse
- B. a parabola
- C. a circle
- D. a straight line

Q.10 In a permanent magnet at room temperature

- A. the magnetic moment of each molecule is zero
- B. the individual molecules have nonzero magnetic moments which are all perfectly aligned
- C. domains are partially aligned
- D. domains are all perfectly aligned

Q.11 With the propagation of longitudinal waves through a medium, the quantity transmitted is

- A. Matter
- B. Energy
- C. Energy and Matter
- D. Energy, Matter, and Momentum

Q.12 Speed of sound wave in air

- A. is independent of temperature
- B. increases with pressure
- C. increases with an increase in humidity
- D. decreases with an increase in humidity

Q.13 Which of the following statement is correct?

- A. A person with myopia can see distant objects clearly
- B. A person with hypermetropia can see nearby objects clearly
- C. A person with myopia can see nearby objects clearly
- D. A person with hypermetropia cannot see distant objects clearly

Q.14 Which of the following is unit of time?

- A. Year
- B. Light Year
- C. Parsec
- D. All of the above

Q.15 The radius of curvature of the curved surface of a plano-convex lens is 20cm. If the refractive index of the material of the lens be 1.5 it will

- A. act as a convex lens only for the objects that lie on its curved side
- B. act as a concave lens for the objects that lie on its curved side
- C. act as a convex lens irrespective of the side on which the object lies
- D. act as a concave lens irrespective of side on which the object lies