

## Physics - FSC Part 1 Physics English Medium Full Book Short Question Test

Q1. State the principal of superposition.

**Ans 1:**

Q2. Write kelvin statement of the second law of thermodynamics.

**Ans 1:** It is impossible to devise a process which may convert heat, extracted from a single reservoir, entirely into work without leaving any change in the working system.

Q3. What are supplementary units? Write their names.

**Ans 1:** The General Conference on Weights and Measure has not yet classified certain unit of SI under either base or derived units. These SI units are called supplementary units. Radian and Steradian are supplementary units.

Q4. What are Artificial Satellites?

**Ans 1:** Artificial Satellites are the man-made objects that orbit around the Earth.

Q5. What is the usual way to obtain plan wavefront from a point source?

**Ans 1:** A usual way to obtain a plane wavefront is to place a point source of light at the focus of a convex lens. The rays coming out of the lens will constitute plane waves.

Q6. Define Distance and displacement ?

**Ans 1: Distance:** The length of actual path traversed by a body in motion is known as distance. The actual path may be straight or curved. The distance is a scalar quantity. Its S.I units is meter.

**Displacement:** The shortest distance between is know as displacement.

A body reaches from point 'O' to 'C' through 'A' and 'B'. Thus the path 'OABC' represents the actual path traversed by the body during its motion. So it is called distance. While 'oc' represents the shortest distance between the initial point 'o' and final point 'c' It S.I unit is meter

Q7. How Convex Lens act as magnifying glass?

**Ans 1:** A convex lens of shorter focal length can be used as a magnifier when the object is placed very close to it i.e. When it lies between the lens and its focus. The image then formed is virtual, erect and magnified.

Q8. Two vectors have unequal magnitude. Can their components be equal in magnitude?

**Ans 1:** No, the components of two vectors cannot be equal in magnitude if the two vector have unequal magnitudes.

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Q9. Explain " Rounding off numbers ?

**Ans 1:** The quantities in a measurement are always rounded off to certain level of accuracy. The following rules must be observed while rounding off a number.

1. If the dropping digits is less than "5" then the last retained digit is kept as it is For example 863.73 is rounded to 863.7
  2. If the dropping digits is greater than '5' then the last retained digits is increased by '1' for example 9.66 is rounded to 9.7
  3. If the dropping digits is '5' and the last retained digit is even then it will be remain unaffected. For example 66.45 is rounded to 66.4
  4. If the dropping is '5' and the last retained digit is add, then it will be increases by '1' for example 76.35 is rounded to 76.4
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Q10. Define Measurement, unit and Magnitude?

**Ans 1: Measurement:** The comparison of some thing with some standard is known as measurement.

**Unit:** The standard with which thing are compared is known as unit.

**Magnitude:** A number with proper unit is known as magnitude.

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Q11. Write any two properties of inertial frame of reference.

**Ans 1:**

1. A non-accelerated frame of reference is an inertial frame of reference.
  2. Newton's 1st law of motion holds good in an inertial frame of reference.
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Q12. What is sharpness of resonance?

**Ans 1:** The amplitude as well as its sharpness both depend upon the damping. Smaller the damping, greater will be the amplitude and more sharp will be the resonance.

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Q13. Give the list of two substance which shows optical rotation when they are in solution.

**Ans 1:** Sugar and tartaric acid show optical rotation when they are in solution.

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Q14. Define free fall motion? Also define the acceleration due to gravity ?

**Ans 1:** If we drop an object from certain height height 'h' and ignore the air resistance then such motion of the body is known as free fall motion. the acceleration of free fall body is known as acceleration due to gravity.

It is represented by 'g' Its value varies with altitude and depth. On earth surface or near earth surface its value is  $9.8 \text{ m/sec}^2$

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Q15. Define basic units.

**Ans 1:** The units associated with the base quantities are called base units. These are meter, kilogram, second, ampere, kelvin, candela, mole.

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Q16. State the direction of the following vectors in simple situation:  
A) Angular Momentum B) Angular Velocity

**Ans 1:** The direction of angular momentum and angular velocity can be determined by right hand rule; "Grasp the axis of rotation in right hand with the fingers curling in the direction of rotation, then the erect thumb will give the direction of angular velocity and angular momentum."

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Q17. Give any two applications of Doppler Effect.

**Ans 1:** Doppler effect is used:

1. In radar systems, the Doppler effect is used to determine the elevation and speed of aero plane.
  2. Astronomers use the Doppler Effect to calculate the speed of distant stars and galaxies.
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Q18. Why can a vector not have a component greater than the vectors magnitude?

**Ans 1:** The magnitude of the components of a vector can not be greater than the vectors magnitude because component is always a part of the resultant vector. This relation show that if any two components of a vector are zero then the magnitude of the third components may be equal to the vectors magnitude but it can never be greater.

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Q19. As the result of distant explosion an observer senses a ground tremor and then hears the explosions. Explain the time difference.

**Ans 1:** The waves produced by the explosion reach the observer quickly through the ground as compared to the sound waves reaching through the air. This is due to the reason that sound travels faster in solid than gases.

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Q20. Name some non- conventional energy sources.

**Ans 1:** Some of the non-conventional energy sources are:

- Energy from tides
  - Energy from waves
  - Energy from biomass
  - Energy from waste products
  - Solar Energy
  - Geothermal Energy
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