

## Physics ICS Part 1 Chapter 11 Online Test

Sr	Questions	Answers Choice
1	The theory of relativity was proposed in	<p>A. &lt;p&gt;1920&lt;/p&gt;            B. &lt;p&gt;1905&lt;/p&gt;            C. &lt;p&gt;1915&lt;/p&gt;            D. &lt;p&gt;1895&lt;/p&gt;</p>
2	Which one of the following physical quantities is independent of relativistic speed.	<p>A. &lt;p&gt;Charge&lt;/p&gt;            B. &lt;p&gt;Length&lt;/p&gt;            C. &lt;p&gt;Mass&lt;/p&gt;            D. &lt;p&gt;Time&lt;/p&gt;</p>
3	If a space craft of rest length ' $l_0$ ' is moving with a speed equal to speed of light, then its relativistic length $l$ , will be	<p>A. &lt;p&gt;<math>l = l_0</math>&lt;/p&gt;            B. &lt;p&gt;<math>l = l_0/2</math>&lt;/p&gt;            C. &lt;p&gt;<math>l = 0</math>&lt;/p&gt;            D. &lt;p&gt;All of these&lt;/p&gt;</p>
4	The energy 'E' equivalent to mass given by	<p>A. &lt;p&gt;<math>E = mc^2</math>&lt;/p&gt;            B. &lt;p&gt;<math>E = mc^2</math>&lt;/p&gt;            C. &lt;p&gt;<math>E = mc</math>&lt;/p&gt;            D. &lt;p&gt;<math>E = mc^2</math>&lt;/p&gt;</p>
5	If an observer is moving in the same direction as a sound wave, the velocity of the wave seems to be	<p>A. &lt;p&gt;Less&lt;/p&gt;            B. &lt;p&gt;More&lt;/p&gt;            C. &lt;p&gt;Constant&lt;/p&gt;            D. &lt;p&gt;Sum of the two velocities&lt;/p&gt;</p>
6	The length of rod at rest as measured by an observer moving parallel to it with relativistic speed is given by	<p>A. &lt;p&gt;<math>l = l_0 [1 - v^2/c^2]</math>&lt;/p&gt;            B. &lt;p&gt;<math>l = l_0 \sqrt{1 - v^2/c^2}</math>&lt;/p&gt;            C. &lt;p&gt;<math>l = l_0 / \sqrt{1 - v^2/c^2}</math>&lt;/p&gt;            D. &lt;p&gt;<math>l = l_0 \sqrt{1 - v^2/c^2}</math>&lt;/p&gt;</p>
7	Relativistic velocity is of the order of.	<p>A. &lt;p&gt;1/15 of the velocity of light&lt;/p&gt;            B. &lt;p&gt;1/20 of the velocity of light&lt;/p&gt;            C. &lt;p&gt;1/10 of the velocity of light&lt;/p&gt;            D. &lt;p&gt;1/25 of the velocity of light&lt;/p&gt;</p>
8	A non-inertial frame of reference.	<p>A. &lt;p&gt;Moves with some acceleration&lt;/p&gt;            B. &lt;p&gt;Is always rest on earth&lt;/p&gt;            C. &lt;p&gt;Moves with uniform velocity&lt;/p&gt;            D. &lt;p&gt;All of the above&lt;/p&gt;</p>
9	The speed of beam light of a car while moving with high speed as compared to its rest position is	<p>A. &lt;p&gt;Greater&lt;/p&gt;            B. &lt;p&gt;Less&lt;/p&gt;            C. &lt;p&gt;Same&lt;/p&gt;            D. &lt;p&gt;Zero&lt;/p&gt;</p>
10	Relativistic mechanics yields results different from classical mechanics for objects moving with.	<p>A. &lt;p&gt;Low velocity&lt;/p&gt;            B. &lt;p&gt;Velocity equal to that of sound waves&lt;/p&gt;            C. &lt;p&gt;Velocity greater than sound waves&lt;/p&gt;            D. &lt;p&gt;Velocity approaching that of light&lt;/p&gt;</p>
11	A rod at rest appears to an observer just a mere point when he moves across it as speed.	<p>A. &lt;p&gt;Equal to the speed of light&lt;/p&gt;            B. &lt;p&gt;Double the speed of light&lt;/p&gt;            C. &lt;p&gt;Three-fourth the speed of light&lt;/p&gt;            D. &lt;p&gt;None of the above&lt;/p&gt;</p>
12	A photon is particle of light. What is its mass when it moves with 0.9 C?	<p>A. &lt;p&gt;<math>9.1 \times 10^{-31}</math> kg&lt;/p&gt;            B. &lt;p&gt;<math>1.67 \times 10^{-27}</math> kg&lt;/p&gt;            C. &lt;p&gt;<math>1.67 \times 10^{-27}</math> kg&lt;/p&gt;            D. &lt;p&gt;Zero&lt;/p&gt;</p>
13	The mass of an object will be doubled at the speed.	<p>A. &lt;p&gt;<math>2.6 \times 10^7</math> m/s&lt;/p&gt;            B. &lt;p&gt;<math>1.6 \times 10^8</math> m/s&lt;/p&gt;            C. &lt;p&gt;<math>2.6 \times 10^8</math> m/s&lt;/p&gt;            D. &lt;p&gt;<math>1.6 \times 10^7</math> m/s&lt;/p&gt;</p>

U.  $\langle p \rangle$ None of these

14 If a material object moves with the speed of light 'c' its mass becomes

- A.  $\langle p \rangle$ Equal to its rest mass
- B.  $\langle p \rangle$ Infinite
- C.  $\langle p \rangle$ Four times of its rest mass
- D.  $\langle p \rangle$ Double of its rest mass

15 If the rest mass of a particle  $m_0$  increased to  $m$  due to its high speed then its kinetic energy is.

- A.  $\langle p \rangle (m - m_0) c^2$
- B.  $\langle p \rangle \frac{1}{2} mv^2$
- C.  $\langle p \rangle \frac{1}{2} mc^2$
- D.  $\langle p \rangle \frac{1}{2} (m - m_0) c^2$