

1. The result of Michelson-Morley experiment show that: ☒ (a) No change in interference pattern there will be change in ether. (b) No change in interference pattern, no ether. (c) Ether change will be proportional interference pattern change B and D is correct. (d) Ether formation depends on change in interference pattern.
2. As a result of Michelson-Morley experiment's class, Albert Einstein comes up with radical new theory based on two very simple postulates in the year (a) 1795 ☒ 1878 (c) 1905 (d) 1950. —→ 1878
3. First Newton's Law of motion is otherwise referred to as _____ and related to _____. (a) Inertial frame and body's constant in motion. (b) Inertial and body at rest alone. (c) Inertial frame of Reference and body at rest or in motion at a constant velocity, unless action by forces. ☒ (d) Inertial and body at rest or in motion remain in their initial state at a constant velocity unless acted upon by a net external force.
4. Facts about Gravitational potential show that (a) $U = -\frac{GMm}{r}$ (b) U at infinity is considered to be zero by convention. (c) Negative sign is an indication that potential is higher at an infinity distance than that closer to the earth surface. ☒ (d) All of the above.
5. Two objects A and B of masses 10kg and 8kg move towards each other with velocity 12 and 8 m/s respectively and collide. Calculate the velocity of the two bodies after collision; hence determine the kinetic energy after collision.
(a) 10.8 m/s & 100.2 J (b) 100.8 m/s & 1103.8 J ☒ (c) 10.2 m/s & 940.4 J (d) 1.028 m/s & 9.91 J
6. Coefficient of restitution is defined as a. (a) Measure of the restitution of a collision between objects. (b) Ratio of Velocity impact after impacts to velocity before impact. (c) None of the above. ☒ (d) All of the above.
7. If two cars of masses 10.0kg and 20.0kg are placed on a smooth table and connected by a spring. The 20.0kg car is then pushed east by a horizontal force of 120N. Determine the acceleration of the centre of mass of the two cars. (a) 4.01 ms^{-2} (b) 12.01 ms^{-2} ☒ (c) 2.01 ms^{-2} (d) 4.01 ms^{-2}
8. Universal law of Gravitation is equally regarded as (a) Newton laws of Gravitation (b) Law connecting masses of object along the Earth field and their distance of separation. ☒ (c) Law connecting masses of object along the Earth field and their distance of separation. (d) A and B only.
9. Force of Gravity is generally equal to Gravitational constant. (a) A and B only. (b) 2nd Kepler's law (c) 2nd and 3rd Kepler's law ☒ (d) 3rd Kepler's law.
10. Determine the gravitational force exerted in terms of G on a 40g stone by a 10kg boulder which is 20.0cm away (a) 10G (b) 3G (c) 20G (d) 5G.

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