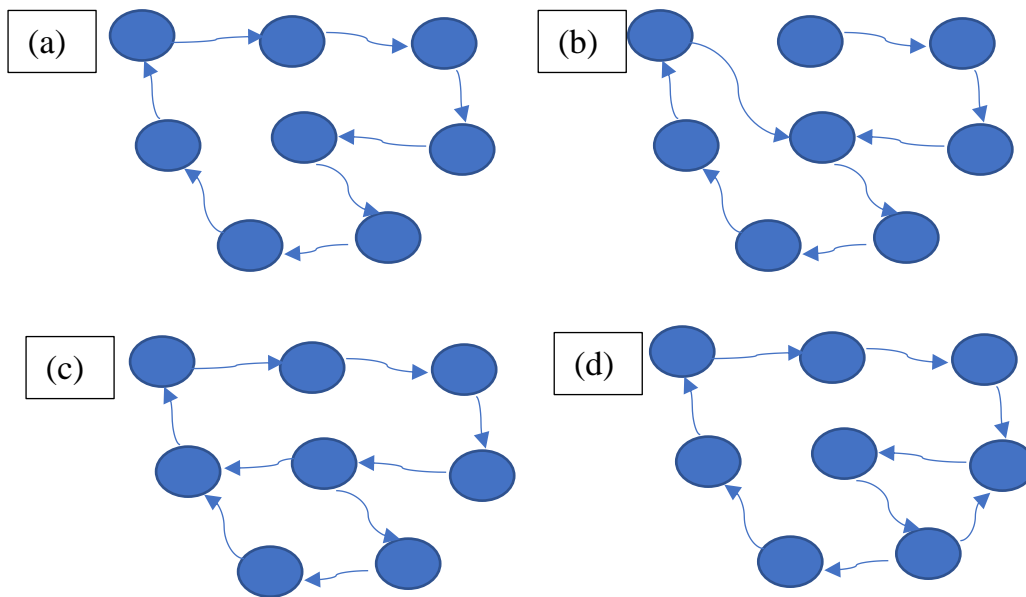


1. What diagram can make a perfect statement of law.



2. Which is the correct representation of Newton's second law.

(a) $\frac{d^2y}{dx^2} = -kx^2$ (b) $\frac{d^2x}{dt^2} = m \frac{dV}{dt}$ (c) $\frac{d(mV)}{dt^2} = m \frac{dx^2}{dt^2}$ (d) $\frac{d(mV)}{dt^2} = m \frac{d^2y}{dx^2}$

3. Identify the correct statement:

- (a) Lagrange's equations can be used to prove Newton's laws
- (b) One cannot derive Newton's laws from Lagrange's equation alone.
- (c) Newtonian motion is similar to Lagrangian motion if we do not consider energy.
- (d) Lagrangian formulations are incomplete without Hamilton.

4. Hamilton of an equation of motion represents one of the following:

- (a) Energy of the system.
- (b) Lagrangian of the system.
- (c) System is in motion.
- (d) System is at rest.

5. Which gate is sufficient to make a latch

- (a) NOT gate
- (b) NOR Gate
- (c) AND Gate
- (d) OR Gate

6. Identify which truth table do not represent a basic Logic Gate.

(a)	A	B	O
	1	0	1
	1	1	1
	0	1	1
	0	0	0

(b)	A	O
	1	0
	0	1

(c)	A	B	O
	0	0	1
	0	1	0
	1	0	0
	1	1	0

(d)	A	B	O
	1	0	1
	1	1	0
	0	1	0
	0	0	1

7. Photoelectric effect is related to:

- (a) Removal of electrons from a metal foil
- (b) Balancing of electron in atoms of metal
- (c) Emission of radiation from a semiconductor
- (d) Reflection of electromagnetic radiation from a metal foil.

8. Wave like properties of matter can be best understood by:

- (a) Photoelectric effect
- (b) Thermionic emission
- (c) Double slit experiment.
- (d) De Broglie wavelength.

9. Which is the premier atomic model?

- (a) Rutherford's model
- (b) Vector atom model
- (c) Thomson's model
- (d) Bohr's model

10. Which of the following is a basic 1-bit memory element?

- (a) Latch
- (b) J-K Flip-flop
- (c) R-S flip-flop
- (d) D-flip flop.