STUDY MATE
QUESTION BANK

ANSWER KEY
ANNUAL EVALUATION 2024 – 25
CLASS.9: PHYSICS

1. Copper 1
2. volt 1
3. The Sun 1
4. 0 N 1
5. Always positive **1**
6. i. They face difficulty for communication. **2**
   ii. Social isolation.
   iii. Risk of accidents
7. a. 500 N b. 500 N **2**
8. a.Uniform velocity. 2
   b. Acceleration is zero
9. 2

Refraction	Total internal reflection
Stars appear twinkling	During summer season, there seems to be water logging on roads when viewed from a distance.
The Sun can be seen just before it reaches the eastern horizon	
The bottom of a pond appears elevated when viewed from a distance.	

10. a. string b. Wooden body **2**
11. a. False. As we go deeper and deeper into the earth, the value of R decreases and the value of g decreases. 3
    b. True
    c. False. When the distance between two bodies is doubled, the gravitational force between them becomes one fourth.
12. a. kinetic energy b. zero **3**
    c. Graph.ii
13. Potential difference – W/Q - V
    Current – Q/t - A
    Resistance – V/I - Ω
14. a. Kinetic Energy **3**
    b. Ep due to configuration
    c. An object placed at height
15. a. 1 Ω 3
    b. i. Resistance of each piece = 6 Ω
    Effective resistance of parallel combination, 1/R = 1/6 + 1/6 + 1/6 = 3/6
    Or R = 6/3 = 2 Ω
    b.ii.Effective resistance of series combination = 6+6+6 = 18 Ω

16. a. Change in momentum = mv – mu = 20x10 – 20x2 = 200 – 40 = 160 kgm/s **4**
Rate of change of momentum = change in momentum/time = 160/8 = 20 kgm/s^2
b. Force = rate of change of momentum = 20 N
c. Acceleration = (v-u)/t = (10-2)/8 = 1 m/s^2
d. v = u + at = 2 + 1x10 = 2+10 = 12 m/s

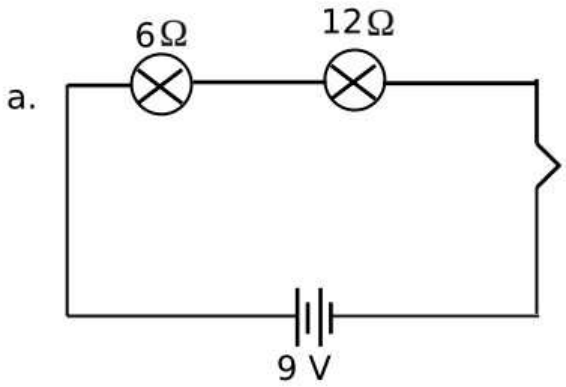
17. a. Energy is the capacity of doing work. Its SI unit is joule.
b. i. Both work and energy are scalar quantities.
ii. Unit of work and energy are the same
c. 1 Cal = 4.2 J
The energy in 100 mL grape = 64x4.2 = 268.8 J

18. a. potential differences **4**
b. Ohm's Law: Ohm's Law states that the current through a conductor is directly proportional to the potential difference across the conductor when the temperature is constant.
c. i. 12/2 = 6 Ω ii. 12/1.8 = 6.7 Ω
d. When current flows through the nichrome wire gets heated and hence resistance increases.

19. a. A sound that has regular vibrations is pleasant to hear is music. A sound that has irregular vibrations and is unpleasant is noise. 4
b. Deafness, Asthma, Blood pressure
c. 1. Avoid using air horns in vehicles.
2. Ensure vehicle silencers are functioning efficiently.
3. Use box-type loudspeakers instead of horn-type.
4. Plant more trees.

20. **4**

a.



b. No. When devuces are connected in series, same current flows through both devices.
c. Effective resistance R = 6x12/(6+12) = 72/18 = 4 Ω