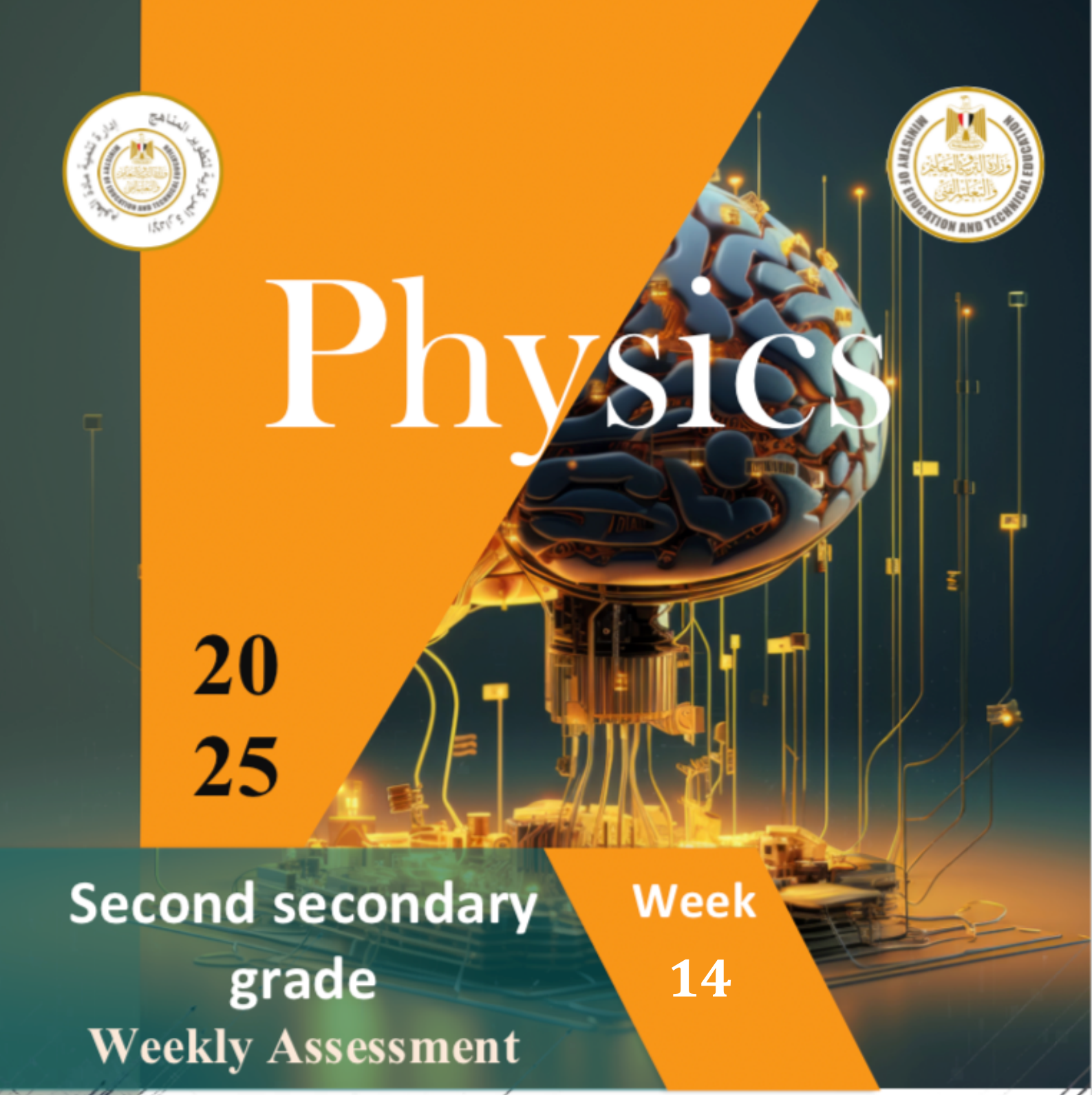
Physics



2025

Second secondary grade

Weekly Assessment

Week 14

Prepare and review

Science Development Office

Weekly assement

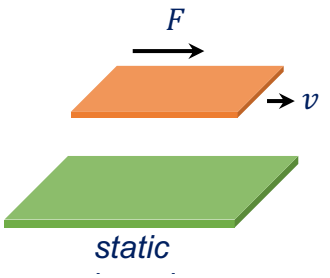
1) A layer of viscous liquid with a thickness of 8 cm is placed between two horizontal, parallel flat plates. If the viscosity coefficient of the liquid is 0.8 Kg/m.s, find:
   (a) The force required to move a thin plate with an area of 0.5 m^2 at a speed of 2 m/s parallel to the two levels and a distance of 2 cm from one of them.
   (b) The pressure resulting from this force acting on the thin plate.

2) Mention the scientific reason for each of the following:
   (a) The momentum of a solid body decreases when it moves in a fluid
   (b) Floating aquatic plants are often found near beaches.
   (c) Inhabitants of the upper floors feel the wind speed more than those of the lower floors
   (d) The speed of sea waves decreases when closing we get to the beach
   (e) When water waves move from a deep point to a shallow point, their speed decreases
   (f) Increasing the speed of a car beyond a certain limit causes an increase in fuel consumption.
   (g) Metal machines should be lubricated and greased
   (h) Water is not used to lubricate metal machines, while high-viscosity oils are used.
   (i) The sedimentation rate in the blood decreases below the normal rate in the case of anemia
   (j) The sedimentation rate of red blood cells increases in patients with rheumatic fever.
   (k) A doctor can diagnose a type of disease by performing a blood sedimentation rate test.

3) What is meant by?
   (a) The viscosity of a liquid = 0.8 kg/(m.s)
   (b) The sedimentation rate of blood in a normal person = 15 mm/h

4) A car starts from rest and its speed increases until it exceeds 120 km/h. what is the figure that expresses the relationship between speed and air resistance?

5) **In the corresponding figure, when a liquid A is put between the two plates and a tangential force $100\ N$ is applied on the upper plate, the plate moves with velocity $0.2\ m/s$, and when changing the liquid A with another liquid B and applying a tangential force $50\ N$ on the upper plate the plate moves with a velocity $0.4\ m/s$, what is the ratio between the coefficients of viscosity of the two liquids ?**



6) **A panel its area $225\ cm^2$ is affected by a tangential force $4.5\ N$ causes it to slide on another slab at rest, between them a layer of liquid its viscosity coefficient $0.8\ N.s/m^2$ and thickness $2.2\ mm$. What is the velocity of the slab?**

7) **The ratio between the coefficient of viscosity of air over the poles to the coefficient of viscosity of air at the equator is .....**

(A) greater than one.

(B) less than one

(C) equal to one.

(D) Vanishes

8) **A flat plate has area $0.01\ m^2$ moves with velocity $12.5\ m/s$, isolated from another large static plate with a layer of liquid its thickness $2\ mm$, so if the coefficient of viscosity of the liquid is $4\ kg/m.s$. Calculate The force required to keep the plate moving.**

9) **A flat plate of square shape along its side $0.2\ m$ isolated from another plate by a layer of liquid its thickness $4\ cm$. If a force of magnitude $20\ N$ is applied to the first plate and it moves with a speed $1\ m/s$. So what is the value of the viscosity coefficient?**

10) **A Square slab its side $10\ cm$ slides over another static slab between them a layer of a viscous liquid its viscosity coefficient equals $1.2\ N.s/m^2$. If the upper plate moves with velocity $0.2\ m/s$ as a result of tangential force $0.6\ N$, what is the thickness of the liquid layer?**