Question **1**

Not yet answered

Marked out of 1.00

Flag question

You have a small piece of metal that is 1 cm long and weighs 0.1 N. Find out the surface tension.

Select one:

- a. 10 N/m
- b. 20 N/m
- c. 30 N/m
- d. 5 N/m

Clear my choice

Question **2**

Not yet answered

Marked out of 1.00

Flag question

A box is sliding down an incline that is 35^0 above the horizontal. If the coefficient of kinetic friction between the block and the surface is 0.4, the magnitude of its acceleration is

Select one:

- a. 1.3 m/s^2
- b. 5.6 m/s^2
- c. 2.4 m/s^2
- d. 8.8 m/s^2

Clear my choice

Question **3**

Not yet answered

Marked out of 1.00

Flag question

The resistance of a piece of aluminum is measured to be 2.8×10^{-5} Ω. What is the resistance of a piece of glass with the same dimensions? ($\rho_{Al}=2.8\times10^{-8}$ Ω.m, $\rho_{glass}=10^{10}$ Ω.m).

Select one:

- a. 10^{13} Ω
- b. 2.8×10^{-13} Ω
- c. 2×10^{-6} Ω
- d. 3×10^{10} Ω

Clear my choice

Question **4**

Not yet answered

Marked out of 1.00

Flag question

Two cars are initially 150 kilometers apart and traveling toward each other. One car is moving at 60.0 km/h and the other is moving at 40.0 km/h. In how many hours will they meet?

Select one:

- a. 1.5 h
- b. 2.5 h
- c. 2.0 h
- d. 1.75 h

Question **5**

Not yet answered

Marked out of 1.00

Flag question

The speed of light in an unknown medium is measured to be 2.5 x 10^8 m/s. What is the index of refraction of the medium?

Select one:

- a. 1.5
- b. 1.8
- c. 2.3
- d. 1.2

Question **6**

Not yet answered

Marked out of 1.00

Flag question

A convex lens has focal length 20 cm. Calculate at what distance from the lens should the object be placed so that it forms an image at 40 cm on the other side of the lens.

Select one:

- a. 40 cm
- b. -40 cm
- c. 20 cm
- d. -20 cm

A ball is thrown horizontally from a height of 20 m and hits the ground with a speed that is three times its initial speed. What is the initial speed of the ball?

Select one:

- a. 9.8 m/s
- b. 12 m/s
- c. 5.8 m/s
- d. 7.1 m/s

Question **8**

Not yet answered

Marked out of 1.00

Flag question

A 10.0 kg rock whose density is 5×10^3 kg/m^3 is suspended in water by a string such that half of the rock's volume is inside the water. What is the tension in the string?

Select one:

- a. 55 N
- b. 80 N
- c. 110 N
- d. 90 N

Question **9**

Not yet answered

Marked out of 1.00

Flag question

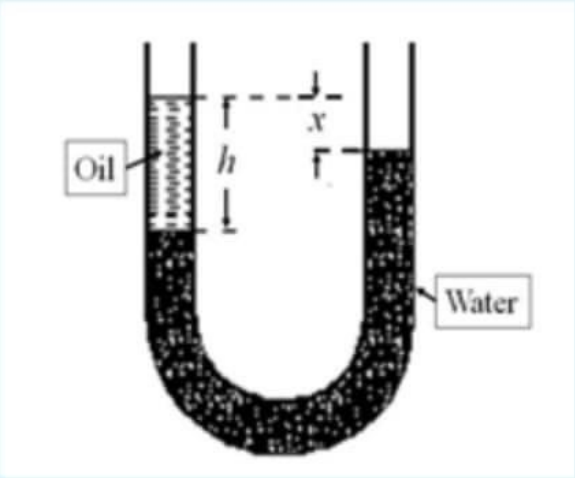
Two point particles, one with charge 8 nC and the other with -2 nC, are separated by 4 m. The electric field midway between them is:

Select one:

- a. 13.5 N/C
- b. 45 N/C
- c. 7.5 N/C
- d. 22.5 N/C

Clear my choice

A U-shaped tube is filled with water and oil as shown in the Figure. If h = 20 cm and x = 2.0 cm, find the density of the oil.



Select one:

- a. 1.3 g/cm^3
- b. 0.7 g/cm^3
- c. 0.9 g/cm^3
- d. 1 g/cm^3

A ray of light travels through air (n = 1.0) and approaching the boundary with water (n = 1.33). The angle of incidence is 45°. Determine the angle of refraction.

Select one:

- a. 10^0
- b. 18^0
- c. 20^0
- d. 32^0

Clear my choice

Question **12**

Not yet answered

Marked out of 1.00

Flag question

A glucose solution being administered with a flow rate of 4 cm^3/min. What will the new flow rate be if the glucose is replaced by blood having the same density but a viscosity 2.5 times that of the glucose? All other factors remain constant.

Select one:

- a. 10 cm^3/min
- b. 8 cm^3/min
- c. 2.4 cm^3/min
- d. 1.6 cm^3/min

Question **13**

Not yet answered

Marked out of 1.00

Flag question

A particle is moving with constant acceleration of $-8.0\ m/s^2$ along the x-axis. At time t = 0 its position is 10 m and is moving with the velocity of 10 m/s. Find the position of the particle at t = 4.0 s.

Select one:

- a. −43 m
- b. +114 m
- c. +24 m
- d. −14 m

Question **14**

Not yet answered

Marked out of 1.00

Flag question

A small artery has a length of 1.3×10^{-3} m and a radius of 2.0×10^{-5} m. If the pressure drop across the artery is 1.3 KPa, what is the flow rate through the artery? ($\eta_{blood}=2.1\times10^{-3}$ Pa.s).

Select one:

- a. $5\times10^{-11}\ m^3/s$
- b. $6\times10^{-11}\ m^3/s$
- c. $3\times10^{-11}\ m^3/s$
- d. $9\times10^{-11}\ m^3/s$

Question **16**

Not yet answered

Marked out of 1.00

Flag question

If two temperatures differ by 25 degrees on Celsius scale, the difference of temperature on Fahrenheit scale is:

Select one:

- a. 45
- b. 77
- c. 25
- d. 13

Question **17**

Not yet answered

Marked out of 1.00

Flag question

The gauge pressure at a point 3 m below an open surface of a tank filled with water is

Select one:

- a. 98 KPa
- b. 30 KPa
- c. 87 KPa
- d. 40 KPa

Clear my choice