THEORETICAL TEST I
ANSWER SHEET

Multiple Choice Questions (each number = 0.5 point)
Circle the corect answer

No.				
1	A			
2		B		
3				D
4		B		
5			C	
6				D
7	A			
8		B		
9		B		
10		B		
11		B		
12				D
13			C	
14	A			
15		B		

*Name :*____________________________
Country :____________________________

Short Question.

1. A and C

2.

3. V= $\frac{m}{\rho} = \frac{1000 \text{ g}}{10.50 \text{ g/mL}}$ = **95.238 mL**

4. a. $\frac{\text{Ozon concentration}}{\text{Pollution standard level}} = \frac{\text{RPI}}{50} = \frac{85}{50} = 1.7$

   So, the concentration of ozon **more than** pollutant's standard level

   b. $\frac{NO_2 \text{ Concentration}}{\text{Pollution Standard level}} = \frac{\text{RPI}}{50} = \frac{25}{50} = 0.5$

   So, the NO_2 concentration = 0.5 standard level = 0.5 x 0.12 = **0.06 ppm per hour**

5. $P = \frac{W}{\Delta t}$

   $\frac{P_A}{P_B} = \frac{W_A}{W_B} \cdot \frac{t_B}{t_A}$

   $\frac{2}{1} = \frac{1000}{W_B} \cdot \frac{300}{200}$ $\longrightarrow$ **W_B = 750 Joule**

Theoritical Test II Answer Sheet

(answer the questions)

1. **(2 Points)**
   - not biodegradable / not water-soluble / tend to be stored in fats hence accumulates in fishes or other aquatic organisms (eg. Plankton)
   - Secondary consumer feeds on it and stores these pesticides
   - tertiary consumer stores even more pesticides as it consumes much more to obtain more energy / due to 10% of energy transfer from one trophic level to another

2. **(point 1.5 each = 0.5)**

   A. Smooth Muscle Cell
   B. Cardial Muscle Cell
   C. Striated Muscle Cell

Striated **Muscle Cells (0.25 point)**	Smooth **Muscle Cells (0.25)**	**Cardiac Muscle Cells**
Striated: packed with orderly arrangement of myofibrils **(0.4 Point)**	Not Striated: Fewer myofibrils of varying lengths	Striated: many myofibrils in orderly arrangement **(0.4 Point)**
Under control of nervous system	Under control of nervous and endocrine systems and various chemicals and stretching **(0.4 Point)**	Under control of nervous and endocrine systems and various chemicals
Fatigue easily **(0.4 Point)**	Doesn't fatigue **(0.4 Point)**	Doesn't fatigue

3. **(point 1.5 each = 0.5)**
   A. Mammals, they have mammary glands
   B. They have hair on their body
   C. They have poison to defense of their enemy

4. A. This reduces water loss because the lower surface receives less solar radiation than the upper surface **(1 Points)**

   B. **Light/lightness**.
   Light conditions would generally result in the higher rate of transpiration. Stomata are generally open in the light, and solar energy increases evaporation.
   Dry environment.
   A dry environment would result in the higher rate of transpiration because the water potential in the surrounding air would be lowest, resulting in more rapid

evaporation.
Breezy conditions (Low wind movement).
Breezy conditions would increase the rate of evaporation of water from the surface of the leaves, lowering the water potential, and resulting in more rapid evaporation. However, if the plant is subjected to very high wind movement, the stomata may actually close, which prevents water loss.

(3 Points)

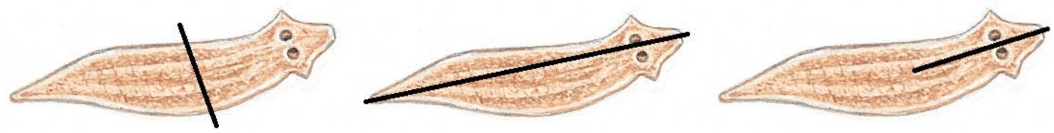
5. A. **(0.5 point)** Harp spin, Dholpin, Rabbit, Dog, and Zebra

   B. **(0.5 point)** Rabbit

   C. **(1 point)** Harp seal leave in the cold environment

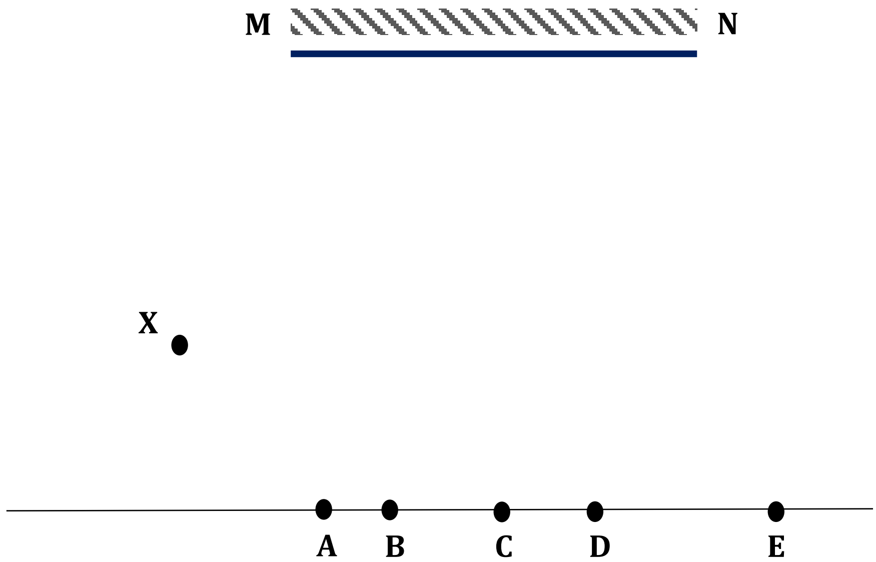
   D. **(1 point)** Zebra leave in the dry environment and need instant energy

6. A. **(0.5 point)** Planaria
   B. **(0.5 point)** Platyhelminthes
   C. **(0.5 point)**



7. **A. (0.75 point)** C, D and E

B. (1.75 points)



8. **A. (1 point)** The biggest rotation is turbine (C)

B. (1.5 points)
Because water is falling from a height of h_3 where $\boldsymbol{h_3 > h_2 = h_1}$ **(0.5 point)**
The velocity of rotation is **depended on energy (0.5 point)** which the highest potential energy, **E =** $\boldsymbol{mgh}$**, (0.5 point)** is turbine (C)

9. **(3 points)**

$$I \propto \frac{1}{r^2} \Rightarrow \frac{I_1}{I_2} = \left(\frac{r_2}{r_1}\right)^2$$

$$I_2 = I_1\left(\frac{r_1}{r_2}\right)^2 = 9\left(\frac{40}{60}\right)^2 = 4\ \text{Watt/m}^2$$

10. **(3 points)**

$\sum F = ma \rightarrow T - mg = ma$ or $T = m\,(g+a)$

So, $$m = \frac{T}{g+a} = \frac{180\ N}{(10+8)m/s^2} = 10 \quad \text{kg}$$

11. A. **(1 point)** 4 forces: F_1, F_2, W, and N

B. **(2 points)**

$\sum F = ma$ (along X axis)

$$\Rightarrow a = \frac{\sum F}{m} = \frac{(75-45)N}{2} = \frac{30N}{2kg} = 15\ \text{m/sec}^2$$

C. **(2 points)**

$$V_t = V_0 + at$$

$$V_{10} = 0 + 15.10 = 150\ \text{m/sec}$$ to right ward

12. A. **(1 point)** electric dipole
B. **(1 point)** electrodes
C. **(1 point)** X = atrium contraction, Y= Ventricel contraction
D. **(1 point)**80 beat/ minute

13. A. **(1 point)** Linear correlation
B. **(1 point)** to distinguish different species
C. **(1 point)** the density of air above the earth surface at night time is denser then at daylight
D. **(1 point)** poikiloterm, cold blood animal

*Name :*______________________________
Country :______________________________

Experiment 1
Answer Sheet

Solutions	**pH level**	**Number of Iodine Drops**	**Vitamin C Concentrations (mg/ml)**
Ascorbic acid			
Commercial orange juice			

Name :______________________________
Country :______________________________

Lemon water			
Fresh orange juice			

1. **Answer** : ____________________

   Explanation :

   ____

   ____

   ____

2. **Answer** : ____________________

   Explanation :

   ____

   ____

   ____

3. ____

   ____

   ____

4. ____

5. Drawing the diagram.