**University of Djilali BOUNAAMA Khemis Miliana L3 Physics**

**F Faculty: Science and Technology Scientific English I**

**D Department: Material Science 2022/2023**

 **Last name: ……………….. Group: ………..**

**Firs First name: ……………….**

**Final Exam**

**Exercice 01. Choose the correct answer/answers to the following statements (05 pts)**

* **QCM.1. Electricity is the phenomenon associated with**
1. stationary electric charges
2. moving electric charges
3. nuclear force
4. magnetism

**QCM.2. Common SI units of electricity are**

1. ampere (A)
2. coulomb (C)
3. volt (V)
4. ohm (Ω)
5. milligram
6. milliliter

**QCM.3. Electromagnetic wave has**

1. an electric and magnetic component
2. only electric component
3. only magnetic component

**QCM.4. Key SI units of magnetism are**

1. ampere (A)
2. tesla (T)
3. ampere per meter (A/m)
4. weber (Wb)

**QCM.5. Electromagnetic can behave like**

1. particle or a wave
2. only particle
3. only wave

 **Exercice 02 (5 pts): For each of the following questions indicate true or false, and then fully explain your answer.**

1. The direction of the magnetic field depends on the direction of the current.

…………………………………………………………………………………………

1. Electricity and magnetism are two separated phenomena produced by the electromagnetic force. Together, they form electromagnetism.

…………………………………………………………………………………………

1. A stationary electric charge generates a magnetic field.

…………………………………………………………………………………………

1. A magnetic field induces electric charge movement, producing an electric current.

…………………………………………………………………………………………

1. In an electromagnetic wave, the electric field and magnetic field are perpendicular to one another.

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**Exercice 03 (10 pts)**:

**Explain what the term particle-wave duality means.**

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**Note:**

* **QCM: Right answer (+1) / false answer (-1)**
* **The answer must be written on the examination paper with a pen. Papers copied from another paper will not be accepted for correction.**
* **Unclear answers are not corrected.**