**NAME………………………………………………ADM.NO……………CLASS:……….**

**MWAKICAN JOINT EXAMINATION (MJET) - 2019**

**FORM ONE PHYSICS TERM I 2019**

**TIME: 2 HRS.**

**INSTRUCTION TO CANDIDATE’S:**

1. *Write your* ***name****,* ***Admission number*** *and* ***class*** *in the spaces provided above.*
2. *This paper consists of* ***TWO*** *Sections; Section* ***A*** *and Section* ***B****.*
3. *Answer* ***ALL*** *the questions in both Section* ***A*** *and* ***B*** *in the spaces provided.*
4. ***ALL*** *working* ***MUST*** *be clearly shown.*
5. *Candidates should check the question paper to ascertain that all the 6 pages are printed as indicated and that no questions are missing.*
6. *Candidates should answer the questions in English.*

*Where necessary, take:*

*g = 10N/kg*

*Density of water = 1000kg/m3*

**For Examiners Use only**

|  |  |  |
| --- | --- | --- |
| **Section** | **Marks** | **Marks awarded** |
| **A**  | 25 Marks |  |
| **B**   | 55 Marks |  |
| Total (80Marks) |  |

***Section A (25marks)***

1. Explain briefly the first aid measure that should be taken incase of (2mk)
2. Cut
3. Poisoning
4. Physics is a natural science. Explain.(2mk)
5. State any five branches of physics(5mk)
6. State any five career opportunity in physics (5mk)
7. State any five laboratory safety rules (5mk)
8. Name any 4 items contained in the first Aid kit found in the laboratory(4mk)
9. Briefly explain how physics is related to biology(2mk)

**Section B (55 marks)**

1. a) Define force and state its SI unit (2mk)
2. State any three effects of a force (3mk)
3. State any 2 types of force (2mk)
4. Distinguish between a scalar and vector quantity giving an example of each (3mk)
5. A body weighs 400N in water. If the upthrust force is 20N.calculate its weight in air (2mk)
6. State any 2 applications of capillary action (3mk)
7. State any two factors affecting the surface tension (2mk)
8. A man has a mass of 70kg. Calculate
9. His weight on earth where the gravitational strength is 10 N/kg (2mk)
10. His weight on moon where the gravitational strength is 1.7 N/kg (2mk)
11. Explain briefly why water wets the glass while mercury does not(2mk)
12. State any four differences between mass and weight(4mk)

|  |  |
| --- | --- |
|  Mass | Weight |
|  |  |
|  |  |
|  |  |
|  |  |

1. a) Giving an example define the term derived quantity. (2mk)
2. Complete the table below(7mk)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Fundamental quantity | SI UNIT | SYMBOL |
| 1 |  | meter | M |
| 2 | Mass |  | kg |
| 3 | Time |  |  |
| 4 |  |  | A |
| 5 |  | Kelvin | K |

b) Describe the method you would use to measure the circumference of a cylinder using a thread and a meter rule (3mk)

1. A sphere of diameter 3.0 cm is mounted into a thin uniform wire of diameter 0.2mm calculate the length of the wire in meters (3mk)
2. The mass of 25cm3 of ivory was found to be 0.045kg. Calculate the density of ivory in SI units (3mk)

1. Explain how you would measure the volume of irregularly shaped object using a measuring cylinder, a piece of thread and some water. (3mks)
2. A eureka can of mass 100g and cross-sectional area 100cm2 is filled with water of density 1g/cm3.A piece of metal of mass 20g and density 8g/cm3 is lowered carefully into the can as shown

10cm

Calculate

1. The total mass of water and Eureka can before the metal was lowered (3mks)
2. The volume of water that overflowed (2mk)
3. The final mass Eureka can and its content (2mk)