**PHYSICS PRACTICAL (232/3**

**END TERM 2022)**

**MARKING SCHEME**

**QUSTION:**

|  |  |
| --- | --- |
| **PART 1** | **PARTII** |
| 1. Mass m0 of the marble used=6.7g(mass depends on the marble used)(height depends on the amount of water put in the boiling tube) 2. Height h1 of the water column=7.8cm | 1. Total lengthl1, of the boiling tube   L1=14.5+ 0.1cm   1. (i) Length L2 to the tube above the liquid level l2=3.6+ 0.1cm   (ii) length of the tube immersed in the liquid L1-L2 =14.5-3.6=10.9+0.1cm |
| 1. New height of h2 of the water column=8.5cm | (c) Mass M of the boiling tube with its content m=48.5+0.1g=0.0485kg |
| 1. Internal diameter d of the boiling tube=2.14+ 0.01cm | (d) Outer diameter, d, of the boiling tube  D=2.39+0.1cm |
| 1. V0=   =(8.5-7.8)=2.52cm  =2.52cm3(3d.p) | (e) volume vx of the liquid x displaced  Vx=π2  2 = 48.92cm(3d.p) |
| 1. Density d0= = = 2.66g/cm3 (3d.p) | (f) Mass mx of the liquid x displaced  Mx=v xℓ  =48.92ℓ grams where ℓ is in g/cm3 |
|  | Weight=x10=0.4892ℓ Newtons |
| (g)Weight of liquid x displaced = Weight of the boiling tube + its content.  0.4892ℓ=0.485  ℓ=0.485  0.4892  =0.99g/cm3(3d.p) (Range: 0.95-1.05g.cm3) |

**QUESTION 2**

**PART 1**

1. (iii) Table of results

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Length L(m) | 0.70 | 0.60 | 0.50 | 0.40 | 0.30 | 0.20 |
| Current 1(A) | 0.12 | 0.14 | 0.16 | 0.18 | 0.22 | 0.28 |
| 1/1(A-1) | 8.33 | 7.14 | 6.25 | 5.56 | 4.55 | 2.78 |

1mark each to a maximum of 4

value-1max for all correct

**(iv) Graph of 1/1(y-axis) against L.**

(v) Slope S of the graph S= = =8.818Am-1 (Range:8.375-8.960A-1m-1)

(b) (i) Diameter, d,of the nichrome wire d=0.35+0.01mm