**JINJA JOINT EXAMINATIONS BOARD**

**MOCK EXAMINATIONS**

**PHYSICS PRACTICAL 535/4 UCE JJEB**

**MARKING GUIDE 2019**

**Question1**

R1 – Record volume V0 of water in the measuring cylinder, and unit 1 mark

R2 – Record new water level v= such that that (VV0) = (23 – 27) 1 mark

R3 – Record new water level V when 10cm3 is poured in the tube 1 mark

T1 – Design a table with 3 columns 1mark

T2 – Label of the columns: Vp(cm3), V(cm3), Vw(cm3) 3marks

T3 – Record 5 more values of V such that the values increase by:

a successive factor of (2 – 5) (cm3), 5marks

– Record 6 values of Vw (where, Vw = V- V0) correctly calculated 3marks

|  |  |  |
| --- | --- | --- |
| **Vp(cm3)** | **V(cm3)** | **Vw** |
| 0 | 135 | 25 |
| 10 | 150 | 40 |
| 15 | 154 | 44 |
| 20 | 158 | 48 |
| 25 | 162 | 52 |
| 30 | 166 | 56 |
| 35 | 170 | 60 |

G1 – A graph of Vw against Vp 1mark

G2 – Label axes Vw (cm3)

Vp(cm3)

G3 – Suitable and convenient scales 2mark

G4 – plot 6 points correctly 3mark

G5 – Draw best straight line 1mark

G6 – Indicate method of finding the slope 1mark

C1 – Calculation of slopes:

Correct substitution

Correct arithmetic

Accuracy (0.7 – 0.9) 2 mark

I - Intercept, M = (25 – 35) no unit 1mark

**Question 2**

R1 - Record distance f1 = (14 – 17) cm 2marks

R2 – Record distance v = (44 – 46) cm 2marks

T1 – Design a table with 4 columns 1mark

T2 – Labels of columns u (cm), v (cm), (cm-1), 1mark

T3 – Record 5 more values of v 5marks

Record 6 values of to 3 sf 3marks

Record 6 values of to 3 sf 3marks

|  |  |  |  |
| --- | --- | --- | --- |
| **d(cm)** | **v(cm)** | **(cm-1)** | **(cm-1)** |
| 25.0 | 44 – 46 | 0.0400 |  |
| 30.0 | 33 – 35 | 0.0333 |  |
| 35.0 | 29 – 31 | 0.0286 |  |
| 40.0 | 25.5 – 27.5 | 0.0250 |  |
| 45.0 | 24.0 – 26.0 | 0.0222 |  |
| 50.0 | 22.5 – 24.5 | 0.0200 |  |

G1 – A graph of against 1mark

G2 - Label of the graph (cm-1) 2marks

(cm-1)

G3 – Suitable and convenient scales 2marks

G4 – Plot 6 points correctly 3marks

G5 – Draw best straight line 1mark

I1 – Read and record the intercept C1with unit on axis 1mark

I2 – Read and record the intercept C2 with unit on axis 1mark

C1 – Calculation of f2;

Correct substitution

Correct arithmetic 1mark

C2 – calculate f from the expression 2f = f1+f2 1mark

Correct substitution and arithmetic

Accuracy (14 – 17) 1marks

**TOTAL**  **30 MARKS.**

**Question 3**

R1 – Record ammeter reading, I = (0.6 – 0.20), unit A 1mark

R2 – Record voltmeter reading, V = (1.2 – 1.4), unit v 1mark

T1 – Design a table with 4 columns 1mark

T2 – Labels of the columns x (cm), I (A), V (v), IX (Am) 2marks

T3 - Record 5 more values of I 5marks

Record 5 more values of V 5marks

Record 6 values of IX 3marks

|  |  |  |  |
| --- | --- | --- | --- |
| **X(M)** | **I(A)** | **V(v)** | **IX(Am)** |
| 0.90 | 0.16 – 0.20 | 1.2 – 1.4 |  |
| 0.80 | 0.18 – 0.22 | 1.1 – 1.3 |  |
| 0.70 | 0.18 – 0.24 | 1.0 – 1.2 |  |
| 0.60 | 0.20 – 0.26 | 0.9 – 1.1 |  |
| 0.50 | 0.22 – 0.28 | 0.8 – 1.0 |  |
| 0.40 | 0.26 – 0.30 | 0.7 – 1.0 |  |

G1 – A graph of V against IX 1mark

G2 – Label of the axes V(v)

IX(Am) 2marks

G3 – Suitable and convenient scale 2marks

G4 – Plot 6 points correctly 3marks

G5 – Draw the best straight line 1mark

G6 – Indicate method of finding the slope s 1mark

C1 – Calculation of slope s

Correct substitution

Correct arithmetic

Accuracy 2marks

**Total 30marks**