# Nyaraya Cluster Examination

**Kenya Certificate of Secondary Education**

**Form Four Mock Evaluation Programme**

1. a (i) f1= 9.8cm

 (ii) h=20.2cm

 (iii) F2 = $\frac{20.2}{2}$

 10.1cm.

F0=$ \frac{f1+f2}{2}$ =$\frac{9.8+10.1}{2}$ =9.95cm

e)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| l(cm) | 3 | 5 | 7 | 10 | 13 | 15 |
| x(cm) | 28.5 | 21.0 | 12.5 | 10.0 | 8.0 | 6.5 |
| $\frac{1}{l}$(cm-1) | 0.3333 | 0.2000 | 0.1429 | 0.0500 | 0.06667 | 0.07692 |

f)

 x (cm) A-1/2

 S-1/2

 P-2

 L-1

 $\frac{1}{l}$(cm-1)

g) i) Slope= $\frac{(30-0)}{\left(35-0\right)x102}$ =85.71cm

ii)f=$\sqrt{85.71}$ =9.26cm

**PART A**

2(a)iii) =4.65cm

iv) R =$\frac{4.654}{20X6}$ =3.896cm

e)

|  |  |  |  |
| --- | --- | --- | --- |
| Burette reading  | 10.0 | 15.0 | 20.0 |
| Volume of water remaining (cm3) | 40.0 | 35.0 | 30.0 |
| Log10 V | 1.602 | 1.544 | 1.477 |
| Time, T(s) | 2.34 | 3.52 | 5.22 |
| $z$=$\frac{log10 V}{t}$ | 0.6846 | 0.4386 | 0.2830 |

i)β =$\frac{0.6846+0.4386+0.2830}{3}$

=0.4686 (ignore units)

ii) x=$\frac{0.639}{0.4687}$

=1.363

PART B

X0=0.555m

X1= 0.700m

e=0.145m

t=15.9/s T=$\frac{15.91}{20}$ =0.7955

e)T=2$π√\frac{e}{q}$ =0.7955 =2$π√\frac{0.145}{q}$

q=9.051m/s2

ii)0.7955=2$π√\frac{0.100}{k}$

k=6.242N/m2