SUMMER QUIZ 01

Form 2 Summer Course
Estimation and Approximation
Measurement Errors
Polynomials

Part A - MC (@2marks)

1.	C	
2.	A	Absolute error $= 0.42 - 0.4 = 0.02\,\text{m}$
3.	D	$65 \times (1 - 0.4\%) \le \text{Actual Weight} < 65 \times (1 + 0.4\%)$ $64.74\text{g} \le \text{Actual Weight} < 65.26\text{g}$
4.	B	$\text{Relative error} = \dfrac{1.25 - 1.2}{1.25} = \dfrac{1}{25}$
5.	C	$7(-1+2x)(x+3) = 7(-x-3+2x^2+6x)$ $= 7(2x^2+5x-3)$ $= 14x^2+35x-21$
6.	D	$(-5x^3+6x+2)-(4x^2+3x-1)$ $= -5x^3+6x+2-4x^2-3x+1$ $= -5x^3-4x^2+6x-3x+2+1$ $= -5x^3-4x^2+3x+3$
7.	D	Degree of $h^2y^2 = 2+2 = 4$ Degree of $\ell au^3 = 1+1+3 = 5$ Degree of $f^4 = 4$ $\therefore$ Degree of polynomial $= 5$
8.	B	Coefficient of $x^2 = 3(8) - 2(2) = 20$
9.	C	$n \le \dfrac{(8+0.5)\times 1000}{140-0.5}$ $n \le 60.93189964$ The greatest possible value of $n = 60$
10.	B	$(13.5)(7.5) - (13.5-3.5-5.5)(4.5) < x < (14.5)(8.5) - (14.5-4.5-6.5)(3.5)$ $81 < x < 111$

1.	C	2.	A	3.	D	4.	B	5.	C
6.	D	7.	D	8.	B	9.	C	10.	B

Part B - Long Questions

1. (a) $2^{999} \times 2^{111} \div 2^{222} \div 2^{884}$

$= 2^{999+111-222-884}$ 1M

$= 2^4$

$= 16$ 1A

(b) $\dfrac{6a^2b^3c^2}{(-3abc)^2}$

$= \dfrac{6a^2b^3c^2}{9a^2b^2c^2}$ 1M

$= \dfrac{2b}{3}$ 1A

(4)

2. (a) M.A.E $= \dfrac{1}{2} = 0.5$cm 1A

(b) $199.5 \le x < 200.5$ 1A

(c) Percentage error $= \dfrac{0.5}{200} \times 100\% = 0.25\%$ 1A

(d) Lower limit of ladder cut $= 15 - \dfrac{5}{2} = 12.5$cm

Upper limit of the remaining part = 200.5 – 12.5 = 188cm 1A

(4)

3. (a) $-2(3x+2)-(x^2-7x+1)$

$= -6x-4-x^2+7x-1$ 1M

$= -x^2+x-5$ 1A(*)

(*) no marks for not arranged in descending power of x

(b) Sub $x = -1$,

The value of the polynomial

$= -(-1)^2 + (-1) - 5$ 1M for using (a)

$= -1-1-5$

$= -7$ 1A

(4)