

SIR ARTHUR LEWIS COMMUNITY COLLEGE
DIVISION OF AGRICULTURE
ASSOCIATE DEGREE IN GENERAL AGRICULTURE
END OF SEMESTER ONE EXAMINATION



COURSE: AGM 105 – Agricultural Mathematics
Time : 2 hours 30 minutes

#M48

Date: December, 2009

1 Evaluate the following algebraic expression.

(a) v^{-4} / v^{-8} (c) $(1/16)$ (d) $(a^6/27)^{-2/3}$ (e) $(b^{1/3}/b^{-1/3})^{1/2}$

(d) $(32/4)^{-2/5}$

2. . Solve for the unknown

(a) $(4y)^{5/4} = 32$ (b) $4^{4v+8} = 64^{12-2v}$ (c) $\sqrt{125^m} = 5/25^m$ (d) $\frac{1}{2} - \frac{2}{k} = \frac{3}{k}$

(e) $(\sqrt{2})^n = \sqrt[3]{2}$

3. Factorise the following algebraic expressions

(a) $3d^2 - 7d + 4$

(k) $60x^2y^2 - 200xy^3 - 35y^4$

(C) $9u^2v + 6uv^2$

(d) $6r^4 - 9r^3 + 3r^2$

(e) $y^3 - 1$

(g) $k^2 - 81$

(h) $9h^3 + 8$

(i) $m^6 + p^3$

4 Simplify

(A) $\log 64 - \log 128 + \log 32$

(B) $\log 125 + \log 25 - \log 625$

(c) $(125/k^6)^{1/2}$

5 (a) During one year the world consumption of crude oil increased at a rate of 5%. Suppose the World consumption of oil continued to increase at the rate of 5 %per year. How long would it take to double the world's consumption?

6. Suppose that a radioactive substance decays so that the amount present decreases by 11% per day. How much will be present after 6 days if the original amount weighs 40kg?



7. Solve for the unknown in each of the following:

(a) $32 - 4y = 16$ 2 mks

(b) $27^{q+2} = 3^{5-q}$ 3 mks

(c) $\frac{3x}{5} = x - 6$ 4 mks

(d) $7(5 - k) = 3(k - 5)$ 3 mks

8. A factory employs 18 women to sew 540 dresses. They take 6 weeks to do the job. If 12 women had been employed instead, how long would it have taken them to sew the 540 dresses? 3 mks

9. (a) Determine three consecutive odd numbers whose sum is 123.

(b) Nine books are to be bought by a student. Some cost \$6.00 each and the remainder cost \$6.50 each. If the total amount to be spent is \$56.00, how many of each will be bought? 5 mks

10. Evaluate:

(a) $0.021 \times 3.6 \div 4$ 4 mks

(b) $5\frac{2}{3} + 2\frac{3}{7} \div \frac{1}{4}$ 4 mks

(c) Given that $m = 3$ and $n = -2$, calculate the value of $2m^2 - 3n^3$ 3 mks

(d) $\sqrt[3]{\frac{27}{8}}$ 4 mks

