SIR ARTHUR LEWIS COMMUNITY COLLEGE

End of Semester Examinations
Academic Year 2002 - 2003 - Semester One
Division of Agriculture
Associate Degree in Agriculture
Course : Access Mathematics

#51
#M8

Date: Wednesday, December 12, 2002. **Time: 9:00 am** **Duration: 2 hours**

Instructions: Answer all questions

1. (a) Evaluate without using calculators: $(81^{1/4} \times 9^{1/2}) / (3^2 \times 27^{2/3})$

(b) Write as simple quantities without negative indices:

(i) $1/8^{-2}$ (ii) $(\frac{1}{2})^{-4}$ (iii) $3a^{-2}$

2. Divide : (i) $-8h^3k^3 - 6h^2k^2 + 2h^2k^4 - 4h^4k^2$ by $-2h^2k^2$

(ii) $12x^2 - 53x + 33$ by $3x - 11$

3. Simplify (i) $x - 3 - 2\{2 - 3(x - y)\}$

(ii) $[-(m + n) - (3m - 4n)] - [(5m - n) - (9m - 4n)]$

4 Write as simple fractions:

(i) $5/(4c + 12) - 4/(2c + 6)$

(ii) $4x/5 + 2/3x$

5 Factorize: (i) $9a^2 - 4c^2$

(ii $6a^2 - 11a - 35$

(iii) $24a^3 - 80a^2 + 24a$

6 Express in logarithmic form: (i) $5^{2x} = 25$ (ii) $10^{0.5} = x$

7 Solve the following: (i) $3/(a+4) - 7/a = -6/a$

(ii) $2m / 3 = 8 / (m + 4)$

8. Solve the following: (i) $(x + 3)^{2/3} = 4$

2. $(4a + 5)^{½} = 7$

(iii) $4^x = 84$

(iv) $\log (x + 4) = 1.5$

9. Calcium ammonium nitrate is 27% nitrogen by weight and Magnesium Sulphate is 8.4% magnesium by weight. These fertilizer materials are used to supply nitrogen and magnesium respectively to a tomato crop. If the crop requires 184 kg of nitrogen and 18 kg of magnesium per hectare respectively, how much of each fertilizer material is needed to supply one hectare of the crop.