THE OPEN UNIVERSITY OF SRI LANKA

BACHELOR OF MANAGEMENT STUDIES

LEVEL 03

MCU 1207 – QUANTITATIVE TECHNIQUES FOR MANAGEMENT-I

ASSIGNMENT TEST - 2006

DURATION: TWO (02) HOURS

Date : 30th September 2006 **Time: 10.00 a.m. – 12.00 noon**

INSTRUCTIONS :

Answer any FOUR (04) questions.

Non programmable calculators are allowed.

All questions carry equal marks.

01. a. If x =2, y=9 and z=4 evaluate the following mathematical expressions.

i. $\dfrac{x^2(y-4)^3}{z+1}$ ii. $\dfrac{(y-2)^2(z-1)}{(x+1)(z+3)}$

b. Simplify the following expressions.

i. $\dfrac{x^5(y^2-1)(x+2)}{(x^2-4)(y+1)}$ ii. $\sqrt{\dfrac{(x^{3/2})^4(a^2-b^2)(a-b)}{(a+b)b^4}}$

c. Factorise the following

i. $x^2-3x-28$ ii. $a^4-ab^3+ba^3-b^4$

02. a. Solve the following equations.

i. $7x+26 = 40$ ii. $\frac{x + Log_{10}x}{x+2} = \frac{Log_{10}x^2}{4}$

b. At a certain examination the marks obtained by a candidate for mathematics is twice as much as the marks obtained for English and the marks obtained for English is 20 more than what he has obtained for Sinhala. If the total of marks obtained for all the three subjects mentioned above is 120 evaluate the marks obtained for each subject.

05

03. a. Solve the following equations

i. $x^2 - 12x+35 = 0$ ii. $\frac{x}{x+1} = \frac{2x+3}{x+9}$

06

b. A rectangular block of land of area 240 sq.feet has its length 8 feet more than the breadth. Calculate the length and breadth of the block of land.

04. a. Solve the following simultaneous equations.

i. $x + 2y = 7$

$5x - 3y = 9$

ii. $\frac{1}{x} + \frac{1}{y} = \frac{3}{2}$

$\frac{1}{x} - \frac{1}{y} = \frac{1}{2}$

b. A and B are two cities 210 Km apart. While one motorist leave city A and move towards city B another motorist at the same time leave city B and move towards city A. If the two motorists take 3 hours to meet each other and if the deference between their speed is 10 km per hour find the individual speed of the two motorists.

05. a. In an arithmetic progression the fifth term is 15 while the tenth term is 25.

i. What is the 15^{th} term?

ii. Find the sum of first ten terms.

b. In a geometric progression the third term is 18 while the fifth term is 162.

i. What is the 8^{th} term?

ii. Find the sum of first ten terms.

06. a. Find the differential coefficient of the following functions with respect to x.

i. $2x^2+3x+4$

ii. $(x^2+4)(x+3)$

iii. $\dfrac{x^2+7}{2x+3}$

b. Integrate the following with respect to x.

i. $\int (x^2+7x+2)\ dx$