The Open University of Sri Lanka
Foundation Course in Science –Level 02
Closed Book Test (CBT) 2009/2010
MAF 2302/ MAE 2302 – Applied Mathematics

Duration: One and half (1 ½) Hours

Date : 22-03-2010   **Time : 1.30 pm – 3.00 pm**

Answer ALL Questions

1. The following table gives the mileage traveled (m) before the first motor failure for each of 191 buses.

Distance traveled (in thosands of miles)	Frequency
0–20	6
20–40	11
40–60	16
60–80	25
80–100	34
100–120	46
120–140	33
140–160	16
160–180	2
180–200	2

   (i)   Summaries the above information in a historgram.
   (ii)   Compute the sample mean and median.

2. (a) If A and B are any two event on sample space S'.

   Prove that $P(A \cup B) = P(A) + P(B) - P(A \cap B)$.

   (b) A box contain six red and five yellow marbles. The marbles are removed at random one at a time without replacement. Find the probability that
   (i) the first two marbles removed red.
   (ii) the second marbles removed is yellow.

3. Find
   (a). $D\{e^x \sin x + \cos x\}$ (b). $(D^2 + D + 1)(x^3 + x^2 + x + 1)$

   (c). $\dfrac{1}{D}\{x \ln|x|\}$