1. Determine the number of significant digits in each of the following numbers. (10 marks)

1) 1234 _____

2) 0.023 _____

3) 890 _____

4) 91010 _____

5) 9010.0 _____

6) 1090.0010 _____

7) 0.00120 _____

8) 3.4×10^{4} _____

9) 9.0×10^{-3} _____

10) 9.010×10^{-2} _____

11) 0.00030 _____

12) 1020010 _____

13) 780. _____

14) 1000 _____

15) 918.010 _____

16) 0.0001 _____

17) 0.00390 _____

18) 8120 _____

19) 7.991×10^{-10}_____

20) 72 _____

2. Add the following and give the final answer with the correct number of significant digits. (5 marks)

a) 9.54 + 6.578 =

b) 8.55 + 11.6 + 10 =

c) 135 + 6.78 =

d) 51.08 + 9.9 =

e) 100 + 34.9 =

3. Multiply the following and give the final answer with the correct number of significant digits. (10 marks)

a) 18.4 X 10.98 =

b) $(1.23 \times 10^3)(2.301 \times 10^4) =$

c) 16.56 X 6.0 =

d) 5.5 X 2 =

e) 24.3 X 7.87 =

f) 1000 X 234 =

g) 358.76 X 4.32 =

h) $(1.245 \times 10^4)(7.98 \times 10^3) =$

i) 7 X 23 =

j) 0.098 X 0.7621 =

4. Convert the following numbers into scientific notation (all with three significant digits): (8 marks)

1) 3,400 _____

2) 0.0000230 _____

3) 101,000 _____

4) 0.0100 _____

5) 45.01 _____

6) 1,000,000 _____

7) 0.00671 _____

8) 4.50 _____