

CREDIT UNIT: 2

COURSE CODE: BUS 800
COURSE TITLE: Quantitative Analysis
TIME ALLOWED: 2Hrs
INSTRUCTION:

1. Attempt question number one (1) and any other (2) questions.
2. Question number 1 carries 30 marks, while the other two (2) questions carry 20 marks each.
3. Present all your points in coherent and orderly manner.

1a. Which sets are finite and infinite?

- i. The months of the year
- ii. $\{1, 2, 3, \dots, 99, 100\}$
- iii. The people living on the earth
- iv. $\{x \mid x \text{ is even}\}$
- v. $\{1, 2, 3, \dots\}$

1b. Suppose, the probability of an assembly line failing is 0.05 and the probability of a raw material shortage is 0.1.

If these two events are independent of each other, then what are the probability of an assembly line failing and a raw material shortage.

1c. A distributor stocks heavy (2B), medium (HB), fine (2H) and extra fine (3H) pencils which come in packs of 10. Currently in stock are 2 packs of 3H, 14 packs of 2H, 35 packs of HB and 8 packs of 2B. If a pack of pencil is chosen at random for inspection, what is the probability that they are:

(a) medium (b) heavy (c) not very fine (d) neither heavy nor medium?

2a. An ordinary six-sided die is to be rolled, the equally likely outcome set, U , is $\{1,2,3,4,5,6\}$ and the event 'even number' has event set $\{2,4,6\}$. Calculate the theoretical probability of obtaining an even number easily.