

Name: _____

I.D. No.: _____

Please circle your section and Instructor:**1. Chisholm** (1:30 - 2:20)**2. Chisholm** (11:30-12:20)**3. Chenouri** (10:30-11:20)**4. Zhou** (12:30-01:20)

1. Three suppliers A, B, C provide chips A, B, C to a computer company. Among all the chips used, 50% are from A, 30% are from B, and 20% are from C. The proportion of defective chips for suppliers A, B, C are 0.01, 0.05, 0.06, respectively.

- [4] (a) Take 10 chips at random from supplier B. What is the probability that exactly two of them are defective?

- [5] (b) Randomly check a chip in storage, what is the probability that the chip is defective?

- [4] (c) If a chip used in a computer is found defective, what is the probability that the chip is from supplier C?

2. Suppose the random variable X has p.f.

$$f(x) = k \cdot 0.2^x \quad \text{for } x = 0, 1, 2, \dots$$

[4] (a) Find k .

[4] (b) Find $P(X \geq 2)$.

[4] (c) Find $P(X = 2 \mid X \geq 2)$.