

SAMPLE PAPER 2014: PAPER 2

QUESTION 1 (25 MARKS)

Question 1 (a)

$$1 - 0.383 - 0.575 - 0.004 = 0.038$$

x	13	14	15	16
$P(X=x)$	0.383	0.575	0.038	0.004

$$E(X) = \sum xP(x) = 13 \times 0.383 + 14 \times 0.575 + 15 \times 0.038 + 16 \times 0.004 = 13.663$$

Question 1 (b)

$E(X)$ represents the mean value of the age of all the second year students on 1 January 2010.

Question 1 (c)

$$n = 10$$

$$r = 6$$

$$p(14) = 0.575$$

$$q(\text{Not } 14) = 0.425$$

BERNOULLI TRIALS

$p = P(\text{Success}), q = P(\text{Failure})$

$$P(r \text{ successes}) = {}^nC_r p^r q^{n-r}$$

$$P(6 \text{ out of } 10 \text{ are } 14 \text{ years of age}) = {}^{10}C_6 \times (0.575)^6 (0.425)^4 = 0.248$$
