SEC SET D (SP 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
$p = P(\text{Success}), q = P(\text{Failure})$
$P(r \text{ successes}) = {}^{n}C_r p^r q^{n-r}$

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

QUESTION 2 (25 MARKS)

...ulation is divided