

**254.** You are given:

- (i) A portfolio consists of 100 identically and independently distributed risks.
- (ii) The number of claims for each risk follows a Poisson distribution with mean  $\lambda$ .
- (iii) The prior distribution of  $\lambda$  is:

$$\pi(\lambda) = \frac{(50\lambda)^4 e^{-50\lambda}}{6\lambda}, \quad \lambda > 0$$

During Year 1, the following loss experience is observed:

Number of Claims	Number of Risks
0	90
1	7
2	2
3	1
Total	100

Determine the Bayesian expected number of claims for the portfolio in Year 2.

- (A) 8
- (B) 10
- (C) 11
- (D) 12
- (E) 14