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Question a) Using the relation (7) page 297 we get

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Question a) Using the relation (7) page 297 we get

$$G(t)$$

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$$\lambda(t) = \begin{cases} 0.05 & t \leq 10 \\ 0.1 & t > 10 \end{cases}$$

Question a) Using the relation (7) page 297 we get

$$G(t) = e^{-(10 \cdot 0.05 + 5 \cdot 0.1)}$$

The hazard rate is given by

$$\lambda(t) = \begin{cases} 0.05 & t \leq 10 \\ 0.1 & t > 10 \end{cases}$$

Question a) Using the relation (7) page 297 we get

$$G(t) = e^{-(10 \cdot 0.05 + 5 \cdot 0.1)} = e^{-1}$$

The hazard rate is given by

$$\lambda(t) = \begin{cases} 0.05 & t \leq 10 \\ 0.1 & t > 10 \end{cases}$$

Question a) Using the relation (7) page 297 we get

$$G(t) = e^{-(10 \cdot 0.05 + 5 \cdot 0.1)} = e^{-1}$$

Question b)

$$G(t)$$

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$$G(t) = \begin{cases} e^{-0.05t} & t \leq 10 \\ \end{cases}$$

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Question c) Using (5) page 297 we get

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Question d) We calculate the mean using (8) page 299.

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Question d) We calculate the mean using (8) page 299.

$$\begin{aligned} E(T) &= \int_0^\infty G(t) \mathrm{d}t \\ &= \int_0^{10} e^{-0.05t} \mathrm{d}t + e^{-0.5} \int_{10}^\infty e^{-0.1(t-10)} \mathrm{d}t \\ &= \frac{1}{0.05} \left(1 - e^{-0.5}\right) + \frac{e^{-0.5}}{0.10} \\ &= 20 - 10 e^{-0.5} \end{aligned}$$

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