

Probability – Q1 [Practice/E] (23/5/21)

An exam candidate is supposed to answer 4 questions out of 5 in Section A, 3 out of 4 in Section B, and 2 out of 3 in Section C. If they don't read the instructions properly and answer 9 questions at random from the paper, what is the probability that they answer the questions they are supposed to?

Solution

Number of ways of choosing 9 questions from the whole paper

$$= \binom{12}{9} = \frac{12(11)(10)}{6} = 220$$

Number of ways of choosing 4 questions out of 5 from Section A, 3 out of 4 from Section B, and 2 out of 3 from Section C

$$= \binom{5}{4} \times \binom{4}{3} \times \binom{3}{2} = 5 \times 4 \times 3 = 60$$

$$\text{Prob (making the right choice)} = \frac{60}{220} = \frac{3}{11}$$