





### Question 1 continued

Q1





**Q2**

**(Total 11 marks)**



- The number of misprints per page has a Poisson distribution with mean 2.5. Find the probability that

- (c) the total number of misprints on 2 randomly chosen pages is more than 7. (3)

(d) Using a suitable approximation find, to 2 decimal places, the probability that the chapter will contain less than 40 misprints.

(7)



**Q3**



**(Total 4 marks)**

- (a) a sampling unit, (1)
- (b) a sampling frame, (1)
- (c) a sampling distribution. (2)





**Question 5 continued**

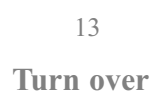
**Q5**

1



**Turn over**







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**(Total 18 marks)**



A random sample of 10 patients with depression is taken from a doctor's records.

- (a) Write down a suitable distribution to model the number of patients in this sample who recover when treated with the new drug.

(2)

Given that the claim is correct,

- (b) find the probability that the treatment will be successful for exactly 6 patients.

**(2)**

The doctor believes that the claim is incorrect and the percentage who will recover is lower. From her records she took a random sample of 20 patients who had been treated with the new drug. She found that 13 had recovered.

- (c) Stating your hypotheses clearly, test, at the 5% level of significance, the doctor's belief.

**(6)**

- (d) From a sample of size 20, find the greatest number of patients who need to recover for the test in part (c) to be significant at the 1% level.

**(4)**









**Question 7 continued**

Handwriting practice lines for Question 7 continued.

**Q7**

**(Total 14 marks)**

**TOTAL FOR PAPER: 75 MARKS**

**END**



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