|  |  |  |
| --- | --- | --- |
| الإختبار الفصلي الثاني  الفصل الدراسي الثاني 1434-1435 هـ  مادة 106 إحص |  | جامعة الملك سعود  كلية العلوم  قسم الإحصاء وبحوث العمليات |

|  |  |
| --- | --- |
| الساعة : 12- 1 | الأربعاء 23- 6 – 1435 هـ |

**اسم الطالبة : -----------------------------------------------------------------------------------**

**رقم الطالبة : -----------------------------------------------------------------------------------**

**رقم الشعبة : ----------------------------- رقم التسلسل : ---------------------------------------**

**أستاذة المقرر : ---------------------------------------------------------------------------------**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Question* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| *Answer* | B | A | A | D | B | A | B | C | A | A |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Question* | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| *Answer* | B | B | B | C | A | C | B | C | D | C |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *Question* | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| *Answer* | A | B | C | A | C | D | B |

1)

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | . | (b) | . |
| (c) | . | (d) | . |

2) If A and B are disjoint events, then

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0 | (b) | 1 |
| (c) | . | (d) | . |

3) The parameters of binomial distribution are

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | . | (b) | . |
| (c) | . | (d) | X. |

250 adults are classified according to sex and their level of blood pressure (low, medium, high) in following table:

|  |  |  |
| --- | --- | --- |
| Sex  Blood pressure | Male  (M) | Female  (F) |
| Low (L) | 30 | 40 |
| Medium (Me) | 35 | 25 |
| High (H) | 60 | 60 |

If a person is selected at random from this group, then

4) The probability that the person is **female**

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 1 | (b) | 0.1 |
| (c) | 0.24 | (d) | 0.5 |

5) The probability that the person is **female** given that the person has a **medium** blood pressure is

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.1 | (b) | 0.4167 |
| (c) | 0.24 | (d) | 0.48 |

6) The probability that the person has **high** blood pressure or he is male is

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.74 | (b) | 0.48 |
| (c) | 0.5 | (d) | 0.24 |

Suppose that **the cumulative distribution function** of Y is given by

Then

7)

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.8 | (b) | 0.6 |
| (c) | 0.2 | (d) | 0 |

8) f(5)=

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.8 | (b) | 0.6 |
| (c) | 0.2 | (d) | 0.4 |

The probability that a person suffering from headache will obtain relief from a particular drug is 0.9 **three** randomly selected sufferers from headache are given the drug.

9) The probability distribution of the number obtaining relief is

|  |  |  |  |
| --- | --- | --- | --- |
| (a) |  | (b) |  |
| (c) |  | (d) |  |

Find the probability that the number obtaining relief will be

10) **No one** will obtain relief is

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.001 | (b) | 0.43 |
| (c) | 0.87 | (d) | 0.32 |

11) **At most one** will obtain relief

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.34 | (b) | 0.028 |
| (c) | 0.87 | (d) | 0.32 |

12) **The expected** value of the person will obtain relief from a particular drug is

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.34 | (b) | 2.7 |
| (c) | 0.87 | (d) | 0.32 |

13) **The standard deviation** of the person will obtain relief from a particular drug is

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.27 | (b) | 0.5196 |
| (c) | 0.87 | (d) | 0.32 |

14) **Two** will obtain relief is

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.027 | (b) | 0.27 |
| (c) | 0.243 | (d) | 2.7 |

Suppose we are interested in the number of patients in a waiting room in a particular Riyadh hospital in hour. Assume that the average number of patients in a waiting room at the hospital in hour is 8.

15) The probability that the number of patients will be **less than 2** in **half an hour** is

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.0916 | (b) | 0.0017 |
| (c) | 8 | (d) | 4 |

16) The **expected** number of patients in a waiting room in **hour** is

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.0916 | (b) | 0.0017 |
| (c) | 8 | (d) | 4 |

17) The probability that the number of patients will be **less than 2** in **hour** is

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.0916 | (b) | 0.0017 |
| (c) | 8 | (d) | 4 |

18) The **variance** ofnumber of patients in a waiting room in **hour** is

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.0916 | (b) | 0.0017 |
| (c) | 8 | (d) | 4 |

Let X be a random variable with the following probability distribution

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| x | 1 | 2 | 3 | 4 |
| f(x) | 0.48 | 0.24 | 0.16 | 0.12 |

19)

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.24 | (b) | 0.48 |
| (c) | 1 | (d) | 0.52 |

20)

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.12 | (b) | 0.48 |
| (c) | 0.4 | (d) | 0.16 |

21)

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 1.92 | (b) | 0 |
| (c) | 1.3 | (d) | 1 |

Let and

22) If A and B are independent, then

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.2 | (b) | 0.4 |
| (c) | 0.88 | (d) | 0 |

23) If A and B are disjoint, then

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0 | (b) | 1 |
| (c) | 0.28 | (d) | 0.88 |

Let , and , then

24)

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.6 | (b) | 0.3 |
| (c) | 0.2 | (d) | 0.5714 |

25)

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.6 | (b) | 0.3 |
| (c) | 0.2 | (d) | 0.5714 |

26)

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.6 | (b) | 0.3 |
| (c) | 0.2 | (d) | 0.5714 |

27)

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | 0.6 | (b) | 0.3 |
| (c) | 0.2 | (d) | 0.5714 |

**End of questions with good luck**