KATHMANDU UNIVERSITY
End Semester Examination
June/July 2024

Marks Scored:

Level : B.Pharm
Year : I

Course : MATH 102
Semester : I

Exam Roll No. :

Time: 30 mins.

F. M. : 20

Registration No.:

Date : 16 JUL 2024

SECTION "A"

[10Q. × 1 = 10 marks]

Fill in the blank space(s) by writing the most appropriate word(s) or symbol(s).

1. Coefficient of variation is the ratio of _____ to_____.
2. If the values of the first quartile (Q_1) and the third quartile (Q_3) of certain data are 3000 and 4000 respectively, then coefficient of quartile deviation is _____.
3. The probability of an event when the outcome of another event dependent on it is known is called _____ probability.
4. If X is a discrete random variable, then the probaiblity that it takes a particular value is a function of the value considered and it is called _____ function.
5. In binomial distribution, the probability of success must be _____ from trial to trial.
6. If $X \sim Poisson(2.5)$, then $P(X = 0) =$ _____
7. If $X \sim N(15,16)$, then $P(X < 18) = P(Z < \cdots \ldots \ldots \ldots \ldots \ldots)$.
8. The branch of Statistics that is concerned with studying different characteristics of population by using sample observations is called _____.
9. Correlation is the study of inter-relationship of a variable with one or more other variables, whereas, regression is the study of _____ of a variable with one or more other variables.
10. The pooled or combined variance of two samples of sizes 9 and 7 and sample variances 2.5 and 3.2 respectively is _____.

SECTION "B"

[10 Q.× 1 = 10 marks]

Fill in the blank space(s), **DO NOT TICK**, by selecting the most appropriate answers from among the given ones.

11. A _____ is a two-dimensional graph of two data values plotted in vertical and horizontal axes.
[dot plot scatter plot stem-and-leaf plot boxplot]

12. The expression $P(A \cap B) = P(A).P(B|A)$ is related to _____ law of probability.
[addition law multiplication law total law complementary law]

13. If A and B are two independent events then the expression _____ is not correct.
[$P(A \cap B) = P(A).P(B|A)$ $P(A \cup B) = P(A) + P(B) - P(A).P(B)$
$P(A \cap B) = P(A).P(B)$ $P(A|B) = P(A)$]

14. If $V(X) = 2.4$, then $V(2X - 7) =$ _____.
[9.6 -2.2 2.6 16.6]

15. The proability that a random variable X takes a value of at the least 5 is denoted as _____
[$P(X < 5)$ $P(X \leq 5)$ $P(X > 5)$ $P(X \geq 5)$]

16. The total number samples of size 3 that can be drawn from a population containing 7 units by simple random sampling without replacement is _____
[343 35 21 49]

17. The probability distribution of number of emergency cases in OPD of a hospital can be described by using _____ distribution.
[binomial Poisson normal hypergeometric]

18. A researcher wants to test the effectiveness of a training program that is intended to reduce work hours loss in industrial plants. If μ_1 *and* μ_2 denote average weekly work hour losses before and after the training program, then alternative hypothesis of the test is _____
[$H_1: \mu_1 = \mu_2$ $H_1: \mu_1 < \mu_2$ $H_1: \mu_1 > \mu_2$ $H_1: \mu_1 \neq \mu_2$]

19. t-distribution is used to carry inference on population mean when _____ _____
[population variance is known and sample size is large
population variance is known and sample size is small
population variance is unknown and sample is small
population variance is unknown and sample is large]

20. Blood pressure depends on weight. Here the variable 'weight' is _____ variable.
[independent dependent response regressive]