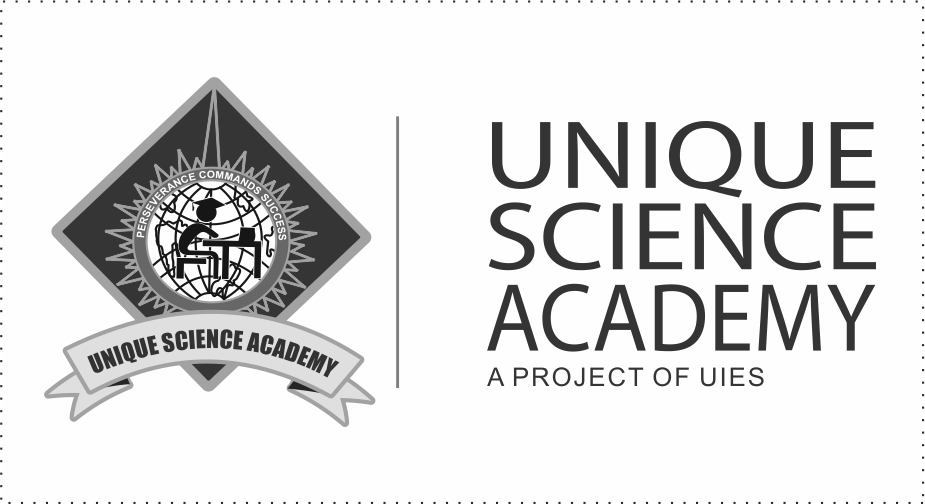
**Unique Science Academy, 60 – D Nawab Town, Lahore**

**Statistics 12 Monthly Test**

(Chapter 10 – Normal Distribution – Objective Type)

29 August 2024 Allowed Time: 50 minutes

Total Marks: 50

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**1. Select all that are true. (1 x 40 = 40)**

1. The normal distribution is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that ranges form \_\_\_\_\_\_\_\_\_\_\_\_\_.

* Discrete probability distribution, to
* Continuous probability distribution, to .
* Continuous frequency distribution, to
* Continuous probability distribution, to

1. The value of the parameter of a standard normal distribution is always \_\_\_\_\_\_.

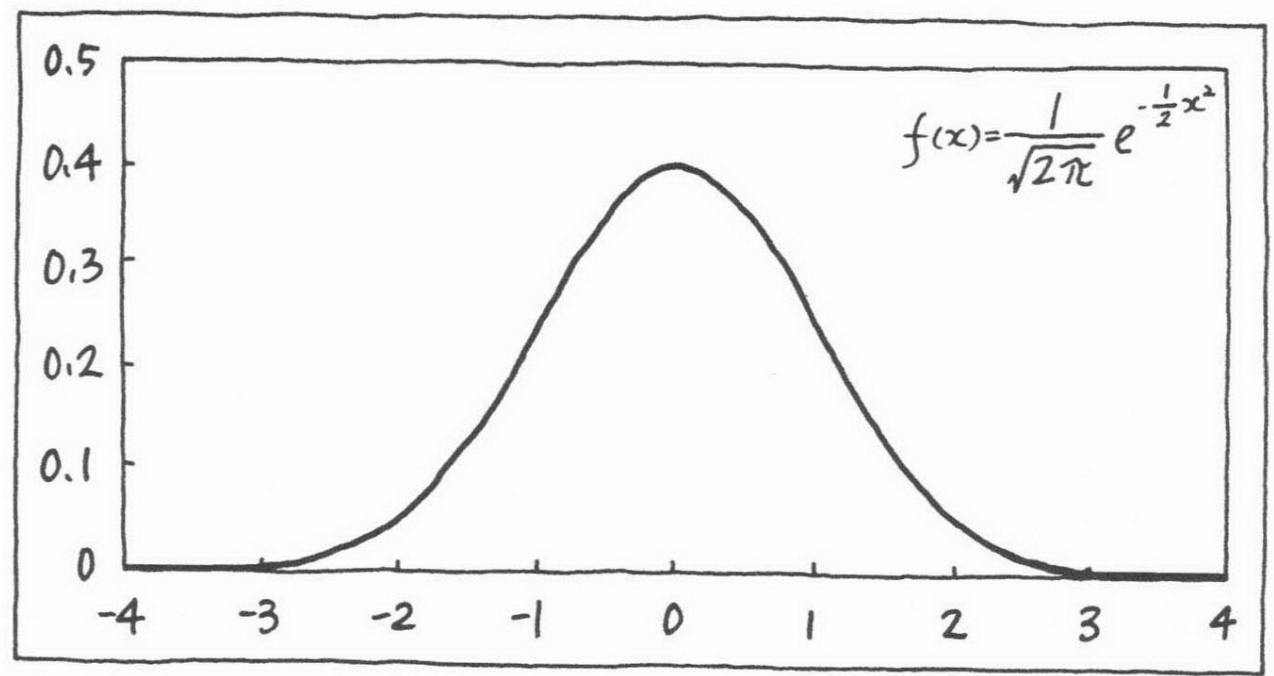
* Positive
* Negative
* 1
* Can be positive and negative

1. The normal distribution is a bell shaped \_\_\_\_\_\_\_\_\_\_\_ distribution.

* Skew – Symmetrical
* Symmetrical
* No skewed
* Positively and Negatively Skewed

1. If , then and

* and
* and
* and
* and



1. The maximum ordinate of the standard normal curve is at \_\_\_\_\_\_
2. The maximum ordinate of the normal curve is at

* Mode

1. The total area under a normal curve is \_\_\_\_\_\_\_\_\_

* Unity

1. The \_\_\_\_\_\_\_ of a normal distribution corresponds to in the standard normal distribution.

* Mean
* Median
* Mode

1. In a normal distribution, the mean, median and mode are \_\_\_\_\_\_\_\_\_\_.

* Same
* Identical
* Equal
* Can be different

1. In a standard normal distribution, if , then

* 0.975
* 0.025
* 1.96
* 97.5%

1. In a normal distribution, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. In a normal distribution, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. In a normal distribution, Quartile Deviation \_\_\_\_\_\_\_
4. In a normal distribution, Mean Deviation \_\_\_\_\_\_\_\_\_
5. In a normal distribution, all odd order moments about mean are \_\_\_\_\_\_\_.

* Positive
* Negative
* Zero
* Additive identity of Real Numbers

1. In a normal distribution, and .

* ,
* ,
* ,
* ,

1. The normal distribution is \_\_\_\_\_\_\_\_\_\_\_\_.

* Platykurtic
* Mesokurtic
* Leptokurtic
* Symmetrical

1. The points of inflexion of a normal curve are \_\_\_\_\_\_\_ from mean.

* Equidistant
* Having different distance
* Skewed
* Zero

1. The limits include \_\_\_\_\_\_\_\_ percent area under the normal curve.

* 68.27
* 95.45
* 99.73
* 68.45

1. The limits include \_\_\_\_\_\_\_\_ percent area under the normal curve.

* 68.27
* 95.45
* 99.73
* 68.45

1. The limits include \_\_\_\_\_\_\_\_ percent area under the normal curve.

* 68.27
* 99.45
* 99.73
* 68.45

1. The limits include \_\_\_\_\_\_\_ percent area under the normal curve.

* 25
* 50
* 75
* 100

1. Normal distribution has two parameters namely \_\_\_\_\_ and \_\_\_\_\_\_.

* Mean, Standard Deviation
* Mean, Variance

1. If is normally distributed with mean and variance , then it is denoted by
2. The standard normal distribution has mean \_\_\_\_ and variance \_\_\_\_\_.

* 0, 1
* 1, 0
* ,
* 0, 0

1. Which of the following statement is NOT correct about maximum ordinate of a standard normal curve?

* The maximum ordinate of a standard normal curve is approximately 0.3989
* The maximum ordinal of a standard normal curve is at
* The maximum ordinate of a standard normal curve is at
* The maximum ordinate of a standard normal curve is at

1. The standard normal distribution is symmetrical about \_\_\_\_\_.
2. The normal curve has maximum ordinate at
3. In a standard normal distribution, if , then .

* -1.96
* 1.96

1. In a standard normal distribution, if , then .

* -1.96
* 1.96

1. In a standard normal distribution, if , then .

* -1.96
* 1.96
* -1.645

1. The normal curve gets closer and closer to the - axis but never touches it. This property of normal distribution is known as:

* Symmetrical
* Asymmetrical
* Asymptotic
* Invariant

1. The expected value of a normal distribution is

* Mean
* Median
* Mode
* Variance

1. The shape of a normal distribution depends upon \_\_\_\_\_\_\_\_.

* Ordinates
* Area
* Parameters

1. The second moment about mean of the normal distribution is \_\_\_\_\_
2. In a normal distribution:

* Mean and variance are always equal
* Variance can be zero.

1. The parameter controls the \_\_\_\_\_\_\_\_\_\_ of the normal curve.

* Location on - axis
* Relative flatness
* Origin
* Symmetry

1. In a normal distribution, all even moments about mean are \_\_\_\_.

* Zero
* Negative
* Positive
* Same

1. The points of inflexion of the normal curve lie at \_\_\_\_\_\_.
2. Fourth moment about mean in a normal distribution is \_\_\_\_\_\_\_.

* 3

**Mathematical / Theoretical Part**

1. **Match the correct statements. (2 x 4 = 8)**

|  |  |
| --- | --- |
| **Function Name** | **Function** |
| Normal Probability Density Function |  |
| Normal Cumulative Distribution Function |  |
| Standard Normal Probability Density Function |  |
| Standard Normal Cumulative Distribution Function |  |

1. **Select all correct options (1 x 2 = 2)**
2. Which table is used for finding the value ?

* Ordinates of the Standard Normal Curve at
* Quantiles of the Standard Normal Distribution
* Values of the Normal Cumulative Distribution Function
* Values of the Standard Normal Cumulative Distribution Function

1. Which table is used for finding the value ?

* Ordinates of the Standard Normal Curve at
* Quantiles of the Standard Normal Distribution
* Inverse Standard Normal Cumulative Distribution Function
* Values of the Standard Normal Cumulative Distribution Function