

UNIT-II: Continuous Distributions and Sampling

1. Which of the following is a continuous probability distribution?

- a) Binomial Distribution
- b) Poisson Distribution
- c) Uniform Distribution
- d) Geometric Distribution

Answer: c) Uniform Distribution

2. In a Uniform Distribution, the probability density is:

- a) Increasing
- b) Decreasing
- c) Constant
- d) Zero

Answer: c) Constant

3. The total area under a probability density curve is:

- a) 0
- b) 1
- c) 2
- d) Depends on the distribution

Answer: b) 1

4. The Normal Distribution is also known as:

- a) Rectangular Curve
- b) Bell-shaped Curve
- c) Triangular Curve
- d) Exponential Curve

Answer: b) Bell-shaped Curve

5. The Normal Distribution is:

- a) Skewed to the right
- b) Skewed to the left
- c) Symmetric about the mean
- d) Uniform

Answer: c) Symmetric about the mean

6. In a Normal Distribution, the mean, median, and mode are:

- a) Different
- b) Equal
- c) Zero
- d) Infinite

Answer: b) Equal

7. The total area under the Normal Curve is:

- a) 0.5
- b) 1
- c) 2
- d) 100

Answer: b) 1

8. Approximately what percentage of observations lie within one standard deviation of the mean in a Normal Distribution?

- a) 50%
- b) 68%
- c) 95%
- d) 99.7%

Answer: b) 68%

9. The Normal Approximation is used for which distribution?

- a) Uniform Distribution
- b) Poisson Distribution
- c) Binomial Distribution
- d) Exponential Distribution

Answer: c) Binomial Distribution

10. Random Sampling means:

- a) Every population member has an equal chance of selection
- b) Only experts select samples
- c) Samples are selected by convenience
- d) Samples are selected alphabetically

Answer: a) Every population member has an equal chance of selection

11. A statistic is calculated from:

- a) Population
- b) Sample

- c) Census
- d) Parameter

Answer: b) Sample

12. A sampling distribution is the distribution of:

- a) Population values
- b) Sample means or other statistics
- c) Population parameters
- d) Random numbers

Answer: b) Sample means or other statistics

13. The mean of the sampling distribution of sample means is equal to:

- a) Sample variance
- b) Population mean
- c) Sample size
- d) Population variance

Answer: b) Population mean

14. The Central Limit Theorem states that the sampling distribution of the sample mean approaches:

- a) Uniform Distribution
- b) Poisson Distribution
- c) Normal Distribution
- d) Binomial Distribution

Answer: c) Normal Distribution

15. The Central Limit Theorem generally becomes effective when the sample size is:

- a) $n = 2$
- b) $n = 5$
- c) $n \geq 30$
- d) $n = 1000$ only

Answer: c) $n \geq 30$

Fill in the Blanks

16. The _____ Distribution is a continuous distribution with constant probability density.

Answer: Uniform

17. The total area under any probability density curve is _____.
Answer: 1
18. The Normal Distribution is also called the _____ curve.
Answer: Bell-shaped
19. A Normal Distribution is _____ about its mean.
Answer: Symmetric
20. In a Normal Distribution, the mean, median, and mode are _____.
Answer: Equal
21. Approximately _____% of observations lie within one standard deviation of the mean.
Answer: 68
22. Approximately _____% of observations lie within two standard deviations of the mean.
Answer: 95
23. Approximately _____% of observations lie within three standard deviations of the mean.
Answer: 99.7
24. The Normal Approximation is applied to the _____ Distribution.
Answer: Binomial
25. In random sampling, every population element has an _____ chance of being selected.
Answer: Equal
26. A numerical measure computed from a sample is called a _____.
Answer: Statistic
27. The distribution of a sample statistic is called the _____ distribution.
Answer: Sampling
28. The mean of the sampling distribution of the sample mean equals the population _____.
Answer: Mean
29. The _____ Limit Theorem explains why sample means tend to follow a Normal Distribution for large samples.
Answer: Central
30. The Central Limit Theorem is generally applicable when the sample size is _____ or more.
Answer: 30