QB365 Question Bank Software Study Materials

Sampling Techniques and Statistical Inference 50 Important 1 Marks Questions With Answers (Book Back and Creative)

12th Standard

Business Maths and Statistics

Total Marks : 50

Multiple Choice Question

50 x 1 = 50

1) A _____ may be finite or infinite according as the number of observations or items in it is finite or infinite.

(a) Population (b) census (c) parameter (d) none of these

2) A _____ of statistical individuals in a population is called a sample.

(a) Infinite set **(b) finite subset** (c) finite set (d) entire set

3) A finite subset of statistical individuals in a population is called _____.

(a) a sample (b) a population (c) universe (d) census

4) Any statistical measure computed from sample data is known as _____.

(a) parameter **(b) statistic** (c) infinite measure (d) uncountable measure

5) A _____is one where each item in the universe has an equal chance of known opportunity of being selected.

(a) Parameter **(b) random sample** (c) statistic (d) entire data

6) A random sample is a sample selected in such a way that every item in the population has an equal chance of being included _____.

(a) Harper (b) Fisher (c) Karl Pearson (d) Dr. Yates

7) Which one of the following is probability sampling

(a) purposive sampling (b) judgment sampling **(c) simple random sampling** (d) Convenience sampling

8) In simple random sampling from a population of N units, the probability of drawing any unit at the first draw is _____.

(a) $\frac{n}{N}$ **(b)** $\frac{1}{N}$ (c) $\frac{N}{n}$ (d) 1

9) In _____ the heterogeneous groups are divided into homogeneous groups.

(a) Non-probability sample (b) a simple random sample **(c) a stratified random sample** (d) systematic random sample

10) Errors in sampling are of _____.

(a) Two types (b) three types (c) four types (d) five types

11) The method of obtaining the most likely value of the population parameter using statistic is called _____.

(a) estimation (b) estimator (c) biased estimate (d) standard error.

12) An estimator is a sample statistic used to estimate a _____.

(a) population parameter (b) biased estimate (c) sample size (d) census

13) _____ is a relative property, which states that one estimator is efficient relative to another.

(a) efficiency (b) sufficiency (c) unbiased (d) consistency

14) If probability $P[|\hat{\theta} - \theta| < \varepsilon] \to 1$ as $n \to \infty$, for any positive ε then $\hat{\theta}$ is said to _____ estimator of θ.

(a) efficient (b) sufficient (c) unbiased **(d) consistent**

15) An estimator is said to be _____ if it contains all the information in the data about the parameter it estimates.
(a) efficient **(b) sufficient** (c) unbiased (d) consistent

16) An estimate of a population parameter given by two numbers between which the parameter would be expected to lie is called an.....interval estimate of the parameter.

(a) point estimate **(b) interval estimation** (c) standard error (d) confidence

17) A _____ is a statement or an assertion about the population parameter.

(a) hypothesis (b) statistic (c) sample (d) census

18) Type I error is _____.

(a) Accept H_0 when it is true (b) Accept H_0 when it is false **(c) Reject H_0 when it is true** (d) Reject H_0 when it is false.

19) Type II error is _____.

(a) Accept H_0 when it is wrong (b) Accept H_0 when it is true (c) Reject H_0 when it is true
(d) Reject H_0 when it is false

20) The standard error of sample mean is _____.

(a) $\frac{\sigma}{\sqrt{2n}}$ (b) $\frac{\sigma}{n}$ **(c)** $\frac{\sigma}{\sqrt{n}}$ (d) $\frac{\sigma^2}{\sqrt{n}}$

21) The number of ways in which one can select 2 customers out of 10 customers is _____

(a) 90 (b) 60 **(c) 45** (d) 50

22) The standard error of the sample mean is _____

(a) Type I error (b) Type II error **(c) Standard deviation of the sampling distribution of the mean**
(d) Variance of the sampling distribution of the mean.

23) Which of the following statements is true?

(a) point estimate gives a range of value (b) sampling is done only to estimate a statistic
(c) sampling is done to estimate the population parameter (d) sampling is not possible for an infinite population

24) If a random sample of size 64 is taken from a population whose standard deviation is 32, then the standard error of the mean is _____

(a) 0.5 (b) 2 **(c) 4** (d) 32

25) The mean I.Q. of a sample of 1600 children was 99. It is likely that this was a r.sample from a population with mean I.Q. 100 and S.D 15^2 Then the value of Z is _____

(a) -2.667 (b) 2.667 (c) 1.96 (d) 2.58

26) Out of 1000 T.V viewers, 320 watched a particular programme. Then the standard error is _____

(a) -0.147 (b) 0.147 **(c) 0.0147** (d) -0.0147

27) A sample of 100 students are drawn from 1550 student of a school. The mean weight and variance of the sample are 67.45 kg and 9 kg. Then the standard error is _____

(a) .3 (b) .9 (c) .6745 (d) 6.745

28) The point estimate mean of the following data is _____.
21.1, 25.0, 20.0, 16.0, 12.0, 10.0, 17.0, 18.0, 13.0,11.0

(a) 16.3 (b) 13.6 (c) 21.21 (d) 212:10

29) The point estimate variance of 21, 25, 20, 16, 12, 10, 17, 18, 13 and 11 is _____

(a) 23.5 (b) 2.35 (c) 4.85 (d) 48.5

30) The point estimate means of 6.33, 6.37, 6.36, 6.32, 6.37 is _____

(a) 6.33 (b) 6.36 **(c) 6.35** (d) 6.37

31) The point estimate variance of 6.33, 6.37, 6.36, 6.32, 6.37 is

(a) 0.0022 **(b) 0.00055** (c) 0.0055 (d) 0.055

32) There are _____ branches of statistical inference.

(a) 1 **(b) 2** (c) 3 (d) 4

33) An _____ is a specific observed value of a statistic

(a) Estimation (b) Estimator **(c) Estimate** (d) Testing of hypothesis

34) If α is the level of significance. then the confidence Co-efficient is

(a) α (b) 1 **(c) 1-α** (d) 1+α

35) Any hypothesis which is complementary to the null hypothesis is _____ hypothesis.

(a) Null **(b) Alternative** (c) Statistical (d) testing

36) The Z value that is used to establish in 95% confidence interval for the estimation of population parameter is _____

(a) 1.28 (b) 1.65 **(c) 1.96** (d) 2.58

37) Probability of rejecting null hypothesis when it is true is _____

(a) Type I error (b) Type II error (c) Sampling error (d) Standard error

38) Choose the odd man out

(a) Point estimate gives a range of values (b) Sampling is done only to estimate a statistic

(c) Sampling is done to estimate the population parameter. (d) Sampling is not possible for an infinite population.

39) The number of ways in which one can select 2 customers out of 10 customers is _____

(a) 90 (b) 60 **(c) 45** (d) 50

40) For a systematic random sampling, the sample interval k = _____

(a) $\frac{N}{n}$ (b) $\frac{n}{N}$ (c) $\frac{1}{n}$ (d) $\frac{1}{N}$

41) In a systematic random sampling, if we want to select a sample of 10 students frorn a class of 100 students then k = _____

(a) 10 (b) $\frac{1}{10}$ (c) 100 (d) $\frac{1}{100}$

42) The critical region at 5% level is _____

(a) $|Z| \geq 1.96$ (b) $|Z| < 1.96$ (c) $|Z| \geq 2.58$ (d) $|Z| < 2.58$

43) An estimate of a population parameter given by a single number is _____

(a) Point estimation (b) Interval estimate (c) Consistency (d) None of these

44) Standard error of the sample mean is _____

(a) σ^2 (b) $\frac{\sigma}{n}$ **(c)** $\frac{\sigma}{\sqrt{n}}$ (d) $\frac{\sqrt{n}}{\sigma}$

45) Critical region of a test is _____

(a) rejection region (b) acceptance region (c) sample space (d) subset of the sample space

46) When H, is a one sided (tight) alternative hypothesis, the critical region is determined by _____

(a) Both righr and left tails (b) Neither right nor left tail **(c) right tail** (d) left tail

47) Critical value at 5% level of significance for two tailed test is _____

(a) 1.645 (b) 2.33 (c) 2.58 **(d) 1.96**

48) For listing $H_0, \mu = \mu_0$ against $H_1 = \mu < \mu_0$ what is the critical value at $\alpha = 0.01$ _____

(a) 1.645 (b) -1.645 **(c) -2.33** (d) 2.33

49) The Hypothesis testing problem H_0:μ_0 = 45 against HI: μ0< 45 be categorized as _____

(a) left tailed (b) right tailed (c) two tailed (d) None of these

50) What is the standard error of the sample proportion under H_0?

(a) $\sqrt{\frac{PQ}{n}}$ (b) $\sqrt{\frac{pq}{n}}$ (c) $\frac{PQ}{n}$ (d) $\frac{pq}{n}$