STA301-PROBABILITY

SOLVED MCQS FROM FINAL TERMS PAPERS

SOLVED BY JUNAID MALIK AND TEAM



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ALL answers are verified if found any mistake then Correct ACCORDINGLY

Q1: The marginal p.d.f of any continuous variable of obtained by ……...

- Averaging
- Integrating
- Multiplying
- Dividing

Q2: in a normal distribution how area lies between $\mu \pm \sigma$

- 65%
- 68.26%
- 75%
- 80%

Q3: A correlation coeffient

- Tells you the direction of the slope of the scttergram
- Is a sort of index how of close the point of a scatter gram deviated from straight line through those points.
- Efficiently summaries some of the in scatterplot.
- All of these

Q4: The values of moment ratios b1 and b2 of normal distribution are:

- 0 and 1
- 0 and 2
- O and3
- 0 and 4

Q5: which of the following is not a property of a binomial experiment?

- The experiment consists of a sequence of an identical trials
- Each outcome can be referred to as a success or a failure

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- The probabilities of the two outcomes can change from one trial to the next.
- All of the above

Q6: we can obtain the individual probabilities of X and Y from the joint probability function / distribution of (x, y) such individual probabilities are kown as

- Marginal probabilities
- Bivariate probabilities
- Separate probabilities
- Independent probabilities

Q7: Assume a large distribution in which 6 = 6. What is the standard error of the the mean based for which n = 10?

- 167
- 15
- 3
- 1.9

Q8: In a bivariate probability distribution of X and Y,

If f(1, 1)= 4/15, g (1) =2/3 , h(1)=2/5

Then

- X and Y are statistically independent
- X and y are not statistically independent
- Both of these
- None of these

Q9: In hyper geometric distribution events can be classified in to

- A single category
- 2 categories
- 3 categories
- 4 categories

Q10: In binomial distribution, formula of calculating mean is:

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- $\mu = p + q$
- $\mu = np$
- $\mu = p\ q$
- $\mu = q\ n$

Q11: which of the following is not a property of binomial experiment?

- The experiment consists of a sequence of n identical trials
- Each outcome can be referred to as a success or a failure
- The probabilities of the outcomes can can change from on trial to the next
- All of the above

Q12: Poisson distribution can be used to approximate the hyper geo metric distribution when , n<0.05, n>20 and

- P>0.05
- P<0.05
- P>0.10
- P<0.10

Q13: the hypergeomertric probability distribution has parameters.

- N, n
- N, P, n
- N, n, k
- N, N- k, n

Q14: A random experiment is one is a one in which we repeat it a large number of times under similar condition an it produces.

- Same result
- Different result
- Independent result
- None of the above

Q15: Given below is the probability distribution of a random variable X, what is the value of "K"

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X	0	1	2	3	4
P(x)	0.5	0.2	0.07	k	0.03

- 0.02
- 0.1
- 0.20
- 0.002

Q16: Poisson distribution is never:

- Symmetrical
- Positively skewed
- Negatively skewed
- Asymmetrical

Q17: if X and Y are independent, then Cov (X, y) is equal to:

- 0
- 1
- 0 and 1
- None

Q18: if E(x) = 3 then E (4X + 3)=……..

- 15
- 12
- 8
- 3

Q19: Which of the following is not a requirement of a binomial distribution?

- A constant probability of success
- Only two possible outcomes
- A fixed number of trials
- Equally likely outcomes

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Q20: which of the following is the requirement of a uniform distribution?

- A constant probability of success
- Only two possible outcomes
- A fixed number of trials
- Equally likely outcomes

Q21: if we are testing H0 : mean = 250 against

H1 : mean > 250 (exceeds 250) . Then Rejection region will be

- In the center
- On both sides of mean
- On left side of mean
- On right side of mean

Q22: Suppose H0: u 1< u 1 H1 :u 1 > u 2 and critical value is value = 1.645 if calculated value of Z = 1.88 then what will be your conclusion?

- Accept Ho
- Reject Ho
- Impossible to decide
- None of the above

Q23: The t-distribution can never become narrower than:

- F-distribution
- Standard normal distribution
- Chi-square distribution
- Exponential distribution

Q24: t-distribution can be used to find the confidence interval for:

- Population variance
- Population mean
- Difference between population proportions
- Populating proportion

Q25: which one the following provides the basis for hypothesis testing?

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- Null hypothesis
- Alternative hypothesis
- Critical value
- Test – statistic

Q26: for test hypothesis Ho $\mu 1 = \mu 2$ and H1: $\mu 1 < \mu 2$, the critical region at 0.05 level of significance and n>30

- Z less and equal 1.96
- Z > 1.96
- Z > 1.645
- Z<-1.645

Q27: Alpha is the probability of……..

- Making type I error
- Making Type II error
- Accepting Ho when it is true
- Rejecting H1 when it is wrong

Q28: The test statistic to test the U1 = U2 (U represent the mean of population normal population when n > 30.

- Z- test
- T – test
- F – test
- All of above

Q29: Suppose that the workers of factory B belives that the average income that the average income of the workers of factory A exceed that average income the null hypothesis will be

- MeanA > MeanB
- MeanA $\supseteq$ MeanB
- MeanA< MeanB
- MeanA $\subseteq$ MeanB

Q30: which of the following statement is NOT true?

- The t distribution is Symmetric about Zero

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- The t distribution is more spread out than the standard normal distribution
- As the degrees of freedom get smaller , the t-distributions dispersion get smaller
- The t distribution is mound - shaped

Q31: A-------- is a range of number inferred from the sample that sample that has a certain probability of including the population parameter over the long run.

- Hypothesis
- Lower limit
- Confidence interval
- Probability limit

Q32: The proportion of cigarette smokers in Pakistan is greater than 20% , the null hypothesis Hois,

- $P < 0.20$
- $P \neq 0.20$
- $P \subseteq 0.20$
- $P > 0.20$

Q33: A null hypothesis is generally denotes by:

- H0
- H1
- H2
- H3

Q34: A deserving player was not selected in the cricket team .it is an example of

- Type-I error
- Type – II error
- Type – III error
- Type – Iv error

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Q35: As sample size goes up, what tends to happen to 95 %confidence interval?

- They become wider
- They become more precise
- They become more precise and narrow
- They become more narrow

Q36: to determine a simple size which test lest we use------

- Z
- I
- F
- None these

Q37: How can we interpret 90% confidence interval for the mean of the normal population?

- There are 10 % chances of falling true value of the parameter
- There are 90%cahnces of falling true value of the parameter
- There are 100 chances of falling true value of the parameter
- All are correct

Q38: for the smaller values of v, the t distribution will be ------than the standard normal distribution.

- Less spread out
- More spread out
- Same length
- None of these

Q39: if we are testing HO : mean = 50 against

H1 : mean < 50 then rejection region will be

- In the center
- On left side of mean
- On right side of mean
- On both side

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Q40: if we are testing HO : p1 < P2 (0r) p1 – p2 <0 against H1 : p1> P2(or) p1- p2 > 0 and the tabulated of Z= 1.645 and Z Calculated value = 2.63 then what will be conclusion\end {gathered}\]

- Reject Ho
- Accept HO
- None of the above
- Impossible to decide

Q41: In Binomial distribution the sample size is considered to be sufficiently large, if both np and nq are greater than or equal to

- 3
- 5
- 10
- 15

Q42: if the NULL hypothesis says that the average height of Pakistani soldiers exceeds the average height of American solider but not more than 3 inches. What will be it's ALTERNATIY hypothesis?

- P > 3
- P<3
- P= 3
- None of this

Q43 : the critical region is computed from the value of .

- Alpha
- Beta
- 1 – Alpha
- 1 - beta

Q44: To the test hypothesis about the difference of means for large simple , what test statistics will be used?

- Chi- square
- F
- Z
- T

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Q45: When we start hypothesis testing, we always assume that:

- HO is true
- HO is false
- H1 is true
- All are correct

Q46: to test hypothesis about the different of means for small samples, test statistics will be used:

- F- test
- Z- test
- T-test
- All of these

Q47: ideally, the width of confidence interval should be:

- 0
- 1
- 98
- 100

Q48: conventionally, the probability of making a type- I error is denoted by which of following Symbol?

- ?(theta)
- A(Alpha)
- B(beta)
- S(sigma)

Q49: in a random sample of 500 men from Lahore city, 300 are found to smoker ; the proportion of smoker is equal to:

- 0.3
- 0.4
- 0.6
- 0.5

Q50: if we are testing HO : P1 – p2= 120 against H1 : P1 – P2 > 120 (exceeds 120) then rejection region:

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- In Center
- On right side Z= 0
- On left side Z=0
- Both side Z= 0

Q51: In testing HO: μ = 100 against HI: μ ≤ 100 at the 10% level of significance, HO is rejected if:

- The p-value is greater than 0.10
- The p-value is less than 0.10
- 100 is contained in the 90% confidence interval
- The value of the test is static in the acceptance region

Q52: In the method of moments, how many equations are required for finding two unknown

- 2
- 4
- 1
- 3

Q53: To determine a sample size in estimating population mean, we use the _____ value.

- X
- Z
- F
- T

Q54: The method of maximum likelihood (ML) is used to find out:

- Random numbers

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- Sample values
- Point estimates
- Correlation coefficient

Q55: Alpha is the probability of ……

- Making type I error
- Accepting HO when it is true
- Rejecting HI when it is wrong
- Making type II error

Q56: It is the probability of:

- Accept HO_I HO is true
- Reject HO_I HO is true
- Accept HO_I HO is false
- Reject HO_I HO is true

Q57: In interval estimation we obtained a ……. of values as an estimate of parameter.

- Both a and b
- Range
- Group
- None of these

Q58: We can apply method of Maximum likelihood on:

- Qualitative variables only
- Discrete variables only

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- Discrete as well as continuous variables
- Continuous variables only

Q59: Inferential statistics involves:

- Testing of hypothesis
- All of these
- Confidence interval
- Estimation

Q60: Ideally, the width of confidence interval should be

- 98
- I
- 100
- 0

Q61: Sample proportion is a/an _____ estimator of population mean.

- Consistent
- Unbiased
- Unbiased and consistent estimator
- None of these

Q62: If var (TI) > Var (T2), where TI and T2 are two unbiased estimators, then:

- TI is more consistent
- T2 is more consistent
- TI is more efficient

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- T2 is more efficient

Q63: The confidence interval become wide and less precise by

- None of these
- Increasing the sample size
- Decreasing the level of significance
- Decreasing the sample size (by increasing the sample size the confidence interval become more precise)

Q64: From which of the following methods we can obtain point estimate of the population parameters:

- Al of the above
- Maximum likelihood method
- Method of moments
- Method of least squares

Q65: A confidence interval has a specified probability _____ of containing the true value of parameter.

- 1-α
- α/2
- α
- 1+ α

Q66: _____ are equivalent.

- Type-II error and level of confidence
- Type-I error and level of significance
- Type-II error and level of significance

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- Type-I error and level of confidence

Q67: In a geometric distribution, maximum likelihood estimator (MLE) for proportion (P) is equal to:

- Sample variance
- Sample mean
- Reciprocal of the sample variance
- Reciprocal of the mean

Q68: Internal estimation and Confidence interval are:

- Different
- Independent
- Dependent
- Same

Q69: "A failed student was passed by the examiner", is an example of:

- Type-I error
- Type-IV error
- Type-III error
- Type-II error

Q70: A confidence interval has a specified probability _____ of containing the true value of parameter.

- a
- a/2
- 1+a
- 1-a

Q71: When sample size is to be considered large, population standard deviation can be replaced by

- Sample variance

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- Sample Mean
- Population variance
- Sample Standard Deviation

Q72: As sample size goes up, what tends to happen to 95% confidence intervals?

- They become more narrow
- They become more precise and narrow
- They become more precise
- They become wider

Q73: An industrial designer wants to determine the average amount of time it takes an adult to assemble an "easy to assemble" toy. A sample of 16 times yielded an average time of 19.92 minutes, with a population standard deviation equal to 5.73 assuming normality of assembly times. What is a 95%.

- (14.1123,22.7277)
- (17.1123,24.7277)
- (17.1123,22.7277)
- (17.1123,30.7277)

Q74: Suppose that the worker of factory b believes that the average income of the worker of factory A exceed their average income, the hypothesis will be:

- Mean A > Mean B
- Mean A ≥ Mean B
- Mean A < Mean B
- Mean A ≤Mean B

Q75: β is the probability of:

a) Reject HO/HO is true
b) Reject HO/HO is false
c) Accept HO/HO is false
d) Accept HO/HO is true

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Q76: An estimator is said to be efficient if it has:

a) Smallest variance
b) Unbiased variance
c) Both (a & b)
d) None of these

Q77: Conventionally, the probability of making a type-1 error is denoted by which of the following symbol?

a) S(sigma)
b) β(beta)
c) ? (theta)
d) a(alpha)

Q78: The end points that bound the confidence interval are called:

a) Lower limit
b) Bounded limit
c) Lower and upper limits
d) Upper limits

Q79: An estimator is said to be ____if its expected value is equal to true value of its parameter.

a) Efficient
b) Consistent
c) Biased
d) un Biased

Q80: The width of the interval is called ____of the estimate.

a) Biased
b) Accuracy
c) Precision
d) Unbiasedness

Q81: If we draw a sample of size "n" from a population then sample is called "large sample"it.

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a) n>40
b) n>30
c) n>50
d) n>25

Q82: The method of maximum likelihood (ML) is used to find out:

a) point estimates
b) random number
c) correlation coefficient
d) sample value

Q83: The precision of an estimates can be increased by increasing the:

a) sample value
b) size of population
c) number of parameters
d) size of sample

Q84: which of the following is most important and widely used methods in point estimates?

a) The method of least squares
b) The method of moments
c) The method of maximum likelihood
d) sample value

Q85: In a random sample of 500 men from Lahore city, 300 are found to be smokers: the proportion of smokers is equal to

a. 0.6
b. 0.3
c. 0.5
d. 0.4

Q86: An experiment was conducted to estimate the mean yield of a new variety of wheat. A sample of 20 plots gave a mean yield of 2.9 and a 95% confidence of (2.48, 3.32).

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a. None of these
b. We are sure the mean yield of this new Varity is between 2.48and 3.32
c. We are 95% confidence that the true mean yield of this is 2.6
d. We are 95% confident the true mean valid of this variety is between 2.48 and 3.32

Q87: A …….. Is a range of number is inferred from the sample that has a certain probility of including the population parameter over the long run.

a. Hypotheses
b. Lower limit
c. Confidence interval
d. Probability limit

Q88: To determine a sample size which test we use……

a. t
b. F
c. None of these
d. z

Q90: A statistic whose standard error decreases with an increase in the sample size will be…

a. consistent
b. unbiased
c. efficient
d. none

Q91: A deserving player was not in the cricket team . it is an example of:

a. type111error
b. type-1 error
c. type-iv error
d. type-111 error

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Q92: Ina geometric distribution, maximum likelihood estimator for proportion (P) is equal to:

a. sample variance
b. reciprocal of the mean
c. reciprocal of the mean variance
d. sample mean

Q93: The precision of an estimator can be increased by decreasing the:

a. level of significance
b. number of estimators
c. number of parameters
d. size of sample

Q94: Conventionally, he probability of making a type-error is denoted by:

a. beta
b. theta
c. alpha
d. sigma

Q95: A statistic whose standard error decreases with an increase in the sample size will be …….

a. Efficient
b.None
c.Unblance
d.consistant

Q96: Sample mean is a ……..estimate of population mean.

a. Biased
b. None of these
c. Unbiased
d. Either unbiased or based

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Q97: If we draw a sample of size 'n' from a population then sample is called 'large sample' if;

a. N>30
b. N>501
c. N>40
d. N>25

98: When sample size is to be considered large population standard deviation can be replaced by

- Population variance
- Sample variance
- Sample mean
- Sample standard derivation

Q99: Suppose that the worker of factory B believe that the average income of the worker of factory A exceeds their average income the hypothesis will be

- MeanA>MeanB
- MeanA>/MeanB
- MeanA<MeanB
- MeanA</MeanB

Q100: For particular hypothesis test alpha = 0.09 and beta = 0.03 what is the value of type of error

- 0.09
- 0.91
- 0.03
- 0.97

Q101: Suppose H0:u1<u2 H1:u1.u2 and critical value is = 1.645if calculated value of z= 1.88then what will be your

- Accept Ho
- Reject HO
- Impossible to decide
- None of the above

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Q102: Suppose H0: p=0 H1:p,0 and critical value is Z=2.33if calculate the value of Z=-2.60 then what will be your calculation

- Accept Ho
- Reject HO
- Impossible to decide
- None of the above

Q102: If the null hypothesis is that the the average height of Pakistan soldiers exceed the average height of American soldiers by more than 3 inches what will it's alternative hypothesis

- p>3
- p<3
- P=3
- None of the above

Q103: Pairing is done only in case of ….. observation

- Dependent
- Independent
- Small
- Large

Q104: The critical region is computed from the value of

- alpha
- Beta
- 1-Alpha
- 2-Beta

Q105: When examining group difference where not direction of the difference is specified which of the following is used

- one tail test
- Two tail test
- Directional hypothesis
- Difference of mode test

Q106: If we traveling at H0 :mean = 50 against

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H1: mean<50 then the rejection region will be

- In the center
- On left side of mean
- On right side of Mean
- On both sides

Q107: If our significance level of 5% is used rather than 1% the null hypothesis is

- Less likely to be rejected
- Just as likely to be rejected
- More likely to be rejected
- None of these

Q108: How can we interrupt our 90% confidence interval for the mean of the normal population

- There is 10% chance of falling true value of the parameter
- There are 90% Johns are falling true value of the perimeter
- There are 100 chance of finding true value of parameter
- All are correct

Q109: When examining group difference where no direction of the difference is specified which of the following is used

- One tailed test
- Two tailed test
- Directional hypothesis
- Difference of mode test

Q110: T distribution can never become narrower then

- F distribution
- Standard normal distribution
- Chi-Square distribution
- Exponential distribution

Q111: The term 1-beta is called

- Level of the test

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- Power of the test
- Size of the test
- Critical region

Q112: The T test for independent sample assume which of the following

- Score are independent
- Scorer dependent
- Groups have equal medians
- Alpha is the probability of

Q113: The level of significance is also called

- Power of test
- Type II error
- Type I letter
- Acceptance region

Q114: For a sample p1=0.2,n1=100 and for second sample p2 =0.5 and n2=200the pooled estimator pc is

- 0.30
- 0.45
- 0.40
- 0.35

Q115: The location of the critical region depends upon

- Null hypothesis
- Alternative hypothesis
- Value of alpha

Q116: Meaning of T distribution will not exist when D.F will equal to

- 1
- 2
- 3
- 4

Q117: Which of the following is not a criterion for a good problem situation?

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- It must be authentic
- It must be clearly structured and defined
- It must be dearly structured and defined
- It must be appropriate to student of development

Q118: To test a hypothesis about the difference of mean for small samples with test statistic sticks will be used

- z- test
- t-test
- F-test
- All of these

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