

ECO254 List of Questions

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Q1 Hypotheses are formulated and different types of statistical tests are carried out in order to make a reasonable decision but some errors are committed in the quest for taking a good _____

- ☐ calculation
- ☐ decision
- ☐ analysis
- ☐ All of the above

Q2 _____ distribution has been applied to model the behavior of random variables limited to intervals of finite length in a wide variety of disciplines

- ☐ beta
- ☐ alpha
- ☐ mass
- ☐ unit

Q3 The standard deviation of the sampling distribution is known as the standard

- ☐ deviation
- ☐ unit
- ☐ error
- ☐ None of the above

Q4 In statistics, data is collected from a carefully selected sample from the _____

- ☐ population
- ☐ people
- ☐ public
- ☐ All of the above

Q5 Confidence interval is used to determine all reasonably likely values of the difference between two _____ means

- ☐ sample size
- ☐ population
- ☐ sample
- ☐ None of the above

Q6 _____ explains how to conduct a hypothesis test for the difference between two means

- ☐ difference of two mean
- ☐ difference of one mean
- ☐ difference of two median
- ☐ None of the above

Q7 A discrete probability distribution shall be understood as a probability distribution characterized by a probability _____ function

- ☐ uniform
- ☐ unit
- ☐ mass
- ☐ All of the above

Q8 A probability distribution assigns a probability to each measurable subset of the possible outcomes of a random experiment, survey, or procedure of _____

- ☐ statistical inference
- ☐ variables
- ☐ mean
- ☐ median

Q9 In hypothesis testing, if the sample that is being tested falls into the one-sided critical area, the _____ will be accepted instead of the _____

- ☐ alternative hypothesis
- ☐ alternative hypothesis
- ☐ null hypothesis
- ☐ None of the above

Q10 In hypothesis testing, the best way to reduce type 1 and type 2 error is to increase the _____

- ☐ type one error
- ☐ type two error
- ☐ sample size
- ☐ error

Q11 Hypothesis may be directional or _____

- ☐ non-directional
- ☐ negative
- ☐ non probability
- ☐ district

Q12 Uniform distribution can be seen as a statistical distribution in which every possible outcome has an equal chance, or likelihood, of occurring _____ out of the total number of outcomes

- ☐ 2
- ☐ 1
- ☐ 3
- ☐ 4

Q13 A company short-lists 4 applicants for an interview out of which 2 are men. If there are only one vacant posts to be filled, find the probability that the list of successful applicant is a woman

- ☐ 3
- ☐ 8
- ☐ 2
- ☐ None of the above

Q14 Discrete random variables is the probabilities that sum to 1, and for continuous random variables the equivalent of this is the area under the probability density function being equal

- ☐ 2
- ☐ 4
- ☐ 8
- ☐ 1

Q15 Probability distributions show the distributions of _____ associated with values or ranges of a random variable

- ☐ probabilities
- ☐ test
- ☐ variable
- ☐ All of the above

Q16 Probabilities associated with individual values of x cannot be negative or greater than 1 since this has no

- ☐ variable
- ☐ meaning
- ☐ calculation
- ☐ None of the above

Q17 A _____ of cards has a uniform distribution because the likelihood of drawing a heart, a club, a diamond or spade is equally likely

- ☐ deck
- ☐ single
- ☐ uniform
- ☐ sets

Q18 Multinomial distribution is an equation that is in general term in a multinomial _____

- ☐ equation
- ☐ unit
- ☐ test
- ☐ None of the above

Q19 _____ test is a statistical test in which the test statistics has t and z distribution under a null hypothesis situation

- ☐ F
- ☐ Z
- ☐ T
- ☐ Chi square

Q20 Continuous probability distribution must possess a _____ or equivalently, its cumulative distribution function should be absolutely continuous

- ☐ density
- ☐ population
- ☐ unit
- ☐ All of the above

Q21 Given the following score of student in advanced mathematical economics: 22, 33, 44, 11, 77, 88, 22, 13, 14, 21, 23, 34, 27, 21, 10, 20, 22, 11, 17, 11, 22, 18, and 22. What is the mode of the score?

- ☐ 21
- ☐ 23
- ☐ 11
- ☐ None of the above

Q22 If a fair dice is thrown once, what is the probability of obtaining a head?

- ☐ 7
- ☐ 8
- ☐ 9
- ☐ None of the above

Q23 _____ measure is the standard way of assigning a measure to a subsets of an n-dimensional volume

- ☐ standard deviation
- ☐ mean deviation
- ☐ z test
- ☐ Lebesgue

Q24 Regression coefficients represent the mean change in the response variable for one unit of change in the _____ variable while holding other predictors in the model constant

- ☐ modelling
- ☐ unit
- ☐ predictor
- ☐ All of the above

Q25 The P-values for each term tests the null hypothesis that the coefficient is equal to _____

- ☐ one
- ☐ two
- ☐ zero
- ☐ three

Q26 Regression analysis generates an _____ to describe the statistical relationship between one or more predictor variables and response variables

- ☐ figure
- ☐ units
- ☐ variables
- ☐ equation

Q27 Application of Simple Linear regression analysis is the way by which we subject different data to statistical analysis by using computer _____

- ☐ computer
- ☐ uses
- ☐ software
- ☐ analysis

Q28 If the goal is prediction or forecasting or deduction, linear regression can be used to fit a predictive model to an observed data set of y and x values and after developing such a

- ☐ model
- ☐ prediction
- ☐ forecasting
- ☐ data

Q29 Linear regression could be a model in which the median, or some other quantile of the conditional _____ of y is given x is expressed as a linear function of x

- ☐ distribution

- ☐ units
- ☐ uses
- ☐ None of the above

Q30 In statistics, ____ is an approach for modelling the relationship between a scalar dependent variable y and one or more explanatory variables denoted x

- ☐ linear regression
- ☐ multiple regression
- ☐ probability distribution
- ☐ test distribution

Q31 Regression analysis is also used for prediction for future planning and however with little effects or questions of causality based on observational ____

- ☐ data
- ☐ method
- ☐ effects
- ☐ variables

Q32 The non-parametric regression means the techniques that allow the regression function to lie in a specified set of functions, which may be ____ dimensional

- ☐ infinite
- ☐ finite
- ☐ variables
- ☐ discrete

Q33 Different techniques are used in carrying out the regression analysis and such method such as linear regression and ordinary least squares regression are ____

- ☐ equation
- ☐ parametric
- ☐ variables
- ☐ straight line

Q34 Regression analysis is used in ____ relationship between a linear model that is between the dependent variable to an independent variables

- ☐ direct
- ☐ causal
- ☐ indirect
- ☐ All of the above

Q35 Regression analysis is used to know which of the independent variables are closely related to the dependent variable and to establish the form of these relationship whether ____ relationship or negative relationship

- ☐ inverse
- ☐ positive
- ☐ negative
- ☐ independent

Q36 ____ analysis is widely used for prediction and forecasting

- ☐ t test
- ☐ regression
- ☐ z test
- ☐ chi square

Q37 The term ____ was introduced by Francis Galton

- ☐ statistics
- ☐ regression
- ☐ probability
- ☐ chi square

Q38 Adejoke Uthman Company prints baseball cards. The company claims that 40% of the cards are rookies, 70% veterans, and 20% are All-Stars. Suppose a random sample of 200 cards has 70 rookies, 75 veterans, and 10 All-Stars. Test the claim at 0.05 level of significance.

- ☐ 0.4
- ☐ 0.9

- ☐ 0.1
- ☐ None of the above

Q39 Given a population consisting of numbers 7, 4, 9, 11, 23, 12. The mean of the population is

- ☐ 23
- ☐ 11
- ☐ 14
- ☐ All of the above

Q40 The mean mark of students in statistics for Economics test is 47 with standard deviation of 22. If samples consisting of 42 students each are obtained from the students population of 7000. Calculate the standard deviation of the sampling distribution of mean if sampling is done with replacement

- ☐ 41
- ☐ 21
- ☐ 17
- ☐ None of the above

Q41 A doctor claims that the mean weight of babies delivered at her hospital is 5.4kg. A Statistician takes a sample of 12 babies and obtains the following weights: 1.3, 1.1, 1.2, 2.1, 4.2, 0.2, 1.3, 3.1, 2.2, 5.2. Test the doctor's claim at 95% level of significance.

- ☐ 0.32
- ☐ 0.22
- ☐ 0.41
- ☐ None of the above

Q42 In quality control, one might demand that the probability of a 700g package containing between 410g and 320g should not be less than

- ☐ 0.2
- ☐ 0.4
- ☐ 0.28
- ☐ None of the above

Q43 Given $Q = a_0 + a_1X_1 + a_2X_2$. The independent variable is

- ☐ Q
- ☐ a_0
- ☐ a_1
- ☐ None of the above

Q44 Given $Q = a_0 + a_1X_1 + a_2X_2$. The dependent variable is

- ☐ X_1
- ☐ Q
- ☐ X_2
- ☐ a_0

Q45 Given $Q = a_0 + a_1X_1 + a_2X_2$. The equation above is an example of

- ☐ simple regression
- ☐ multiple regression
- ☐ multiple equation
- ☐ simple equation

Q46 A Company short lists 10 applicants for an interview out of which 6 are men. If there are only seven vacant posts to be filled, find the probability that the list of successful applicant contains all women

- ☐ 0.78
- ☐ 0.32
- ☐ 0.88
- ☐ None of the above

Q47 Three out of the 10 finalists in an African American beauty competition are Nigerians. If 4 winners are to be selected, find the probability that; at least one of them would be a Nigerian.

- ☐ 0.58
- ☐ 0.32
- ☐ 0.47
- ☐ None of the above

Q48 Calculate the mean of a uniform distribution given that $(a+b) = 3/133$ and $b = 7.20$ while $a = 4.20$

- ☐ 44
- ☐ 81
- ☐ 12
- ☐ None of the above

Q49 If 120 tosses are made of a fair coin, find the probability that between 22% and 72% will be heads

- ☐ 0.2
- ☐ 0.22
- ☐ 0.72
- ☐ None of the above

Q50 In a statistics examination for Agbaaya secondary students, the 22 females used in the study has a mean score of 79 and a variance of 17 while the 13 males used has a mean score of 81 and a variance of 11. Calculate the confidence intervals at 99% level of significance

- ☐ 22
- ☐ 12
- ☐ 34
- ☐ None of the above

Q51 Given $Y = a_0 + a_1X_1 + a_2X_2$. From the equation above, the independent variable is

- ☐ Y
- ☐ X_1
- ☐ X_2
- ☐ a_1

Q52 In a statistics examination for Jabi secondary students, the 18 females used in the study has a mean score of 77 and a variance of 14 while the 10 males used has a mean score of 67 and a variance of 12. Calculate the gender effect on the score of the secondary student at 99% level significance

- ☐ 88
- ☐ 12
- ☐ 39
- ☐ None of the above

Q53 In statistical analysis 95% confidence interval is also known as

- ☐ 0.01
- ☐ 0.04
- ☐ 0.05
- ☐ 0.03

Q54 In statistical analysis 99% confidence interval is also known as

- ☐ 0.1
- ☐ 0.21
- ☐ 0.01
- ☐ 0.07

Q55 Calculate the variance of uniform distribution given that $(a + b) = 1/300$ and $b = 4.80$ while $a = 2.30$

- ☐ 33
- ☐ 7
- ☐ 1
- ☐ None of the above

Q56 Discrete random variables is a random variables that we assigns a probability to each ____ value

- ☐ unit
- ☐ small
- ☐ possible
- ☐ exact

Q57 If an individual were selected at random from a large group of adult females, the probability that it has height H is precisely 48 inches would be one. What is the probability that height H is between 47.00 inches and 48.00 inches.

- ☐ 22
- ☐ 13
- ☐ 40

☐ None of the above

Q58 A type of photocopier has a paper Jam on average once every 1000 copies. What is the probability that there will be more than four jams in a 1000 copy run?

- ☐ 2
- ☐ 6
- ☐ 9
- ☐ None of the above

Q59 A Company short lists 20 applicant for an interview out of which 14 are men. If there are only five vacant posts to be filled, find the probability that the list of successful applicant contains at least 7 men

- ☐ 2
- ☐ 14
- ☐ 1
- ☐ None of the above

Q60 In a _____ when an equation is in a general term it is called Multinomial distribution

- ☐ set
- ☐ population
- ☐ multinomial expansion
- ☐ All of the above

Q61 In theory of Probability and Statistics, a probability distribution assigns a probability to each measurable subset of the possible _____ of a random experiment

- ☐ unit
- ☐ outcomes
- ☐ test
- ☐ subsets

Q62 Chocomilo Nigeria limited prints baseball cards and the company claims that 30% of the cards are rookies, 80% veterans and 10% are all stars. Suppose a random sample of 80 cards has 30 rookies, 28 veterans and 22 all stars. Using 95% level of significance, what is the claim of the company?

- ☐ 30
- ☐ 221
- ☐ 227
- ☐ None of the above

Q63 In a regression analysis, if the explanatory variable has one variable it is called

- ☐ multiple regression
- ☐ simple regression
- ☐ explanatory variable
- ☐ multivariable regression

Q64 If we are making a comparison in statistics the t test has mean and _____ of two samples

- ☐ mode
- ☐ standard deviation
- ☐ median
- ☐ None of the above

Q65 The expected frequency counts are computed separately for each population at each level of the _____ variable

- ☐ categorical
- ☐ dependents
- ☐ independent
- ☐ All of the above

Q66 _____ test is applied to a single categorical variable from two different populations

- ☐ chi-square test of homogeneity
- ☐ probability distribution
- ☐ mass function
- ☐ F test

Q67 _____ is seen as a statistical distribution in which every possible outcome has a chance

- ☐ Uniform distribution

- ☐ test
- ☐ f test
- ☐ z test

Q68 Given a population of NOUN secondary school consisting of numbers 1,2,3,4,5,6. The mean of the population is

- ☐ 4
- ☐ 2
- ☐ 7
- ☐ None of the above

Q69 In test of _____ the maximum probability of risking a type 1 error is known as the level of significance

- ☐ hypothesis
- ☐ probability
- ☐ variables
- ☐ chi square

Q70 The probability that it will rain in Abuja on Sunday is 0.9. Calculate the probability that it will not rain in Abuja on Sunday is

- ☐ subsets
- ☐ sets
- ☐ mass sets
- ☐ All of the above

Q71 The probability that it will rain in Abuja on Sunday is 0.9. Calculate the probability that it will not rain in Abuja on Sunday is

- ☐ 0.1
- ☐ 2
- ☐ 4
- ☐ 3

Q72 A _____ is inappropriate when there is heteroscedasticity in the scatter plot

- ☐ regression analysis
- ☐ dependent variable
- ☐ independent variable
- ☐ All of the above

Q73 The regression equation for predicting number of game tickets (Y) from information about football viewer age (X) is $Y = .044(X) + 4.28$. How many tickets would you predict for ten games?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ None of the above

Q74 _____ is to the mean as the SSR is to the regression line

- ☐ standard deviation
- ☐ mean
- ☐ f test
- ☐ t test

Q75 The P-value is the probability of observing a sample statistic as extreme as the _____ statistic

- ☐ test
- ☐ mean
- ☐ variable
- ☐ z test

Q76 The test statistic is a _____ random variable (X2)

- ☐ chi-square
- ☐ t test
- ☐ z test
- ☐ All of the above

Q77 The expected frequency counts at each level of the categorical variable that are equal to the sample size times the hypothesized proportion from the _____ hypothesis

- ☐ null
- ☐ double

- ☐ alternative
- ☐ opposite

Q78 The _____ of freedom (DF) is equal to the number of levels (k) of the categorical variable minus 1: $DF = k - 1$

- ☐ test
- ☐ direction
- ☐ degrees
- ☐ variable

Q79 Every hypothesis test requires the analyst to state a null hypothesis (H_0) and an _____

- ☐ alternative hypothesis
- ☐ null hypothesis
- ☐ opposite hypothesis
- ☐ None of the above

Q80 Chi-square goodness of fit test is applied when you have one categorical variable from

- ☐ single population
- ☐ group
- ☐ set
- ☐ All of the above