MATHS

BOOKS - UNITED BOOK HOUSE

HIGHER SECONDARY EXAMINATION 2018

Exercise

1. Find out the correct answer out of the options given against each question: E(x) =

4,E(y) =3,then E(xy)=

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2. Find out the correct answer out of the options given against each question : If the mean of a binomial distribution is a positive integer, then-

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3. Find out the correct answer out of the options given against each question: If p.d.f. of a random variable X is given by f(x) = 1 if -1/2 < x < 1/2. Then P(X = 0) is-

A. $\dfrac{1}{2}$

B. 0

C. 1

D. $\dfrac{1}{4}$

Answer:

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4. Find out the correct answer out of the options given against each question: If y denotes the dependent variable, x denotes the independent variable, m'denotes the slope and c denotes the intercept, then the equation of regression line is

A. $y = mc + x$

B. $y = mx + c$

C. $x = mc + y$

D. $y = m + cx.$

Answer:

5. Find out the correct answer out of the options given against each question: Regression coefficient is independent of change of

A. scale

B. origin

C. neither scale nor origin

D. both scale and origin

Answer:

6. Find the probability that a leap year selected at random will contain 53 Mondays.

7. Find out the correct answer out of the options given against each question : If the mean of a binomial distribution is a positive integer, then-

A. 0.25

B. 0.5

C. 0.75

D. 1

Answer:

8. Find out the correct answer out of the options given against each question: Rejectying H_0, when it is true, is-

    A. Type-I error

    B. Type-II error

    C. Correct decision

    D. Power.

Answer:

9. Find out the correct answer out of the options given against each question: Total number of possible samples of size 3 each drawn by SRSWR from a population of 10 members is-

A. 100

B. 10

C. 1000

D. 3^{10}

Answer:

10. Find out the correct answer out of the options given against each question: In testing of hypothesis with level of significance α, the probability of type-I error is-

A. $> \alpha$

B. $\leq \alpha$

C. $> 100\alpha$

D. $\leq 100\alpha$

Answer:

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11. Answer the following questions : What are the basic principles of sample survey?

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12. Answer the following questions :What are the properties of a good estimator?

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13. Answer the following questions : What do you mean by Power of A test?

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14. Answer the following questions : Show that Normal distribution is symmetric about mean.

15. Answer the following questions :If for a bimodal Poisson distribution modes are 5 and 6, then find μ_3.

16. Answer the following questions : Draw all possible samples of size 2 from a population containing the units (a, b, c, d) without replacement.

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17. Answer the following questions : What is Standard error?

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18. Answer the following questions : What do you mean by point estimation of a parameter?

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19. Answer the following questions : Give two examples of Control chart for attributes.

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20. Answer the following questions :What do you mean by trend for time series analysis?

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21. Answer the following questions : Write down two demerits of determining trend by moving average method.

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22. Answer the following questions : If for a random variable X, $E(X-1)^2 = 10$ and $E(X-2)^2 = 6$, find var(X).

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23. 30th term of the AP: 10, 7, 4, ..., is

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24. Answer the following questions: What is meant by bias?

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25. Answer the following questions: If the correlation coefficient between x and y be 0.8, determine the correlation coefficient between x and 5 - 3y.

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26. Answer the following questions : Write a note on Scatter diagram.

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27. Answer the following questions : Under which condition a probability model is said to be binomial?

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28. Which term of the AP: 3, 8, 13, 18, ..., is 78?

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29. Answer the following questions in short: In case of perfect disagreement show that spearman's Rank correla tion coefficient is equal to - 1.

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30. A picnic is arranged to be held on a particular day. The weather forecast says that there is 80% chance of rain on that day. If it rains, the probability of a good picnic is 0.3, and if it does not, the probability is 0.9. What is the probability that the picnic will be good ?

31. Let f(x) be a polynomial satisfying f(0)=2, f'(0)=3 and f''(x)=f(x).

Answer the following the question based on above passage:

f(x) is given by

32. Answer the following questions : If m things are distributed among a men and women, show that the probability of receiving odd number of things by 'men is

$$\frac{1}{2}\left[\frac{(b+a)^m - (b-a)^m}{(b+a)^m}\right].$$

33. Answer the following questions : Mention, appropriate conditions, show that Poisson distribution limiting form of Binomial distribution.

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34. 11th term of the AP: -3, −12 , -21, ..., is

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35. If $m(>n)$ and n be two positive integers then product n(n-1)(n-2)..........(n-m) in the factorial form is

36. Answer the following questions: What is meant by bias?

37. Find the number of terms of the following AP 7, 13, 19, ..., 205

38. Answer the following questions :

Distinguish between Parameter and Statistic.

39. Answer the following questions in short:

Define Spearman's Rank-correlation coefficient and drive, it when there are no, ties.

40. Answer the following questions : Prove that for Normal distribution SD : QD = 100: 67.

41. It is given that in a group of 3 students, the probability of 2 students not having the same birthday is 0.992. What is the probability that the 2 students have the same birthday?

42. Answer the following questions : If $x_1, x_2, .. x_n$ are independent observations form an infinite population With mean μ and

variance σ^2, then show that sample mean $\bar{x}$ is

an unbiased estimator of μ.