



MATHS

BOOKS - UNITED BOOK HOUSE

Model Test Set - 8

Exercise

1. Proportion of girls in a class of 100 students
is

A. attribute

B. discrete variable

C. continuous variable

D. none of these

Answer:



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2. The vertical axis, in case of an ogive shows

A. cumulative frequencies

B. absolute frequencies

C. frequency densities

D. class boundaries

Answer:



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3. The absolute value of measure of skewness based on quartiles cannot exceed _____

A. 3

B. 1

C. (-)3

D. (-)1

Answer:



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4. Show that the sum of deviations of a set of observations about their mean is Zero.

A. median

B. mode

C. mean

D. none of these

Answer:



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5. $V(3e^{2x}) = 3$ (write true or false).



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6. If $0 < a < 1$ and $x > y > 0$, then $a^x < a^y$ (write true or false)



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7. For a constant c , the value of $\Delta (c)$ is

A. 0

B. 1

C. 2

D. none of these

Answer:



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8. The greatest common divisor of 252 and 595 is

A. 8

B. 7

C. 1

D. none of these

Answer:



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9. If A_1, A_2, A_3 are mutually exclusive, mutually independent and exhaustive, then the probability that A_1, A_2, A_3 occur simultaneously is

A. $\frac{1}{3}$

B. 0

C. 1

D. none of these

Answer:



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10. The probability of getting a heart from a full pack of cards is

A. $\frac{1}{13}$

B. $\frac{1}{3}$

C. $\frac{1}{4}$

D. none of these

Answer:



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11. Write down the expression of combined mean.



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12. For a symmetrical distribution $Q_1 = 28$ and $Q_3 = 46$. Find the median?



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13. How would you construct a frequency distribution of a continuous variable?



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14. Find the first raw moment of first n odd numbers.



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15. State the empirical relation among mean, median and mode.



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16. Describe the sample space when one coin is tossed repeatedly till head comes.



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17. If A_1, A_2, A_3 are mutually exclusive and exhaustive, then $P(A_1) + P(A_2) + P(A_3)$ equal _____



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18. Total number of condition for independence of 3 events is _____



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19. Write down the Paasche's price index formula?



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20. What do you mean by Real wage?



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21. What is crude rate of natural increase?



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22. Define Total fertility rate?



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23. Distinguish between the qualitative data and quantitative data.



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24. The mean and standard deviation of two numbers are 10 and 2 respectively. Find the numbers.



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25. What point should be kept in view during tabulation.



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26. Show that the probability that exactly one of the events A and B occurs is $P(A) + P(B) - 2P(AB)$.



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27. If $P(A) = 1/2$, $P(B) = 2/3$, then prove that

$$\frac{1}{6} \leq P(A \cap B) \leq \frac{1}{2}.$$



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28. The probability of occurrence of at least one of two events A and B is 0.6 while that of occurrence of both of them is 0.2. find the value of $P(A^c) + P(B^c)$



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29. What are skewness and kurtosis?



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30. What is coefficient of variation? State its uses.



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31. Discuss about different sources of data on vital events.





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32. If x, y, z are positive quantities, prove that

$$\frac{x^3 + y^3}{x + y} + \frac{y^3 + z^3}{y + z} + \frac{z^3 + x^3}{z + x} \geq xy + yz + zx$$



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33. Prove that there are no integers x, y such that $x + y = 200$ and greatest common divisor of x and y is 7.



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34. What do you mean by smog?



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35. If n is an odd integer, Prove that 16 is a divisor of $n^4 + 4n^2 + 11$.



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36. Write the classical definition of probability and state its limitations.



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37. Prove that, if A_1 and A_2 are two events, which are not necessarily mutually exclusive then $P(A_1 \cup A_2) = P(A_1) + P(A_1 \cap A_2)$



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



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39. Show that crude death rate can be expressed as weighted arithmetic mean of age specific death rates.



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40. Explain how would construct a cost of living index number (C.L.I)?



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41. In a frequency table, the upper boundary of each class-interval has a constant ratio to the lower boundary. Show that the geometric mean (G) may be expressed as

$$\log G = A + \frac{k}{n} \sum_{i=1}^r f_i (i - 1).$$



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42. Write short note on FAO



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43. A letter is taken at random from the letters of the word STATISTICS and another letter is taken at random from the letters of the word ASSISTANT. What is the probability that the chosen two are the same letter.



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44. If the letters of the word PROBABILITY are arranged at random, what is the probability that the word PROBABILITY gets formed again?





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45. Give a comparative study of the structures of diamond and graphite. Explain with proper reason.



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46. Which colligative property is most suitable for the determination of molecular masses of polymer?



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