



# MATHS

## BOOKS - UNITED BOOK HOUSE

### Jodhpur Park Boys School, Question Paper

#### Exercise

1. Define Pilot survey.



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2. What do you mean by MTP?



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3. Define discrete variable with an example.



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4. What do you mean by disease?



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5. Sketch a blank statistical table and name its different parts and explain any two of them.



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6. "Equal width for different classes is preferred in construction of frequency distribution" Explain.



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7. State and prove Remainder theorem.



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8. IF  $\alpha, \beta$  and  $\gamma, \delta$  be the roots of the equation

$$x^2 - bx + c = 0 \quad \text{and} \quad x^2 - cx + b = 0$$

respectively, form the equation whose roots

are  $\left(\frac{1}{\alpha\gamma} + \frac{1}{\beta\delta}\right)$  and  $\left(\frac{1}{\alpha\delta} + \frac{1}{\beta\gamma}\right)$ .



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9. Assuming  $a.m. \geq g.m$  is true for 8 and 16 positive observation show that  $a.m \geq g.m$  for 11 positive observation.



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10. Given that the cumulative frequencies of less than type and more than type corresponding to a class interval are 320 and 323 respectively, when the total frequency is 500, find the percentage of the class-interval.





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**11.** Find the standard deviation of the following data :

49,63,46,58,52,60,54



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**12.** The first three moments of a distribution about the value 2 of the variable are 1, 16 and -40 respectively. Find the first three moments about 0 and the variance of the distribution.



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**13.** Write notes on : Relative dispersion and its measures.



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**14.** Find the polynomial function  $f(x)$  for which it is known that  $f(0) = 1$ ,  $f(1) = 2$ ,  $f(2) = 11$  and  $f(3) = 34$ .



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**15.** True/false:

Sometimes a quantitative variable can be looked upon as a qualitative variable.



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**16.** True/false:

If all the values lie between two numbers then their harmonic mean may or may not lie between the same numbers.



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**17. True/false:**

Temperature is a discrete variable.



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**18. True/false:**

S.D. cannot exceed Mean deviation about mean.



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**19. True/false:**

$$\log_2 5 > \log_3 6$$



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**20. Fill in the blanks:**

Mean deviation is minimum when deviations are taken about \_\_\_\_\_.



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21. Fill in the blanks:

If  $f(1) = 2$   $F(50) = -23$ , then  $f(3) = \underline{\hspace{2cm}}$ .



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22. Class mark of a class is

A. a)  $LCL + \frac{UCL - LCL}{2}$

B. b)  $UCL - \frac{d}{2}$

C. c)  $UCB - \frac{UCB - LCB}{2}$

D. d) none of these

$$(WCO)d = \text{classwidth}$$

**Answer:**



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**23.** If  $u$  is proportional to  $v$  then

A.  $\sum u_i^2 \cdot \sum v_i^2 = \left( \sum u_i \cdot v_i \right)^2$

B.  $\sum u_i^2 \cdot \sum v_i^2 > \left( \sum u_i \cdot v_i \right)^2$

C.  $\sum u_i^2 \cdot \sum v_i^2 \neq \left( \sum u_i \cdot v_i \right)^2$

D. none of these

**Answer:**



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**24.** find h.m of the numbers 1, 2, 5, 10, 20.



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**25.**  $y \propto x^2$  and  $y=9$  when  $x =9$  . If  $y =4$  then find the value of  $x$  .



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26. If  $f(2) = 9$  and  $f(5) = 17$  then  $\Delta f(2) =$   
\_\_\_\_\_ (fill in the blanks)



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27. If  $f(x)$  be a polynomial of degree 1, then  
 $\Delta^2 f(x) =$  \_\_\_\_\_ (fill in the blanks)



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**28.** Define frequency density of a class interval.



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**29.** Write the empirical relation between mean, median and mode for a moderately skew distribution.



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