



# MATHS

## BOOKS - UNITED BOOK HOUSE

### MODEL QUESTION PAPERS SET-06

#### Exercise

1. Answer the following questions :

(Alternatives are to be noted): 'Show that, for

a Binomial distribution with parameters  $n$  and  $p$ , its mean is greater than variance.



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2. Answer the following questions :

(Alternatives are to be noted): If  $r_{xy} = 0.8$ ,

find  $r_{uv}$  where  $u = x + 5, v = 3 - y$ .



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3. Answer the following questions :

(Alternatives are to be noted): If  $T_1, T_2, T_3$  be

estimators with expectations

$$E(T_1) = \theta_1 + 2\theta_2, \quad E(T_2) = \theta_2 + 2\theta_3, \quad \text{and}$$

$E(T_3) = \theta_3 + 2\theta_1$  find unbiased estimator of

$$\theta_1 + \theta_2 + \theta_3.$$



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4. Answer the following questions :

(Alternatives are to be noted): Define Secular

trend.



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5. Answer the following questions

(Alternatives are to be noted): prove that

$$-1 \leq r \leq 1.$$



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6. Answer the following questions

(Alternatives are to be noted): Distinguish

between SRSWOR and SRSWR.



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7. Answer the following questions :

(Alternatives are to be noted): A Continuous

random variable  $x$  has a density function given

by  $f(x) = \frac{1}{2} - ax, \quad 0 \leq x \leq 4 = 0$  else

where Find (i) The constant  $a$  (ii)

$p(2x + 3 > 5)$ .



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8. Answer the following questions :  
(Alternatives are to be noted): Define (i) Level of significance (ii) Critical region.

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9. Answer the following questions :  
(Alternatives are to be noted): Define MVUE

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10. Answer the following questions :  
(Alternatives are to be noted): Derive the formula for  $SE(\bar{x})$  in case of SRSWR.



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11. Write down the correct option: If  $Cov(x, y) = 6$  then

$$Cov(x, y + 4) = \dots - - -$$

A. 10

B. 40

C. 6

D. 2

**Answer:**



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**12.** Write down the correct option: Binomial distribution  $B(n, p)$  is positively skewed when-

A.  $p = \frac{1}{2}$

B.  $p > \frac{1}{2}$



C.  $p < \frac{1}{2}$

D. None of there

**Answer:**



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**13.** Write down the correct option: For a poisson distribution with parameter unity, its c.v. is---

A. 50 %

B. 100 %

C. 25 %

D. 75 %

**Answer:**



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**14.** Write down the correct option: If two regression lines coincides  $r_{xy}$  is-

A. 1

B.  $-1$

C.  $\neq 1$

D.  $0$

**Answer:**



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**15.** Write down the correct option: Null hypothesis is always about-

A. Sample

B. Population

C. both (a) & (b)

D. None of these

**Answer:**



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**16.** Write down the correct option: If  $E(x) = 3$ ,

$E\{x(x-1)\} = 22$ . Then  $\text{var}(7 - 2x)$  is--

A. 16

B. 64

C. 32

D. None of these

**Answer:**



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17. Write down the correct option:  $\sqrt{E(x)^2}$  ?

$E(x)$ , Where? is ---

A.  $>$

B. =

C.  $\leq$

D.  $\geq$

**Answer:**



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**18.** Write down the correct option: The second order Central monient of a  $N(0, 1)$  distribution is--

A. 0

B. 1

C. 2

D. 3

**Answer:**



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**19.** Answer all questions: The C.V of poisson distribution is 25 % fund its mean.



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**20.** Answer all questions: Which method would you adopt to forecast trend value in time series?

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**21.** Answer all questions: State the name of control chart for attribute.

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**22.** Answer all questions: Give an example of discrete random variable.



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