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Total No. of Questions: 31] [Total No. of Printed Pages: 8

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321 - X

STATISTICS

Time: 3 Hours]

[Maximum Marks: 70

SECTION-A

(OBJECTIVE TYPE QUESTIONS)

1 each

- If $P(A \cap B) = P(A) P(B)$, the events A and B are
- Mathematical probability is also known as probability.
- For Bernoulli distribution with probability p of a success and q of a failure the relation between mean and variance that hold is:
 - (A) mean < variance
 - (B) mean > variance
 - (C) mean = variance
 - (D) mean ≤ variance

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Turn Over

- 4. If $P = \pm 1$, the two regression lines are coincident. (True/False)
- 5. If A and B are positively associated, then:

(A)
$$(AB) > \frac{(A)(B)}{N}$$

(B)
$$(AB) < \frac{(A)(B)}{N}$$

(C)
$$(AB) = \frac{(A)(B)}{N}$$

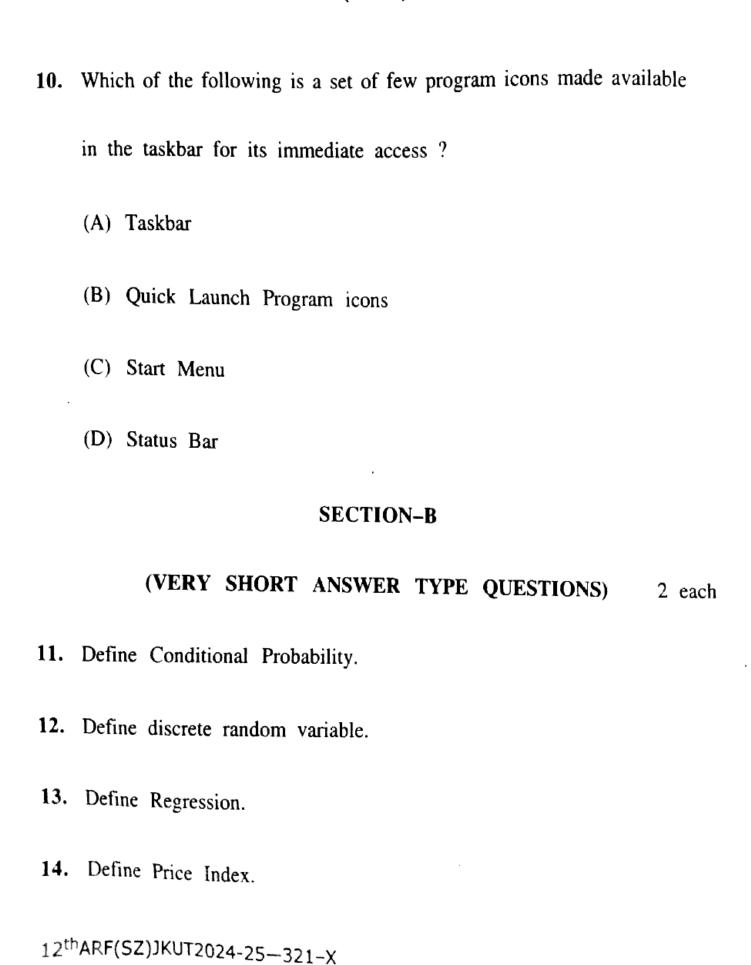
- (D) None of these
- 6. If all A's are B's, then the coefficient of association Q is equal to:
 - (A) 1
 - (B) -1
 - (C) 0
 - (D) ∞

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Vital index for ascertaining population growth is:	
(A) A good measure	
(B) A rough measure	
(C) Useless	
(D) None of these	,
8. Stratified sampling is appropriate when population is	
9. The forecasts on the basis of a time series are:	
(A) Centpercent time	
(B) Time to a great extent	
(C) Never true	
(D) None of these	
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- 15. Define Systematic Sampling.
- 16. What are Non-sampling errors?
- 17. Define Time Series.
- 18. What is Irregular Trend?
- 19. What is a Secular Trend?

SECTION-C

(SHORT ANSWER TYPE QUESTIONS)

3 each

- 20. State addition law for two events.
- 21. From the following data find out the missing frequencies:

$$(AB) = 100, (A) = 300, (N) = 1000, (B) = 600$$

22. From the following data, find out whether the data are consistent or not:

$$(A) = 100, (B) = 150, (AB) = 140, N = 500$$

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23.	Write the characteristics of index number.				
24.	What are time and factor reversal tests ?				
25.	Define the following:				
	(a) Crude death rate				
	(b) Specific death rate				
26.	Differentiate between general fertility rate and specific fertility rate.				
27.	What are the requisites of a good sample. https://www.jkboseonline.com				
28.	Differentiate between software and hardware.				
SECTION-D					
	(LONG ANSWER TYPE QUESTIONS) 5 each				
29.	Define Poisson distribution. Obtain its mean and variance				

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Or

With the usual notations, find P for a binomial variate X, if n = 6 and

$$9P(X = 4) = P(X = 2)$$

30. From the following data, obtain the two regression equations:

X	Y	
6	9	
2	11	
10	5	
4	8	
8	7	

Or

Explain when two regression lines coincide. State the properties of regression coefficients.

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31. Solve the following LPP by graphical method:

Minimize:

$$Z = 20x + 10y$$

Subject to constraints:

$$x + 2y \le 40$$

$$x + y \ge 30$$

$$4x + 3y \ge 60$$

$$x, y \ge 0$$

Or

Define Linear Programming Problem. Explain the following terms:

- (i) Feasible solution
- (ii) Basic feasible solution
- (iii) Optimum solution

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