

**63/1 (SEM-3) CC7/ECOHC3076**

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( Held in 2023 )

**ECONOMICS**

Paper : ECOHC3076

**( Statistical Methods for Economics )**

Full Marks : 80

Pass Marks : 32

Time : 3 hours

*The figures in the margin indicate full marks  
for the questions*

1. Choose the correct answer from the following : 1×6=6

(a) Which of the following is the measure of central value?

(i) Median

(ii) First quartile

(iii) Third quartile

(iv) None of the above

(b) The geometric mean of  $1/32$  and  $8/25$  is

(i)  $1/10$

(ii)  $1/100$

(iii) 10

(iv) 100

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- (c) A normal curve is defined by the mean and the standard deviation.
- (i) True
  - (ii) False
  - (iii) None of the above
- (d) If  $r$  is the correlation coefficient, then the quantity  $(1 - r^2)$  is called
- (i) coefficient of determination
  - (ii) coefficient of non-determination
  - (iii) coefficient of alienation
  - (iv) None of the above
- (e) Out of all the measures of dispersion, the easiest one to calculate is
- (i) standard deviation
  - (ii) range
  - (iii) variance
  - (iv) quartile deviation
- (f) The mean of a binomial distribution is
- (i)  $pq$
  - (ii)  $np$
  - (iii)  $nq$
  - (iv) None of the above

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( Continued )

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2. Answer the following questions : 2×5=10
- (a) When is rank correlation used?
  - (b) Define kurtosis.
  - (c) Explain two uses of weighted mean.
  - (d) What are the types of random variable?
  - (e) Define partial correlation.
3. Answer any six of the following questions : 5×6=30
- (a) Given  $P(A \cup B) = 0.47$  and  $P(B) = 0.30$ . If the events  $A$  and  $B$  are independent, calculate  $P(AB)$ .
  - (b) Explain the characteristics of a good average.
  - (c) State the multiplication or compound theorem of probability.
  - (d) A bag contains 6 white, 4 red and 10 black balls. 2 balls are drawn at random. Find the probability that they will both be black.
  - (e) Prove that  $E(x - u) = 0$ , where  $E(x) = u$ .
  - (f) Explain the roles of sampling theory.
  - (g) Show that in binomial distribution mean  $>$  variance.

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( Turn Over )

- (h) Differentiate between absolute and relative dispersion.
- (i) Explain the role of sampling theory.

4. Answer any *two* of the following questions :

10×2=20

- (a) State the merits and limitations of Karl Pearson's coefficient of correlation.

5+5=10

- (b) A throws a coin thrice. If he gets a head in all the three throws, he wins ₹ 1,200. Otherwise, he has to lose ₹ 150. Find the mathematical expectation of gain of A.

- (c) Write the merits and demerits of sample survey.

5+5=10

5. Answer any *one* of the following questions : 14

- (a) The probability of failure in physics practical examination is 20%. If 25 batches of 6 students each appear at the examination, in how many batches 4 or more students would pass?

- (b) What do you understand by sample survey? Briefly explain the principal steps in a sample survey.

2+12=14

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