

**63/1 (SEM-3) ECO HCC 7**

**2020**

( Held in 2021 )

**ECONOMICS**

Paper : CC-7

**( Statistical Methods for Economics )**

Full Marks : 80

Time : 3 hours

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

1. Choose the correct option from the following : 1×6=6
- (a) Which of the following is not true of the normal distribution?
- (i) The curve is asymmetrical
  - (ii) The curve is bell-shaped
  - (iii) The curve approaches to the x-axis gradually on either side of the mean
  - (iv) None of the above
- (b) Which of the following are the reasons for sampling?
- (i) Physical constraints
  - (ii) Cost constraints
  - (iii) Time constraints
  - (iv) All of the above

(c) The number of outcomes of rolling three dice is

(i) 216

(ii) 36

(iii) 04

(iv) 08

(d) Median is

(i) a positional average

(ii) a mathematical average

(iii) both (i) and (ii)

(iv) None of the above

(e) In normal distribution

(i)  $\text{mean} > \text{median} > \text{mode}$

(ii)  $\text{mean} \neq \text{median} \neq \text{mode}$

(iii)  $\text{mean} = \text{median} = \text{mode}$

(iv)  $\text{mean} < \text{median} < \text{mode}$

(f) Which of the following is not a form of non-random sampling?

(i) purposive sampling

(ii) quota sampling

(iii) systematic sampling

(iv) judgement sampling

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2. Answer the following questions :  $2 \times 5 = 10$

- (a) Define sample space. Write the sample space if two coins are tossed.
- (b) Define mutually exclusive events.
- (c) Define random variable.
- (d) Mention two merits of median.
- (e) Differentiate between point estimation and interval estimation.

3. Answer any six of the following questions :  $5 \times 6 = 30$

- (a) Differentiate between parameters and statistics.
- (b) Discuss briefly the merits and demerits of sampling.
- (c) Explain briefly the principle of maximum likelihood method of estimation.
- (d) Mention the properties of binomial distribution.
- (e) Write a note on axiomatic approach to probability.
- (f) Discuss the importance of the measures of dispersions.
- (g) Distinguish between simple random sampling and systematic sampling.



- (h) Define normal distribution and state the conditions under which the distribution holds.
- (i) Mention the merits and demerits of stratified sampling.

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

10×2=20

- (a) Define mathematical expectations. A coin is tossed three times. Find the expected value of  $X$  if  $X$  denotes number of times head appears.
- (b) What do you mean by probability density function? Differentiate between discrete random variable and continuous random variable with example.
- (c) Mention two properties of median. State the merits and demerits of median.

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

- (a) Describe the normal probability distribution. What are the important characteristics of this distribution? Discuss the normal probability curve.

2+6+6=14

- (b) Distinguish between census and sample method of data collection. Explain the advantages of sample method over census method. Mention the principal steps involved in a sample survey.

2+6+6=14

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