REV-01
MEC/28/34

2023/06

SET A

MA ECONOMICS
SECOND SEMESTER
STATISTICS
MEC – 203
[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 1.30 hrs. **Full Marks: 35**

Objective

Time: 15 mins. **Marks: 10**

Choose the correct answer from the following: ***1×10=10***

1. What is the probability of impossible event?
   a. 1 b. -1
   c. 0 d. 2

2. If A and B are mutually exclusive event then P(AUB) Is
   a. P(A) + P(B) b. P(A) + P(B) – P(AB)
   c. P(A) – P(B) d. P(A)P(B)

3. What is the limit of the correlation coefficient?
   a. $0< r < 1$ b. $-1< r < 0$
   c. $-1< r < 1$ d. $-2< r < 1$

4. When a correlation between two variables are said to be perfect and negative?
   a. $r = -1$ b. $r=1$
   c. $r = 0$ d. $r = 0$

5. Which one is the correct statement of regression coefficients (b_{xy} and b_{yx})?
   a. $b_{xy}= 1.5$ &$b_{yx} = 1.7$ b. $b_{xy}= 1.9$&$b_{yx} =-0.7$
   c. $b_{xy}= -1.5$ &$b_{yx} =0.7$ d. $b_{xy}= -1.9$&$b_{yx} =-0.7$

6. When A & B are independent events. What is the value of P(AB)?
   a. P(A) + P(B) b. P(A) + P(B) – P(A/B)
   c. P(A).P(B/A) d. P(A). P(B)

7. Match the items of List-II with the items of List-I and denote the code of correct matching

List-I	List-II
(a) Testing the goodness of fit of a distribution	(i) Z-test
(j) Testing the significance of the differences among the average performance of more than two sample groups	(ii) Chi-square test
(k) Testing the significance of the difference between the average performance of two sample groups (large-sized)	(iii) F-test

   a. (a) - (iii), (b) - (i), (c) - (ii) b. (a) - (ii), (b) - (iii), (c) - (i)
   c. (a) - (ii), (b) - (i), (c) - (iii) d. (a) - (i), (b) - (ii), (c) - (iii)

8. Which one of the following is caused by careless handling of experimental set up?
   a. Systematic error
   b. Standard error
   c. Type I error
   d. Gross error

9. Goodness of fit of a distribution is tested by
   a. Chi square test
   b. Z test
   c. F test
   d. Student- *t* test

10. Which among the following is not a characteristics of a good estimator?
   a. Biasedness
   b. Sufficiency
   c. Consistency
   d. Efficiency

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Descriptive

Time : 1 Hr. 15 Mins. **Marks : 25**

[Answer question no.1 & any two (2) from the rest]

1. A bag contains 7 black and 9white balls. Two balls are drawn from this bag one after the other without replacement. What is the probability that the two balls are black? 5

2. Define Correlation Coefficient. Give two Examples of Positive Correlation. 4+6=10
From the following data find out if there is any relationship between density of population and death rate.

Districts	Area (in km)	Population	No. of Deaths
A	130	25,000	290
B	150	76,000	1120
C	90	49,000	770
D	60	40,000	730
E	200	60,00	650

Hints: Desity of Population= $\frac{Population}{Area}$

Birth Rate = $\frac{No.\ of\ Deaths}{Population} \times 100$

3. From the following data set 10
   i. Calculate the two regression equations.
   ii. Estimate the value of Y when X is 30

x	y
11	7
7	5
9	3
5	2
8	6
6	4
10	8

4. What is a hypothesis? Explain the various steps in testing a hypothesis. 2+8=10

5. Define the followings: 5+5=10
   a) Null hypothesis & alternative hypothesis
   b) Type I & Type II error

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