

26-3-18

DOON UNIVERSITY, DEHRADUN
Mid- Semester Examination, 2018
School of Social Sciences
MSc Economics (Second semester)
Course Code: SSEI-153 Statistical Methods II

Time Allowed: 2 Hours

Maximum Marks: 30

Section A (Attempt all parts of this section)

(1*5=5 marks)

1. Convert the trend into monthly trend. $Y=550+18X+0.8X^2$
2. An act repeated under same conditions is _____ whereas the result obtained is called _____
3. If $m=2.5$ and variance=9 what are first, second third and fourth constant of binomial distribution
4. If $Y=13.285+1.857X$ (origin Year=2005) find new trend line for year 1998)
5. If mean of binomial distribution is 2.15 and second moment is 3.95. What is the probability of failure?

Section B (Attempt all questions)

(3*3=9 marks)

1. Differentiate between cyclical & seasonal fluctuations.

Or

Compute 4 yearly moving averages for the following:-

Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Production	50	36.5	43	44.5	38.9	38.1	32.6	41.7	41.1	33.8

2. A company has two plants Plant I manufactures 80% of the scooters and Plant II manufactures 20%. AT plant I out of 100 scooters are rated standard qualities or better. AT plant II only 65 out of 100 scooters are rated standard quality or better.
 - a) What is the probability that a scooter selected at random came from Plant I if it is known that the scooter is of standard quality?
 - b) What is the probability that a scooter selected at random came from Plant II if it is known that the scooter is of standard quality?
3. A bag contains 10 gold and 8 silver coins. Two successive drawings of 3 coins are made such that
 - a) Coins are replaced before the second drawing
 - b) Coins are not replaced before the second drawing.
 In each case, find the probability that first drawing will give 3 gold and second 3 silver coins.

Section C (Attempt any Two questions)

(2*8=16 marks)

1. Explain the following-
 - a) Mutually exclusive events & Complementary events
 - b) Dependent & Independent events
 - c) Simple & Compound events
2. Fit a straight line trend by the method of least squares to the following data taking 1996 as origin year. Assuming the rate of change continues what would be the earnings for 2008?

Year	1993	1994	1995	1996	1997	1998	1999	2000	2008
Earnings (lakhs)	38	40	65	72	69	60	87	95	?

3. The life time of a certain kind of batteries has a mean life of 400 hours and standard deviation of 45 hours, Assuming that distribution is exactly normal, find-
 - a) % of batteries with a mean life of at least 470 hours
 - b) Proportion of batteries with life between 385 and 415 hours
 - c) Minimum life of the best 5% batteries.