



DOON UNIVERSITY, DEHRADUN
Mid-term Examination, First Semester, 2014
School of Social Sciences
MSc Economics

Course: SSEI 211- : ECONOMETRICS I

Time Allowed: 2 hrs.

Max. Marks: 30

Note: Attempt All Questions from Sections A, B, C.

SECTION : A

All questions are compulsory and carry equal marks.

Answer TRUE or FALSE

(Marks : 1 x 6 = 6)

1. Sample space is a collection of outcomes or simple events.
2. A random variable is a numerical description of the outcome of an experiment.
3. Covariance remains unchanged if constants are added to the variables or if the variables are multiplied by constants having the same sign.
4. Normal distribution is a discrete probability distribution.
5. The total area under the probability density curve is more than 1.
6. The particular normal distribution that has a mean 1 and a standard deviation of 0 is called the standard normal distribution.

SECTION : B

Answer any THREE.

(Marks: 3 x 4 = 12)

Identify which probability distribution is applicable in the following cases and why?

1. A police patrolling van receives an average of 1 call per hour. Find the probability of receiving 1 call in a randomly selected hour.
2. The probability of a boy hitting the target is 0.20. If he fires 9 times, what is the probability of his hitting the target at least thrice.
3. A man is playing a video game. It costs Rs. 20 to play once. Probability of losing is 0.5. The man decides to stop playing after losing third time. Find the probability that the man plays exactly 17 times.
4. In a research project we conduct a series of experiments in a defined sequence. The next experiment in series can be performed only if the previous one is a success. The experiments are independent. The probability of success is 77% or 0.77. Find the probability that the project is abandoned after fourth experiment.

SECTION : C

Answer any ONE.

(Marks: 1x12 = 12)

1. The lifetime of light bulbs is known to be normally distributed with $\mu = 100$ hours and $\sigma = 8$ hours. What is the probability that a bulb picked at random will have a lifetime between 110 and 120 burning hours?

Area between $(.00 \leq z \leq 1.25) = .3944$

Area between $(.00 \leq z \leq 2.50) = .4938$

2. What are the stages in an econometric research? Elaborate with the example of consumption function.