

**PhD and MPhil Admission Test**

**Model Statistical Test 2017**

**Time: 30 minutes**

**Circle the appropriate answer.**

1. What is one of the distinctions between a population parameter and a sample statistic?
  - a) A population parameter is only based on conceptual measurements, but a sample statistic is based on a combination of real and conceptual measurements.
  - b) A sample statistic changes each time you try to measure it, but a population parameter remains fixed.
  - c) A population parameter changes each time you try to measure it, but a sample statistic remains fixed across samples.
  - d) The true value of a sample statistic can never be known but the true value of a population parameter can be known.
  
2. Which one of the following variables has interval scale?
  - a) Weight of noodle packages in a box.
  - b) Measurement of temperature in a city.
  - c) Ranking of preference in order of 1 to 4, 4 being the best preferred.
  - d) Marital status of a person (single, married, divorced).
  
3. The value of a correlation is reported by a researcher to be  $r = -0.5$ . Which of the following statements is correct?
  - a) The x-variable explains 25% of the variability in the y-variable.
  - b) The x-variable explains -25% of the variability in the y-variable.
  - c) The x-variable explains 0% of the variability in the y-variable.
  - d) The x-variable explains -50% of the variability in the y-variable.
  
4. Given that mean GMAT score is 500 and standard deviation is 100. What is the probability that a randomly selected score from an administration of the GMAT test is greater than 600?
  - a) 16%
  - b) 32%
  - c) 34%
  - d) 5%
  
5. Using linear regression, a researcher estimated the following equation with Y (yield in metric ton) and X (amount of fertilizer in kgs.) from data collected from 70 plots of same size land.  
Estimated  $Y = 20.58 + 2.13 X$   
t-ratio: (3.38) (2.79)  
An interpretation of slope coefficient is:
  - a) An increase in amount of fertilizer applied on land by 1 unit causes an increase in yield by 2.13 units
  - b) An increase in amount of fertilizer applied on land by 1 kg causes an increase in yield by 20.58 metric tons
  - c) A decrease in amount of fertilizer applied on land by 1 kg causes a decrease in yield by 2.13 metric tons
  - d) Fertilizer does not affect yield since the estimated slope coefficient is insignificant