SAMPLE ENTRY TEST 2020
M.Phil./ Ph.D.

Please Note:
➢ No negative marking.
➢ Calculators are allowed.
➢ Time allowed will be two hours.
➢ Maximum marks will be 100.
➢ There will be 100 questions in total. Section-1, Section-2 and Section-3 will contain 70, 15 and 15 questions, respectively.

Section – 1 (Statistics)

1- Which of the following is not a condition for the hypergeometric distribution?
   A) **the probability of success is the same on each trial**
   B) sampling is done without replacement
   C) there are only two possible outcomes
   D) trials are dependent

2- The assumption of constant error variance in regression analysis is called _____.
   A) Heteroscedasticity
   B) **Homoscedasticity**
   C) Residuals
   D) Linearity

3- Consider the relative frequency distribution given below:

Class Interval	Relative Frequency
20-under 40	0.2
40-under 60	0.3
60-under 80	0.4
80-under 100	0.1

There were 60 numbers in the data set. How many numbers were in the interval 20-under 40?
   A) **12**
   B) 20
   C) 40
   D) 10

4- The t distribution is most different from the standard normal distribution when sample size is
   A) infinitely large
   B) very large
   C) large
   D) **very small**

5- A market analyst is developing a regression model to predict monthly household expenditures on groceries as a function of family size, household income, and household neighborhood (urban, suburban, and rural). The response variable in this model is _____.
   A) family size
   B) **expenditures on groceries**
   C) household income
   D) Suburban

6- If two events are mutually exclusive, then their joint probability is always _____.
   A) **Zero**
   B) One
   C) 0.5
   D) None of above

Section – 2 (Mathematics)

7- 260   216   128   108   62   54   ?   27

    A) 39
    B) 49
    C) **29**
    D) 19

8- $x\sqrt{0.09} = 3;$ $x = ?$

    A) **10**
    B) $\dfrac{1}{3}$
    C) $\dfrac{1}{10}$
    D) 1

Section – 3 (English)

9- _____ the better team, we lost the match.

    A) despite of being
    B) despite
    C) **despite being**
    D) although

10- By this time next year, I _____ all my exams.

    A) **will have taken**
    B) will take
    C) take
    D) have taken