Name:……..
Faculty #:…….. Group:…… Date:……

1. **Coefficient of determination indicates ……**
……

2. **A correlation coefficient of r = 0.52 indicates:**
a) A strong positive causation
b) A moderate positive causation
c) A moderate negative causation
d) All listed options are wrong

3. **Mean weight of 100 male volleyball players is found to be 88 kg with a standard deviation of 2 kg. Data are normally distributed. The number of volleyball players from this sample whose weight is bigger than 84 kg and smaller than 94 kg is equal to:……..**

4. **Select all of the following variables that are likely to follow a normal distribution.**
I. The number of hospital attendances in a year in a sample of adults from the general population.
II. Survival times following a heart transplant.
III. Heights of individuals in the population.
IV. The ages of first year medical students.
a) III
b) II and III
c) I, II and III
d) II, III and IV

5. **What is the final outcome of Fisher's exact test?.....**

6. **In an observational study of defibrillation in theatre, 40 surgeons and 20 anaesthetists were asked to manage simulated ventricular fibrillation. Candidates were randomized to either Defibrillator 1 or Defibrillator 2. The Defibrillator 2 was easier to turn on (61 seconds vs 82 seconds; p=0.03) and the first shock was delivered more rapidly (78 seconds vs 102 seconds; p=0.006). Which one of the following statements is correct?**
a) A p-value of 0.03 means that there is a 3 in 100 chance that we would have obtained these results, or more extreme results, if the alternative hypothesis was true.
b) An appropriate null hypothesis is that there is no difference in the mean time taken to deliver the first shock between candidates using Defibrillator 1 and candidates using Defibrillator 2.
c) We can reject the alternative hypothesis that the mean time taken to turn on Defibrillator 1 is greater than that for Defibrillator 2.
d) The p-value for the comparison of time taken to deliver first shock was 0.006. This means that we cannot reject the null hypothesis at the 5% level of significance.

7. **If r_{xy} = 0.84, then r_{yx} is equal to:**
a) 0.7056
b) 0.84
c) -0.84
d) 0.16

8. **In simple linear regression, the number of unknown constants is:**
a) One
b) Two
c) One or two
d) More than two

9. **According to a previous study, the proportion of hypertension patients having diabetes is no more than 12%. A researcher wants to calculate a sample size for a study with a 4% absolute precision error and a 95% confidence level. In this case, the sample size will be equal to:……..**

10. **The one-sample t-test is appropriate when:**
I. Our aim is to compare the mean of a variable in one group of individuals to that of another.
II. Our aim is to compare the mean of a variable in a group of individuals to a particular value.
III. The variable of interest could be only binary.
IV. The variable of interest is normally distributed.
a) I and IV
b) II and IV
c) I and III
d) II, III and IV