**TOPIC TEST 9**

**Q.1 ) For which of the following correlations would the data points be most widely scattered around the regression line?​**

1. **​r = 0.10**
2. ​r = 0.99
3. ​r = 0.80
4. ​r = 0.50

**Q.2 ) If the Pearson correlation between X and Y is negative, then the regression equation will have a negative slope.**

1. **True**
2. False

**Q.3 ) One use of a regression equation is to increase the accuracy of predicting Y scores. What determines the proportion of the variability in the Y scores that is predicted by the regression equation?**

1. **​**1 – r2
2. ​r
3. ​**r2**
4. ​1 – r

**Q.4) A set of n = 25 pairs of scores (X and Y values) has a Pearson correlation of r = 0.80. How much of the variance for the Y scores is predicted by the relationship with X?**

1. **​**0.36 or 36%
2. ​0.20 or 20%
3. ​**0.64 or 64%**
4. ​0.80 or 80%

**Q.5) For the linear equation Y = 2X + 4, if X increases by 1 point, how much will Y increase?**

1. **​**3 points
2. ​4 points
3. ​**2 points**
4. ​1 point

**Q.6) The best-fitting line is the one that has the smallest total squared error, so the resulting line is commonly called the least-squared-error solution.**

1. **True**
2. False

**Q.7) A linear regression equation has b = 3 and a = – 6. What is the predicted value of Y for X = 4?​**

1. **​**This cannot be determined without additional information.
2. ​Y  = –2
3. **​** Y = –21
4. ​**Y = 6**

**Q.8) The value of SSresidual measures the total squared distance between the actual Y values and the Y values predicted by the regression equation.**

1. **True**
2. **False**

**Q.9) It was predicted that older people spend longer with the doctor.**

**Data was collected from a random sample of people who had recently visited the doctor. For each person, researchers recorded their age and the length of their most recent consultation with the doctor.**

**This study is:**

1. Experimental
2. **Observational**

**Q.10) What is the population that the researchers can draw conclusions about?**

1. All older people who have recently visited the doctor
2. **All people who have recently visited the doctor**
3. All doctors

**Q.11)**

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**Q.12) The correlation in this sample is:**

1. **strong**
2. extremely weak
3. moderate strength
4. weak

**Q.13) The best interpretation of the relationship in this sample is:**

1. **Older patients tend to have longer consultations**
2. Longer consultations tend to be given to younger patients
3. **As patients get older, consultations increase in length**

**Q.14) What is the size of the sample used to calculate Pearson's r?**

=> 59

**Q.15) The *p*-value would be reported as**

1. *p* = 0.000
2. *p* < 0.050
3. *p* > 0.050
4. *p* < 0.5
5. ***p* < 0.001**
6. *p* > 0.001