1. Suppose that a researcher wishes to determine whether there is a linear relationship between weight and blood pressure in a sample of older persons in the community. Which statistical methods would most likely be employed to answer this question?
2. Independent sample t-test
3. One-way ANOVA
4. Pearson’s correlation coefficient
5. Spearman’s correlation coefficient
6. You wish to compare the mean blood-lead levels at 12 months among infants in the low, medium and high cord blood-lead-levels groups. You have 39 subjects in the low group, 43 in the medium and 41 in the high. You perform the overall F test for one-way ANOVA and find F=4.39 (obtained value). Would you reject the null hypothesis of equality of group means if you use alpha=0.05?
7. We do not have sufficient information to make a decision.
8. Fail to reject H0 since F=4.39 with p-value>0.05
9. Reject H0 since F=4.39 with p-value <0.01
10. Reject H0 since F=4.39 with p-value <0.05
11. Consider the two statements below:

* In simple linear regression, testing the significance of the slope is equivalent to testing the significance of the correlation between dependent and independent variables.
* In simple linear regression, the slope always has the same value as the Pearson’s correlation coefficient between dependent and independent variables.

1. Both statements are true.
2. Only the first statement is true.
3. Only the second statement is true
4. Neither statement is true.
5. The correlation coefficient between height and cervical spine (Cv) for 155 subjects is 0.848. Could you conclude that there is statistically significant association between these two variables? Please use one sample t-test and use alpha=0.05.
6. Reject the null hypothesis of no association since the correlation coefficient is greater than 0.80.
7. Fail to reject the null hypothesis of no association since the correlation coefficient is less than 1.
8. Reject the null hypothesis if no association since p-value is less than 0.05.
9. Fail to reject the null hypothesis if no association since the p-value is greater than 0.05.
10. Which of the following values indicates the greatest strength of relationship for a Person’s correlation of coefficient?
11. -0.85
12. 0
13. .75
14. 22
15. A Person’s correlation of coefficient of zero between x and y indicates that:
16. X and y are unrelated
17. The strength of relationship between x and y is at a maximum
18. There is no linear relationship between x and y
19. X and y has a perfect linear relationship
20. If the Pearson’s correlation between x and y is 1 or -1, the residual sum of squares in the simple linear regression, y=a+bx, will be
21. 1
22. -1
23. Zero
24. It cannot be determined from the information given
25. R-square is called as the coefficient of determination and (I-R-Square) is called as the coefficient of non-determination. The latter is also
26. The slope of a simple linear regression
27. The proportion of variation in the dependent variable y explained by variation in the independent variable x
28. The proportion of variation in the dependent variable y not explained by variation in the independent variable x
29. The intercept of a simple linear regression
30. The data below represent 15 readings of the volume of car traffic (x) and the concentration levels of monoxide of carbon (y) taken in a given sampling site of a high way for air quality surveillance:

X Y

350 13.0

325 12.5

100 8.8

110 9.0

300 12.1

125 9.5

275 12.1

175 10.5

190 10.5

200 10.5

150 10.0

225 10.6

250 11.0

375 13.2

400 14.5

Σx=3550 Σy=167.8

Σx2=974450 Σy2=1915.36

Σxy=41945

Assuming all the conditions for a single linear regression equation met, which one of the equations below determine the best regression line (x being the independent and y the dependent variables)

1. Y=0.0166+7.2525x
2. Y=7.2524+0.9852x
3. Y=7.2524+0.0166x
4. Y=0.0166x
5. From the previous question, choose which one is the percentage of variability (R-square) of the concentration level of monoxide of carbon (y) which is explained by the volume of car traffic (x)?
6. R-Square=0.9852
7. R-Square=0.9926
8. R-Square=0.0294
9. R-Square=0.9706