JKUAT

Computer Applications in Health Research CAT

**Question 1**

Armed with the knowledge that ethanol causes liver damage through production of lipid peroxidation by free radicals, a post graduate student at Jomo Kenyatta University carried out research to compare serum bilirubin and vitamin C and E levels among 20 clinically diagnosed alcoholic liver disease patients and 20 normal healthy controls. To obtain unbiased results, each patient was matched with the healthy person by age, sex & socioeconomic status. The data have been sent to you.

1. Use Microsoft Excel function to calculate the following:
   1. Mean of Vitamin C values of healthy persons (2 marks) in cell H1
   2. Mean of Vitamin C values of diseased persons (2 marks) in cell H2
   3. The mean of Vitamin C values of old persons (2 marks) in cell H3
2. Analyse the data using a pivot table in a separate worksheet and provide the following information as one table in Microsoft Excel and save your work (24 marks)

|  |  |  |  |
| --- | --- | --- | --- |
| Study group | Socio-economic status | Mean serum bilirubin (mg/dl) | Standard deviation of serum bilirubin |
| Healthy | Low |  |  |
| Middle |  |  |
| High |  |  |
| Diseased | Low |  |  |
| Middle |  |  |
| High |  |  |

1. Use your pivot table to create a bar chart showing the relationship between the mean serum bilirubin (mg/dl) and socio-economic status by each study group and save it in a separate worksheet named “MSerum\_SES” (20 marks)