**Assignment PhD(Physiotheraphy) Course Work**

**Biostatistics**

**Maximum Marks: 30**

**Note: Four questions are given from Unit-III and Unit-IV. All the students are required to attempt all questions. Marks are indicated against each question.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Healthy children from well to do families were surveyed for their weight. The distribution of 450 girls by weight, taken within a week of their seventh birthday, is as follows:   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | Weight (kg.) | 14-16 | 16-18 | 18-20 | 20-22 | 22-24 | 24-26 | 26-28 | | No. of girls | 4 | 36 | 85 | 182 | 96 | 40 | 7 |   Find the mean, meddian, mode and standard deviation. A girl who is 7 year old comes to clinic from the same area. Her weight is 18.3 kg. Can she be considered under weight? | 7.5 |
| 2 | Suppose that diastolic blood pressure in hypertensive women centers about of mean 100 mmHg with standard deviation 14 mmHg is normally distributed. Find the probability that a women randomly selected from this population will have:   1. A diastolic blood pressure less than 88 mmHg. 2. A pressure between 96 and 104. 3. The pressure below which pressure of 99% of the population diastolic blood pressure lie. 4. The two diastolic pressures between which the central 95% of the pressures in the population lie. | 7.5 |
| 3 | We have the data on the lean body mass and resting metabolic rate for 8 women who are subjects in a study of dieting. Lean body mass (kg), is a person’s weight leaving out all fat. Metabolic rate (K cal) burned per 24 hours, is the rate at which the body consumes energy.   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Mass | 36.1 | 54.6 | 48.5 | 42.0 | 50.6 | 40.3 | 33.1 | 34.5 | | Rate | 1.0 | 1.5 | 1.4 | 1.4 | 1.5 | 1.3 | 0.9 | 1.1 |   Establish a regression line taken metabolic rate as a response variable. Another woman has lean body mass 45 kg. What is her predicted metabolic rate? | 7.5 |
| 4 | The chest circumference of presumably normal newborn baby girl is normally distributed with µ=13.0 inch and σ=0.7 inch. A group of 49 newborn baby girls from a population group living in a remote region and thought perhaps to constitute a genetic isolate are studied and found to have an average chest circumference of 12.6 inch. In this evidence that the group of 49 come from a population with parameter values different from the values µ=13.0 inch and σ=0.7 inch. Also estimate 95% confidence interval in which the chest circumference of this group of 49 newborn baby girls expected to lie. | 7.5 |