Consider the following frequency distribution of CGPA of 100 UIU students.

CGPA	1-1.5	1.5-2	2-2.5	2.5-3	3-3.5	3.5-4
No of students	7	18	35	27	10	3

(i) Sketch histogram and frequency polygon of the frequency distribution in the same graph. Also, sketch the pie chart.

(ii) Sketch histogram and find the mode from it. Check your result.

(iii) Draw the cumulative frequency curve (OGIVE) and find median, 3^{rd} quartile, 7^{th} Decile, and 55^{th} Percentile from the OGIVE. Also, verify by the analytical method.

(iv) Find the harmonic and geometric mean.

(v) Find arithmetic mean and standard deviation of the frequency distribution.

(vi) Find the statistical index for the value $x = 2.6$.

(vii) Estimate median and then mean deviation from median. Also, find the coefficient of the mean deviation.

(viii) Find first four raw moments about $A = 1.75$ and convert them to the central moments. Also, find the co-efficient of skewness and kurtosis. Make comments about the distribution.

$$m_2 = m_2' - {m_1'}^2; \quad m_3 = m_3' - 3m_2'm_1' + 2{m_1'}^3;$$
$$m_4 = m_4' - 4m_3'm_1' + 6m_2'{m_1'}^2 - 3{m_1'}^4$$

Each member of an athletics club was asked to monitor the distance run in training during a particular week. The table below summarizes the results.

Distance to nearest Km	30-40	40-50	50-60	60-70	70-80	80-90
Number of athletes'	2	4	7	12	9	6

(i) Find the cumulative frequency polygon.

(ii) Estimate Q_1, Me, D_6 & P_{85} from the cumulative frequency polygon.

(iii) Estimate the mean distance and the standard deviation of the distribution.

(iv) Find the interquartile range of the given distribution.