



International Islamic University Chittagong

Department of Pharmacy

B. Pharm (Hons.) Program

Final Examination

Spring Semester 2022

Course Code: **Pharm-1209**

Course Title: **Basic Mathematics and Statistics**

Time: 2 hours — 30 minutes

Full Marks: 50

(Answer of separate groups should be given in separate scripts. Figures on right margin indicate marks)

Group A *(Answer any two questions from the followings)* **Marks: 20**

1. a) Define Statistics. State important characteristics and limitations of Statistics. 4
b) Explain the term variable with example. 2
c) Write down the name of primary scales of measurement. Among them which one is the most powerful? For each of the following variables, specify the measurement scale that is appropriate to employ when taking measurement: Weight of products, ID number of students, body temperature of patients, and risk level of pharmaceutical workers. 4
2. a) What is a frequency distribution? Write down its important parts. 2
b) The following data indicates the obtained marks of 40 students of 3rd semester B. Pharm students of IIUC in a particular course: 8
60, 61, 65, 55, 42, 55, 80, 82, 88, 71, 72, 75, 68, 49, 48, 48, 53, 58, 59, 72, 78, 81, 80, 77, 51, 46, 47, 80, 87, 84, 82, 77, 67, 56, 54, 50, 47, 67, 66, and 60.
(i) Construct a frequency distribution by taking a suitable class interval.
(ii) Draw a histogram from the above data and find mode from it.
3. a) What does central tendency of a data set mean? What are various measures of central tendency? Which is the best measure and why? 5
b) A researcher studied 12 HIV-positive patients who were treated with highly active antiretroviral therapy (HAART) for at least 6 months. The CD4 T-cell counts ($\times 10^6/L$) at baseline for the 12 subjects are listed below: 5
230, 205, 313, 205, 227, 245, 173, 103, 181, 105, 301, 169.
Compute mean, median and mode for the above data.

Group B *(Answer any three questions from the followings)* **Marks: 30**

4. a) Write down the formulas of median and mode in case of group data and explain. 2
b) Find median, mode and 3rd quartile from the following data. 8
Daily expenditure (in Tk.) : 10-30, 30-50, 50-70, 70-90, 90-110
No. of students : 5, 10, 17, 9, 3
5. a) What is meant by dispersion? Define range and mean deviation. 2
b) From the following data, find mean deviation (M.D.) and standard deviation (S.D.) and prove that $S.D. > M.D.$ 8
X: 0, 1, 2, 3, 4, 5
f: 2, 6, 19, 7, 5, 1