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Daffodil International University

Department of Software Engineering

STA101: Statistics I

Batch: 44 **Section: H**

Course Instructor: Aman Ullah Aman .

Full Marks: 15

Q1. **[8 Marks]** For each of the following variables, identify whether it is **Qualitative or Quantitative** and specify its **Scale of Measurement**.

(a) Programming language preferred by a student.

(b) Air temperature in a computer laboratory, measured in Celsius.

(c) Number of errors generated during code compilation.

(d) Software performance category (Poor, Fair, Good, Excellent).

(e) Security authentication method used by a website.

(f) File download duration, measured in seconds.

(g) Cybersecurity risk level (Low, Moderate, High, Critical).

(h) Number of users connected to a server.

Q2. **[7 Marks]** The following observations represent the response times (in milliseconds) of ten requests sent to a web server:

8, 3, 19, 11, 29, 6, 14, 24, 5, 17

Using the given data, answer the following questions.

(a) Calculate the Arithmetic Mean (AM). **[1.5]**

(b) Calculate the Geometric Mean (GM). ***[1.5]***

(c) Calculate the Harmonic Mean (HM). **[1.5]**

(d) Verify that $AM \geq GM \geq HM$. **[1.5]**

(e) Verify whether $AM \times HM = GM^2$. Does equality hold? **[1]**