

# International Islamic University Chittagong

Department of Economics & Banking

Program: BSS (Hons) in Economics & Banking

Course Title: Elementary Statistics

Mid-Term Examination, Spring-2024

Course Code: STAT-1201

Time: 1 hour & 30 minutes

Full Marks: 30

[Answer all of the following questions. Figures in the right margin indicate full marks.]

Q.N	Description of Questions	Marks	CLOs & PLOs	Cognitive-learning																				
1(a).	Sketch out some functions of statistics. Generalize the importance of Statistics in Economics.	4	CLO1	Remember																				
1(b).	Distinguish with example/s between: <ul style="list-style-type: none"> <li>i. Qualitative and Quantitative data</li> <li>ii. Primary data and Secondary Data</li> <li>iii. Population and Sample</li> </ul>	6	CLO1	Understand																				
2(a).	Elucidate characteristics of a good measure of central tendency.	3	CLO2	Create																				
2(b).	* The following frequency distribution relates to the number of hours worked per month of 60 workers of a factory:	7	PLO3																					
<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Class Interval</th> <th style="width: 60%;">Frequency distribution</th> </tr> </thead> <tbody> <tr> <td>30-55</td> <td>8</td> </tr> <tr> <td>55-80</td> <td>13</td> </tr> <tr> <td>80-105</td> <td>22</td> </tr> <tr> <td>105-130</td> <td>11</td> </tr> <tr> <td>130-155</td> <td>6</td> </tr> </tbody> </table>					Class Interval	Frequency distribution	30-55	8	55-80	13	80-105	22	105-130	11	130-155	6								
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3(a).	i) Construct a Histogram. ii) Draw a less than and more than ogive curve. The following table gives the distribution of Yearly Profits (in Taka) of 136 staffs in International Islamic University Chittagong.	7		Analyze																				
<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Yearly profits</th> <th style="width: 25%;">No. of staffs</th> <th style="width: 25%;">Yearly profits</th> <th style="width: 25%;">No. of staffs</th> </tr> </thead> <tbody> <tr> <td>10-20</td> <td>5</td> <td>50-60</td> <td>35</td> </tr> <tr> <td>20-30</td> <td>11</td> <td>60-70</td> <td>22</td> </tr> <tr> <td>30-40</td> <td>17</td> <td>70-80</td> <td>13</td> </tr> <tr> <td>40-50</td> <td>26</td> <td>80-90</td> <td>7</td> </tr> </tbody> </table>					Yearly profits	No. of staffs	Yearly profits	No. of staffs	10-20	5	50-60	35	20-30	11	60-70	22	30-40	17	70-80	13	40-50	26	80-90	7
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3(b).	(i) Calculate the median. (ii) Compute 10 <sup>th</sup> decile, and 40 <sup>th</sup> percentile. There are two sections of 5 <sup>th</sup> semester enrolling 90 and 70 students respectively in the department of Economics & Banking. If arithmetic means of the monthly payments paid by two sections are 4890 and 5685 respectively, find the combined arithmetic mean of the students.	3	CLO2 PLO3	Evaluate																				
<b>OR</b>																								
3(a).	The following are the figures of profits earned by 140 companies during 2022-2023:	7		Analyze																				
<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Profits (Taka. Lakhs)</th> <th style="width: 10%;">20-40</th> <th style="width: 10%;">40-60</th> <th style="width: 10%;">60-80</th> <th style="width: 10%;">80-100</th> <th style="width: 10%;">100-120</th> <th style="width: 10%;">120-140</th> <th style="width: 10%;">140-160</th> </tr> </thead> <tbody> <tr> <td>No. of companies</td> <td>500</td> <td>300</td> <td>280</td> <td>120</td> <td>100</td> <td>80</td> <td>20</td> </tr> </tbody> </table>					Profits (Taka. Lakhs)	20-40	40-60	60-80	80-100	100-120	120-140	140-160	No. of companies	500	300	280	120	100	80	20				
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3(b).	(i) Calculate arithmetic mean by using short cut method. (ii) Calculate mode and its merits and demerits. State Geometric Mean and Harmonic Mean. Prove that the two positive non zero quantities follow arithmetic mean $\geq$ Geometric Mean $\geq$ Harmonic Mean.	3		Evaluate																				