

WESTMINSTER INTERNATIONAL UNIVERSITY IN TASHKENT

Take Home EXAM REFER DEFER SEMESTER JUNE 2021

MODULE CODE: 3BUSS001C

MODULE TITLE: QUANTITATIVE METHODS

DATE SET: 30TH JUNE, 2021, 10:00 AM

SUBMISSION DATE: 30TH JUNE, 2021, 04:00 PM

TIME ALLOWED FOR EXAM: FROM (30/06/2021) 10:00 AM to (30/06/2021) 04:00 PM [6 HOURS]

SUBMISSION LINK:

<https://intranet.wiut.uz/Coursework/UploadsDT?courseworkID=1985>

INSTRUCTIONS TO CANDIDATES:

Please note that this is a take home exam, you will have to submit your answer to the Intranet page of the module. Your answers must be MS Word processed using the answer sheet provided, include your ID as a header.

Do not include any information about your identity, except your ID number, or otherwise, this will cause zero [0] for the assessment component.

There is no late submission on this assessment, failure to submit on time will cause zero [0] for the assessment component, too.

Answer all questions. Indicate clearly question number in your response.

All workings must be shown clearly, otherwise, it may result to zero [0] for the subject questions.

QUANTITATIVE METHODS 2020-2021

REFER DEFER FINAL EXAM

VERSION TWO

Answer **ALL** questions.

Question 1. Find the mean of the dataset below. [10 marks]

<i>Data</i>	<i>Frequency</i>
2	6
4	10
7	5
10	9

Question 2: Find the variance of the dataset below. Assume that the mean equals 4. [10 marks]

<i>Data</i>	<i>Frequency</i>
1	9
2	5
5	9
8	7

Question 3. If you take a dataset and multiply all the observations by 2, would you expect the variance to change? Briefly explain why or why not. (Max 200 words) [10 marks]

Question 4. Below are the seasonal deviations derived from a dataset using an additive model. Find the seasonal variations. [8 marks]

	Q1	Q2	Q3	Q4
Seasonal deviations	30	100	40	-70

Question 5. Using the multiplicative model, find the forecast for Q1, 2022 if the estimated trend for Q1, 2022 is equal to 100. Note that the numbers below have already been adjusted. [7 marks]

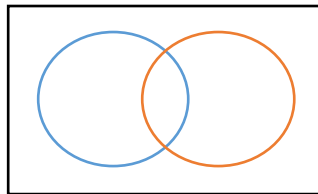
	Q1	Q2	Q3	Q4
Seasonal variations	1.05	1.02	0.95	0.98

Question 6. You flip a coin and roll two 6-sided dice. How many different outcomes are possible?
[5 marks]

Question 7. You roll a 6-sided die and pick a card from a standard stack of 52 playing cards.

If you roll a number less than 3 AND pick a card with a suit of diamonds (\blacklozenge), then you win. What is the probability of winning? [10 marks]

Question 8. Below is a Venn diagram that shows 3 events. *Note: Image is not to scale*



Event A is indicated by the left circle (in blue). Event B is indicated by the right circle (in orange). Event C is anything that is not included in events A or B. The following information about the events are given:

P(A)	40%
P(B)	40%
P(C)	40%

Find $P(A \cup B)$. [10 marks]

Question 9. The following are descriptive statistics about two datasets: X and Y.

Dataset	X	Y
Mean	15	25
Standard deviation	5	10

The correlation between X and Y is 0.5

What is the covariance between X and Y? [10 marks]

Question 10. The following are descriptive statistics about two datasets: X and Y.

Dataset	X	Y
Mean	0	0
Standard deviation	6	10
Variance	36	100
Correlation	0.75	

Find the regression parameter beta (β). [10 marks]

Question 11. Is the mean or the median a better measure of location for the following scenario? Explain your reasoning. (Max 200 words) [10 marks]

Scenario: A student has collected the annual income from a number of randomly selected people in her city, Tritopia. The student has noticed that some of the people surveyed were either unemployed or students. As a result, their annual income was recorded as 0.

– END OF TAKE HOME EXAM –