

**NMIMS Centre for Distance and Online Education (NCDOE)**

**Course:** Quantitative Methods - I

**Internal Assignment Applicable for Dec 2024 Examination**

Assignment Marks: 20

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**Instructions**

- All Questions carry equal marks
- All Questions are compulsory
- All answers to be explained in not more than 1000 words for question Q1 and for question Q2(A) and Q2(B) in not more than 500 words for each subsection. Use relevant examples, illustrations as far as possible
- All answers to be written individually. Discussion and group work is not advisable.
- Students are free to refer to any books/reference material/website/internet for attempting their assignments, but are not allowed to copy the matter as it is from the source of reference.
- Students should write the assignment in their own words. Copying of assignments from other students is not allowed
- Students should follow the following parameter for answering the assignment questions

For Theoretical Answer	
Assessment Parameter	Weightage
Introduction	20%
Concepts and Application related to the question	60%
Conclusion	20%

For Numerical Answer	
Assessment Parameter	Weightage
Understanding and usage of the formula	20%
Procedure / Steps	60%
Correct Answer & Interpretation	20%

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**PLEASE NOTE:** This assignment is application based, you have to apply what you have learnt in this subject into real life scenario. You will find most of the information through internet search and the remaining from your common sense. None of the answers appear directly in the textbook chapters but are based on the content in the chapter

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**Q1. Explain the following concepts**

- Difference between point estimate and interval estimate. (2 Marks)
- Concept of confidence interval for any estimate (Mean / Proportion). (2 Marks)

**And solve the following question**

A sample of 30 students' test scores is randomly selected from a large class. The sample has a mean score of 85 points and a standard deviation of 6 points. Calculate the 99% and 95% confidence intervals for the population mean. (6 Marks)

**(10 Marks)**

**Q2 (A)** The monthly rent paid by a group of 15,000 tenants in a city is found to be normally distributed with a mean of 12,000 and a standard deviation of 1,500. Answer the following questions:

- a) What is the probability that a tenant selected at random pays more than 10,500 in rent?
- b) What is the probability that a tenant selected at random pays more than 14,700 in rent ?

**(5 Marks)**

**Q2 (B)** A pharmaceutical company claims that its new drug reduces the average recovery time from the flu to less than 7 days. Historically, the average recovery time for the flu without the drug is 7 days. To test this claim, the company conducted a study with 50 patients who took the new drug. The sample mean recovery time was 6.5 days with a population standard deviation of 2 days. Can we accept the company's claim at the 5% level of significance?

**(5 Marks)**

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