



CDC313|COU4113|COM301 STATISTICS

SEPTEMBER SEMESTER 2021 END TERM EXAM ONLINE

DURATION: 3 HOURS

INSTRUCTIONS

- i) This exam contains 3 questions.**
- ii) Answer ANY TWO questions.**
- iii) Round off your answers to the nearest 1 Decimal Place**
- iv) Show all your workings on the Answer Sheet**

QUESTION 1

20 MARKS

The following table contains the distribution of countries by world happiness index

Number of countries	World happiness index
13	1 – 20
16	21- 40
20	41 – 60
40	61 – 80
40	81 – 100
65	101 – 120
1	121 – 140

- a) Determine the mean happiness index (8 marks)
- b) Compute the coefficient of variation for the index (12 marks)

QUESTION 2**20 MARKS**

The following multimodal dataset relates to the time taken by 9 jobseekers to complete a psychometric test for a job interview.

7, 3, 7, 6, 4, 7, 3, 5, 3

- a) Compute the coefficient of quartile deviation (8 marks)
- b) Work out Karl Pearson's coefficient of skewness (12 marks)

QUESTION 3**20 MARKS**

Since the outbreak of Covid-19 pandemic, a local TV subscription channel observed that viewership for its comic shows skyrocketed.

A student of statistics theorized that it was probably because comic shows relieved Covid-induced anxiety. She referred to this phenomenon as 'Comic Relief'. To test her theory, the student proceeded to collect data from a random sample of 6 subscribers.

The student measured Covid-induced anxiety using a 7-point Likert scale ranging from 0= no anxiety to 7=very high anxiety. Respondent's corresponding comic relief was measured in hours.

The student recorded her data in the table below:

Comic relief	5	3	8	4	5	10
Covid-induced anxiety	3	7	2	1	6	2

Using linear regression modelling:

- a) Calculate the subscribers' level of anxiety when there is no comic relief (14 marks)
- b) Estimate the hours of comic relief that would be needed to eliminate anxiety completely (6 marks)

