

**FINAL EXAMINATION**  
**NOVEMBER 2022**

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<b>COURSE TITLE</b>	<b>BUSINESS STATISTICS</b>
<b>COURSE CODE</b>	<b>RMAT3213/BMAT2223/RMAT3213</b>
<b>DATE/DAY</b>	<b>14 FEBRUARY 2023 / TUESDAY</b>
<b>TIME/DURATION</b>	<b>09:00 AM - 11:00 AM / 02 Hour(s) 00 Minute(s)</b>

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**INSTRUCTIONS TO CANDIDATES :**

1. Please read the instruction under each section carefully.
2. Candidates are reminded not to bring into examination hall/room any form of written materials or electronic gadget except for stationery that is permitted by the Invigilator.
3. Students who are caught breaching the Examination Rules and Regulation will be charged with an academic dishonesty and if found guilty of the offence, the maximum penalty is expulsion from the University.

(This Question Paper consists of <sup>3</sup> ~~4~~ Printed Pages including front page)

There are SEVEN (7) questions in this section. Answer ALL questions in the answer booklet.

(75 marks)

**Question 1**

A random sample of size of 12 taken from the population which is normally distributed with a mean 38 and variance of 12. Find the probability that the sample mean

- a. is less than 36 (3 marks)
- b. is not more than 40.5 (3 marks)
- c. lies between 37.2 and 40.8 (4 marks)

**Question 2**

X	0	1	2	3
P(X=x)	0.1	p	0.3	q

If  $E(X)=1.5$ , find the value of p and q. (6 marks)

**Question 3**

The normal variable X has a normal distribution with a mean of  $\mu$  and variance of 9. A random sample of 20 observation of X has a mean of 9.8. Construct (15 marks)

- a. a symmetrical 95% confidence interval for  $\mu$  (7 marks)
- b. a symmetrical 99% confidence interval for  $\mu$  (8 marks)

**Question 4**

X	Y
4	4
5	6
3	5
6	7
10	7
9	6

Determine the regression equation. (15 marks)

### Question 5

In a survey carried out it is found that 20% of the students go to school by bicycle. (9 marks)

- a) If 10 students are chosen at random find the probability that half of them go to school by bicycle (5 marks)
- b) If there are 6 000 students find the mean and standard deviation of students whom cycle to school. (4 marks)

### Question 6

If 70% of the electorate supports in Tanjung support Kamal the ruling party find the probability from a sample of 10 people, less than three support Kamal in Tanjung. (10 marks)

### Question 7

A fruit stall sells tomatoes, apricots and plums. The weights of plums are normally distributed with a mean of 80 grams and standard deviation 4 grams. Five plums are chosen at random, find the probability exactly three of them weigh more than 82 grams. (10 marks)

\*\*\* END OF QUESTION PAPER \*\*\*