UNIRAZAK
UNIVERSITI TUN ABDUL RAZAK

FINAL EXAMINATION

NOVEMBER 2022

COURSE TITLE	**STATISTICS FOR SOCIAL SCIENCE**
COURSE CODE	**BMAT2213/BMAT2233**
DATE/DAY	**14 FEBRUARY 2023 / TUESDAY**
TIME/DURATION	**09:00 AM - 11:00 AM / 02 Hour(s) 00 Minute(s)**

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 4 3 Printed Pages including front page)

DO NOT OPEN THE QUESTION PAPER UNTIL YOU ARE TOLD TO DO SO

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

(75 Marks)

1. There are 20 Malays, x Indians and 10 Chinese students in class 5A. Find the value x for each of the following: (5 marks)

   a) if the probability of choosing Malay is $\frac{4}{9}$ (3 marks)

   b) if the probability of choosing an Indian student is $\frac{1}{4}$ (2 marks)

2. A stall sells potatoes. The weights of potatoes are normally distributed with a mean of 85 grams and standard deviation 5 grams. Five potatoes are chosen at random, find the probability (10 marks)

   a) exactly three of them weigh more than 82 grams (5 marks)

   b) at least one tomato is more than 82 grams (5 marks)

3. The table below shows the years of experience of 120 employees of Uni Razak. (15 marks)

Years of experience	Number of employees
$1-4$	16
$5-8$	20
$9-12$	28
$13-16$	24
$17-20$	16
$21-24$	11
$25-28$	5

Calculate:

a) Mean (5 marks)

b) Median (5 marks)

c) Mode (5 marks)

4. (10 marks)

a) Find the skew of this data set:

2,2,3,4,5,6

Calculate Pearson's Coefficient of Skewness for above sample. (5 marks)

b) Find the standard deviation of the sample data below:

3 5 6 9 (5 marks)

5. If the probability that a relationship will end in a breakup within 2 years is 0.3. Find the probability that in a sample16 couples,3 or less will end in breakup within 2 years of the relationship. (15 marks)

6. The number of trees planted at FRIM is not more than four trees in a day.

The probability that there is no trees planted in a day is 0.4 and the probabilities that there are at most one, two and three trees planted in a day are 0.7, 0.85 and 0.95 respectively. (10 marks)

a) Construct a probability distribution table for the number of trees planted. (5 marks)
b) Calculate the mean of the number of trees planted in a day. (5 marks)

7. The masses of guavas in a farm are normally distributed with a mean μ and a standard deviation, σ.The mass of percentages of guava that less than 400 g is 15.87% and more than 500 g is 6.68%.

Determine the values of μ and σ (10 marks)

*** END OF QUESTION PAPER ***