23/03/2021 AN order

D 90235 (Pages : 2) Name.....

Reg. No.....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2020

(CUCBCSS—UG)

Mathematics

MAT 5D 18—MATHEMATICS FOR NATURAL SCIENCES

Time : Two Hours Maximum : 40 Marks

Part A

All questions to be attended.
Each question carries 1 *mark.*

1. What is a finite set ?
2. What is a transitive relation ?
3. Give an example for a continuous characteristic ?
4. Find power set of A if $A = \{2, 3, 4\}$?
5. What is Pearsons measure of skewness ?
6. What is the empirical relation between Mean, Median, Mode ?

(6 × 1 = 6 marks)

Part B

All questions can be attended and overall ceiling.
Each question carries 2 *marks.*

7. What is a Questionaire ?
8. If $A = \{2, 4, 6\}$ and $B = \{1, 2, 5, 6\}$ find $A \cap B$ and $A \cup B$.
9. Define bijective function with example.
10. What is a raw moment ?
11. Find the arithmetic mean of first 100 natural numbers.
12. What is Sampling ?
13. Calculate the geometric, mean of the following observations :

    34, 56, 7, 65, 87.6, 43, 87.65, 67.20.30

(5 × 2 = 10 marks)

Turn over

Part C

All questions can be attended and overall ceiling.
Each question carries 4 marks.

14 Explain about a frequency distribution.

15 What is Venn diagram ? Represent set operations using venn diagrams.

16 Find the arithmetic mean for the following frequency distribution of marks of 150 students :

Marks	:	0–40	40–50	50–60	60–70	70–80	80–90	90–100
No. of students	:	10	45	25	30	20	15	5

17 What is Dispersion ? Briefly explain various measures of dispersion.

18 The mean and median of a frequency distribution are 23.2 and 25.5 respectively. Find the approximate value of its mode.

(3 × 4 = 12 marks)

Part D

All questions can be attended and overall ceiling.
Each question carries 6 marks.

19 Find the quartile deviation for the following data :

Class	:	0–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80
Frequency	:	1	8	10	15	12	8	5	1

20 What are different methods in classification of data ?

21 Draw histogram for the following data :

Income	:	0–50	50–100	100–200	200–300	300–400
No. of families	:	60	60	70	30	30

(2 × 6 = 12 marks)