Enrollment No.

#### Shree Manibhai Virani and Smt. Navalben Virani Science College (Autonomous) Affiliated to Saurashtra University, Baikot

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### **SEMESTER END EXAMINATION APRIL – 2017**

**Bachelor of Computer Application / B.Sc. Information Technology** 

## 16UCADA02 / 16UITDA02 - MATHEMATICS & STATISTICS -II

Duration of Exam - 3 hrsSemester - IIMax. Marks - 70

<u>Part A</u> (10x1= 10 marks) Answer <u>ALL</u> questions

- 1. Write the equation of the line passing through origin & having slope m.
- 2. Write formula to find slope between two points.
- 3. Backward difference operator is denoted by which symbol?
- 4. The process of finding the value of a function inside the given range of argument is called \_\_\_\_\_
- 5.  $A \_ G \_ H$ a)  $\geq$  b) c) = d) None
- 6. For an A.P. if first term = 1, last term = 9 find  $S_{12}$ .
- 7. Least Cost Method is also known as \_\_\_\_\_
- 8. What is full form of NWCM?
- 9. Generally Median is denoted by\_\_\_\_\_
- 10. Find range: 5, 3, 10, 8, 4

# <u>Part B</u> (5X5 = 25 marks)

## Answer <u>ALL</u> questions

- 11a. Find co-ordinates of the point which divides (1, 4) & (3, 9) internally in the ratio 2:1
- OR
- 11b. Verify that the line passing through the points (-8, 3) & (2, 1) is parallel to the line passing through the points (11, -1) & (6, 0).
- 12a. For an A.P.  $S_8 = 124 \& S_{11} = 220 \text{ find } T_{30} \& S_{30}$

## OR

12b. The A.M. & G.M. of two numbers are 20 & 12 resp. Find numbers.

13a. Construct forward difference table from the following data

X	30	40	50	60	70	80
У	10	12	24	20	30	5

OR

13b. Construct backward difference table from the following data

X	30	40	50	60	70	80
У	10	20	25	20	10	3

## 14a. From the following transportation problem find initial solution using LCM.

ТО						
		$D_1$	$D_2$	<b>D</b> <sub>3</sub>	$D_4$	S
	$S_1$	5	3	6	4	30
FROM	$S_2$	3	4	7	8	15
	<b>S</b> <sub>3</sub>	9	6	5	8	15
	D	10	25	18	7	60

## OR

## 14b. From the following transportation problem find initial solution using NWCM.

		<b>D</b> <sub>1</sub>	$D_2$	D <sub>3</sub>	S
	$\mathbf{S}_1$	6	8	10	150
FROM	$\mathbf{S}_2$	7	11	11	175
	$S_3$	4	5	12	275
	D	200	100	300	600

#### 15a. Find Mean:

Class	0-10	10-20	20-30	30-40	40-50	50-60
f	8	7	16	24	15	10

#### OR

15b. Find S.D.

Х	6	7	8	9	10	11	12
f	3	6	9	13	8	5	4

## <u>Part C</u> (5X7 = 35 marks) Answer <u>ALL</u> questions

16a. Verify that (3, 2), (5, 4), (3, 6) & (1, 4) are the vertices of a square.

## OR

16b. Find the equation of a line passing through (3, 1) & parallel to the line x + 2y + 7 = 0.

17a. Three numbers are in A.P. Their sum is 30. If 1 is added to first number & 4 is added to third number, we get G.P. Find numbers.

## OR

17b.

Verify that 
$$\frac{5\lambda + 4a}{A-b} + \frac{5\lambda + 4b}{A-a} = 8$$

18a. Find f(105) by N.B.I.

X	80	85	90	95	100
у	5026	5674	6362	7088	7854

OR

18b. Find f(10) by Lagrange's Interpolation

Х	5	6	9	11
у	12	13	14	16

#### ТО $D_1$ $D_2$ $D_3$ $D_4$ S $\mathbf{S}_1$ 10 2 20 11 15 7 FROM $S_2$ 12 9 25 20 **S**<sub>3</sub> 4 14 10 16 18 D 5 15 15 15 50

## 19a From the following transportation problem find initial solution using Vogel's method

## OR

## 19b. From the following transportation problem find initial solution using Vogel's method

		$D_1$	D <sub>2</sub>	D <sub>3</sub>	S
	$S_1$	2	7	4	5
FROM	$S_2$	3	3	1	8
	$S_3$	5	4	7	7
	$\mathbf{S}_4$	1	6	2	14
	D	7	9	18	34

## $20a. \quad Find \ Q_1 \ and \ Q_3$

Class	50 -	100-	150 -	200 -	250 -	300 -	350 -	400 -
	100	150	200	250	300	350	400	450
f	15	40	35	60	125	100	70	55

## OR

20b. Find missing frequencies for which M = 46

Class	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80	Total
f	12	-	34	65	45	-	19	230