



राष्ट्रीयसंस्कृतविश्वविद्यालयः, तिरुपतिः

ONLINE CERTIFICATE PROGRAMME IN

RESEARCH METHODOLOGY IN SANSKRIT EDUCATION (RMSE)

**F Test**

डा. सोमाशि लक्ष्मीसीतारामशर्मा  
सहायकाचार्यः, शिक्षाविभागः  
राष्ट्रीयसंस्कृतविश्वविद्यालयः, तिरुपतिः

$$\mathbf{F} = \frac{\mathbf{MS}(\mathbf{Between\ the\ Groups})}{\mathbf{MS\ (With\ in\ Groups)}}$$

**A**

10

7

6

10

4

3

2

1

8

9

$$60/10 = 6$$

**B**

3

3

3

3

3

3

3

3

3

3

$$30 / 3 = 3$$

**C**

10

11

10

5

6

8

9

12

9

10

$$90/10 = 9$$

**A**

$$10 - 6 = 4$$

$$7 - 6 = 1$$

$$6 - 6 = 0$$

$$10 - 6 = 4$$

$$4 - 6 = -2$$

$$3 - 6 = -3$$

$$2 - 6 = -4$$

$$1 - 6 = -5$$

$$8 - 6 = 2$$

$$9 - 6 = 3$$

$$60/10 = 6$$

**B**

$$3 - 3 = 0$$

$$3 - 3 = 0$$

$$3 - 3 = 0$$

$$3 - 3 = 0$$

$$3 - 3 = 0$$

$$3 - 3 = 0$$

$$3 - 3 = 0$$

$$3 - 3 = 0$$

$$3 - 3 = 0$$

$$3 - 3 = 0$$

$$30 / 3 = 3$$

**C**

$$10 - 9 = 1$$

$$11 - 9 = 2$$

$$10 - 9 = 1$$

$$5 - 9 = -4$$

$$6 - 9 = -3$$

$$8 - 9 = -1$$

$$9 - 9 = 0$$

$$12 - 9 = 3$$

$$9 - 9 = 0$$

$$10 - 9 = 1$$

$$90/10 = 9$$

**A**

$10 - 6 = 4 = 16$

$7 - 6 = 1 = 1$

$6 - 6 = 0 = 0$

$10 - 6 = 4 = 16$

$4 - 6 = -2 = 4$

$3 - 6 = -3 = 9$

$2 - 6 = -4 = 16$

$1 - 6 = -5 = 25$

$8 - 6 = 2 = 4$

$9 - 6 = 3 = 9$

$60/10 = 6 \quad 100$

**B**

$3-3 = 0$

$3-3 = 0$

$3-3 = 0$

$3-3 = 0$

$3-3 = 0$

$3-3 = 0$

$3-3 = 0$

$3-3 = 0$

$3-3 = 0$

$3-3 = 0$

$30 / 3 = 3 \quad 0$

**C**

$10 - 9 = 1 = 1$

$11 - 9 = 2 = 4$

$10 - 9 = 1 = 1$

$5 - 9 = -4 = 16$

$6 - 9 = -3 = 9$

$8 - 9 = -1 = 1$

$9 - 9 = 0 = 0$

$12 - 9 = 3 = 9$

$9 - 9 = 0 = 0$

$10 - 9 = 1 = 1$

$90/10 = 9 \quad 42 =$

$60/10 = 6 - 6 = 0$	$30 / 3 = 3 - 6 = -3$	$90/10 = 9 - 6 = 3$
$18/3 = 06$	$0$	$9$
$nd^2$	$0$	$90$
		$90 = 180$
$\sum nd^2$	$180$	$2 = 90$
$\sum x^2$	$142$	$= 5.26$

$$F \text{ (cal)} = \frac{MS(\text{Between the Groups})}{MS \text{ (With in Groups)}} = \frac{90}{5.26} = 17.11$$

$$F \text{ Cri } 2, 27 \text{ df } (0.05) = 3.35$$

**Table A4: 5% Critical Values of the F Distribution**

		Numerator Degrees of Freedom									
		1	2	3	4	5	6	7	8	9	10
Denominator Degrees of Freedom	10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02	2.98
	11	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90	2.85
	12	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80	2.75
	13	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71	2.67
	14	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65	2.60
	15	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59	2.54
	16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54	2.49
	17	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49	2.45
	18	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46	2.41
	19	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42	2.38
	20	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39	2.35
	21	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37	2.32
	22	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34	2.30
	23	4.28	3.42	3.03	2.80	2.64	2.53	2.44	2.37	2.32	2.27
	24	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30	2.25
	25	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28	2.24
	26	4.23	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27	2.22
	27	4.21	3.35	2.96	2.73	2.57	2.46	2.37	2.31	2.25	2.20
	28	4.20	3.34	2.95	2.71	2.56	2.45	2.36	2.29	2.24	2.19
	29	4.18	3.33	2.93	2.70	2.55	2.43	2.35	2.28	2.22	2.18
	30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21	2.16
	40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12	2.08
	60	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04	1.99
	90	3.95	3.10	2.71	2.47	2.32	2.20	2.11	2.04	1.99	1.94
	120	3.92	3.07	2.68	2.45	2.29	2.17	2.09	2.02	1.96	1.91
$\infty$	3.84	3.00	2.60	2.37	2.21	2.10	2.01	1.94	1.88	1.83	

उदा -

	1	2	3	4	5
	70	70	70	70	70
	50	60	70	80	90
	55	55	70	75	95
	40	50	70	90	100
	60	60	60	60	60
	275	295	340	375	415
M	55	59	68	75	83
N	5	5	5	5	5
	4	4	4	4	4 = 20



उदा -

1	2	3	4	5
15=225	11=121	2=4	-5=25	-13=169
-5=25	1=1	2=4	5=25	7=49
0=0	-4=16	2=4	0=0	12=144
-15=225	-9=81	2=4	15=225	17=289
5=25	1=1	-8=64	-15=225	-23=529
500	220	80	500	1180 $\sum x^2s =$

2480

275	295	340	375	415
M 55	59	68	75	83

M 55                    59                    68                    75                    83                    = 68

-13                    -9                    0                    7                    15

d<sup>2</sup> 169                    81                    0                    49                    225

nd<sup>2</sup> 845                    405                    0                    245                    1125 =  $\sum nd^2 =$

$\sum nd^2 = 2620$   
                   2620    4                    = 655

$\sum x^2 = 2480$     20                    = 124

$$F \text{ (cal.)} = \frac{MS(\text{Between the Groups})}{MS \text{ (With in Groups)}} = \frac{655}{124} = 5.28$$

F Cri 4, 20 df (0.05) = 2.87