

BACHELOR OF ARTS EXAMINATION, 2019

(2nd Year, 4th Semester)

SOCIOLOGY

RESEARCH METHODS AND SOCIAL STATISTICS - II

PAPER – 4.2

Time : Two hours

Full Marks : 30

Answer to each module should be written in a separate script

MODULE -I

Answer *question no.1* and any one from the remaining questions

1. Write a short note on anyone of the following : 5×1=5
 - a) Define statistics and its importance in Social science.
 - b) Levels of measurement with suitable examples.
2. Define Histogram and write its features. Construct a histogram for the following data : 10×1=10
3, 5, 8, 11, 13, 19, 23, 22, 25, 3, 10, 21, 14, 9, 12, 17, 22, 23, 14
3. What is an 'Ogive'? In which level of measurement is 'Ogive' applied? Construct an Ogive for the following data. 10×1=10

Class Interval	Frequency
60-70	2
70-80	5
80-80	12

Frequency

Class Interval

31	90-100	1.45
39	100-110	1.66
10	110-120	1.67
04	120-130	1.68

MODULE - II

Answer *question no.1* and any one from the remaining questions
 1. Write a short note on any one of the following : $5 \times 1 = 5$

a) Define 'Measures of Dispersion'. Briefly describe the properties of Standard Deviation and Variance.

b) Describe Bivariate Association with special reference to 'Correlation' (pearson's r).

2. The height of the players (in centimeters) from a basketball team are represented by the table.

Height in Cms.	No. of Players.
170-176	1
175-180	3
180-185	3
185-190	5
190-195	2

Table A (continued)

(A)	(B)	(C)	(D)	(E)	(F)
MEAN AND BETWEEN AREA	MEAN AND BETWEEN AREA	MEAN AND BETWEEN AREA	MEAN AND BETWEEN AREA	MEAN AND BETWEEN AREA	MEAN AND BETWEEN AREA
1.45	2.22	0.464	0.0132	2.79	0.4974
1.66	2.25	0.4878	0.0122	2.82	0.4974
1.67	2.26	0.4975	0.0125	2.81	0.4975
1.68	2.25	0.4878	0.0122	2.82	0.4974
1.69	2.26	0.4975	0.0125	2.81	0.4975
1.70	2.27	0.4884	0.0116	2.84	0.4977
1.71	2.28	0.4887	0.0113	2.85	0.4978
1.72	2.29	0.4980	0.0110	2.86	0.4979
1.73	2.30	0.4875	0.0107	2.87	0.4979
1.74	2.31	0.4884	0.0104	2.88	0.4980
1.75	2.32	0.4978	0.0102	2.89	0.4981
1.76	2.33	0.4975	0.0099	2.90	0.4981
1.77	2.34	0.4904	0.0096	2.92	0.4982
1.78	2.35	0.4904	0.0094	2.92	0.4982
1.79	2.36	0.4975	0.0091	2.93	0.4983
1.80	2.37	0.4971	0.0088	2.94	0.4984
1.81	2.38	0.4973	0.0087	2.95	0.4984
1.82	2.39	0.4976	0.0084	2.96	0.4985
1.83	2.40	0.4978	0.0082	2.97	0.4985
1.84	2.41	0.4979	0.0080	2.98	0.4986
1.85	2.42	0.4979	0.0078	2.98	0.4986
1.86	2.43	0.4975	0.0075	2.99	0.4987
1.87	2.44	0.4975	0.0073	3.01	0.4987
1.88	2.45	0.4975	0.0071	3.02	0.4987
1.89	2.46	0.4975	0.0069	3.03	0.4988
1.90	2.47	0.4972	0.0068	3.04	0.4988
1.91	2.48	0.4973	0.0064	3.05	0.4989
1.92	2.49	0.4973	0.0064	3.06	0.4989
1.93	2.50	0.4973	0.0062	3.07	0.4989
1.94	2.51	0.4970	0.0060	3.08	0.4990
1.95	2.52	0.4972	0.0059	3.10	0.4990
1.96	2.53	0.4972	0.0057	3.10	0.4990
1.97	2.54	0.4972	0.0056	3.11	0.4991
1.98	2.55	0.4972	0.0054	3.12	0.4991
1.99	2.56	0.4970	0.0052	3.13	0.4991
2.00	2.57	0.4970	0.0051	3.14	0.4992
2.01	2.58	0.4970	0.0049	3.15	0.4992
2.02	2.59	0.4970	0.0048	3.16	0.4992
2.03	2.60	0.4970	0.0047	3.17	0.4992
2.04	2.61	0.4970	0.0045	3.18	0.4993
2.05	2.62	0.4970	0.0044	3.19	0.4993
2.06	2.63	0.4970	0.0042	3.20	0.4993
2.07	2.64	0.4970	0.0041	3.21	0.4993
2.08	2.65	0.4970	0.0040	3.22	0.4994
2.09	2.66	0.4970	0.0039	3.23	0.4994
2.10	2.67	0.4970	0.0038	3.24	0.4994
2.11	2.68	0.4970	0.0037	3.25	0.4995
2.12	2.69	0.4970	0.0036	3.26	0.4995
2.13	2.70	0.4970	0.0035	3.27	0.4995
2.14	2.71	0.4970	0.0034	3.28	0.4995
2.15	2.72	0.4970	0.0033	3.29	0.4995
2.16	2.73	0.4970	0.0032	3.30	0.4995
2.17	2.74	0.4970	0.0031	3.31	0.4995
2.18	2.75	0.4970	0.0030	3.32	0.4995
2.19	2.76	0.4970	0.0029	3.33	0.4995
2.20	2.77	0.4970	0.0028	3.34	0.4995
2.21	2.78	0.4970	0.0027	3.35	0.4995

Table A Proportions of area under the normal curve

(A) z	(B) AREA BETWEEN MEAN AND z	(C) AREA BEYOND z	(A) z	(B) AREA BETWEEN MEAN AND z	(C) AREA BEYOND z	(A) z	(B) AREA BETWEEN MEAN AND z	(C) AREA BEYOND z
0.00	0.0000	0.5000	0.55	0.2088	0.2912	1.10	0.3643	0.3557
0.01	0.0040	0.4960	0.56	0.2123	0.2877	1.11	0.3665	0.3335
0.02	0.0080	0.4920	0.57	0.2157	0.2843	1.12	0.3686	0.3114
0.03	0.0120	0.4880	0.58	0.2190	0.2810	1.13	0.3706	0.2892
0.04	0.0160	0.4840	0.59	0.2224	0.2776	1.14	0.3725	0.2671
0.05	0.0199	0.4801	0.60	0.2257	0.2743	1.15	0.3744	0.2451
0.06	0.0239	0.4761	0.61	0.2291	0.2709	1.16	0.3762	0.2230
0.07	0.0279	0.4721	0.62	0.2324	0.2674	1.17	0.3780	0.2010
0.08	0.0319	0.4681	0.63	0.2357	0.2643	1.18	0.3810	0.1790
0.09	0.0359	0.4641	0.64	0.2389	0.2611	1.19	0.3830	0.1570
0.10	0.0398	0.4601	0.65	0.2421	0.2579	1.20	0.3849	0.1351
0.11	0.0438	0.4562	0.66	0.2453	0.2544	1.21	0.3868	0.1131
0.12	0.0478	0.4522	0.67	0.2484	0.2514	1.22	0.3888	0.1112
0.13	0.0517	0.4483	0.68	0.2517	0.2483	1.23	0.3907	0.1093
0.14	0.0557	0.4443	0.69	0.2549	0.2451	1.24	0.3925	0.1075
0.15	0.0598	0.4404	0.70	0.2580	0.2420	1.25	0.3944	0.1056
0.16	0.0638	0.4364	0.71	0.2611	0.2389	1.26	0.3962	0.1038
0.17	0.0678	0.4325	0.72	0.2642	0.2358	1.27	0.3980	0.1020
0.18	0.0718	0.4285	0.73	0.2673	0.2327	1.28	0.3997	0.1003
0.19	0.0758	0.4247	0.74	0.2704	0.2296	1.29	0.4015	0.0985
0.20	0.0799	0.4207	0.75	0.2734	0.2266	1.30	0.4032	0.0968
0.21	0.0839	0.4168	0.76	0.2764	0.2236	1.31	0.4049	0.0951
0.22	0.0879	0.4129	0.77	0.2794	0.2206	1.32	0.4066	0.0934
0.23	0.0919	0.4090	0.78	0.2823	0.2177	1.33	0.4082	0.0918
0.24	0.0958	0.4052	0.79	0.2852	0.2146	1.34	0.4099	0.0901
0.25	0.0997	0.4013	0.80	0.2881	0.2115	1.35	0.4115	0.0885
0.26	0.1036	0.3974	0.81	0.2910	0.2085	1.36	0.4131	0.0869
0.27	0.1074	0.3935	0.82	0.2939	0.2054	1.37	0.4147	0.0853
0.28	0.1113	0.3897	0.83	0.2967	0.2023	1.38	0.4162	0.0838
0.29	0.1151	0.3859	0.84	0.2995	0.2000	1.39	0.4177	0.0823
0.30	0.1189	0.3821	0.85	0.3023	0.1977	1.40	0.4192	0.0808
0.31	0.1227	0.3783	0.86	0.3051	0.1949	1.41	0.4207	0.0793
0.32	0.1265	0.3745	0.87	0.3078	0.1922	1.42	0.4222	0.0778
0.33	0.1303	0.3707	0.88	0.3104	0.1894	1.43	0.4236	0.0764
0.34	0.1341	0.3669	0.89	0.3131	0.1866	1.44	0.4251	0.0749
0.35	0.1378	0.3632	0.90	0.3157	0.1841	1.45	0.4265	0.0735
0.36	0.1416	0.3594	0.91	0.3183	0.1814	1.46	0.4279	0.0721
0.37	0.1453	0.3557	0.92	0.3212	0.1788	1.47	0.4292	0.0708
0.38	0.1490	0.3520	0.93	0.3236	0.1762	1.48	0.4306	0.0694
0.39	0.1527	0.3483	0.94	0.3264	0.1736	1.49	0.4319	0.0681
0.40	0.1564	0.3446	0.95	0.3289	0.1711	1.50	0.4332	0.0668
0.41	0.1591	0.3409	0.96	0.3315	0.1685	1.51	0.4345	0.0655
0.42	0.1628	0.3372	0.97	0.3340	0.1660	1.52	0.4357	0.0643
0.43	0.1664	0.3334	0.98	0.3365	0.1635	1.53	0.4370	0.0630
0.44	0.1700	0.3298	0.99	0.3389	0.1611	1.54	0.4382	0.0618
0.45	0.1736	0.3261	1.00	0.3413	0.1587	1.55	0.4394	0.0606
0.46	0.1772	0.3224	1.01	0.3438	0.1562	1.56	0.4406	0.0594
0.47	0.1808	0.3187	1.02	0.3461	0.1539	1.57	0.4418	0.0582
0.48	0.1844	0.3151	1.03	0.3485	0.1515	1.58	0.4429	0.0571
0.49	0.1879	0.3115	1.04	0.3508	0.1492	1.59	0.4441	0.0559
0.50	0.1915	0.3083	1.05	0.3531	0.1469	1.60	0.4452	0.0548
0.51	0.1950	0.3050	1.06	0.3554	0.1444	1.61	0.4463	0.0537
0.52	0.1985	0.3015	1.07	0.3577	0.1423	1.62	0.4474	0.0526
0.53	0.2019	0.2981	1.08	0.3599	0.1401	1.63	0.4484	0.0516
0.54	0.2054	0.2946	1.09	0.3621	0.1379	1.64	0.4495	0.0505

Calculate the standard Deviation and interpret the results.

(10)

3. An examinee has scored 79 in first semester Statistics test.

The mean score of the class is 80 and the standard deviation 5.6. The student is eager to know her percentile rank. Which statistical method should she apply to know that ?

(10)

Table A Proportions of area under the normal curve

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
AREA BETWEEN MEAN AND z	AREA BETWEEN MEAN AND z	AREA BETWEEN MEAN AND z	AREA BETWEEN MEAN AND z	AREA BETWEEN MEAN AND z	AREA BETWEEN MEAN AND z	AREA BETWEEN MEAN AND z	AREA BETWEEN MEAN AND z	AREA BETWEEN MEAN AND z	AREA BETWEEN MEAN AND z
0.00	0.0000	0.3000	0.55	0.2008	0.7912	0.2912	0.55	0.2008	0.7912
0.01	0.0040	0.3040	0.55	0.2123	0.7877	0.2877	0.55	0.2123	0.7877
0.02	0.0080	0.3080	0.55	0.2157	0.7843	0.2843	0.55	0.2157	0.7843
0.03	0.0120	0.3120	0.55	0.2190	0.7810	0.2810	0.55	0.2190	0.7810
0.04	0.0160	0.3160	0.55	0.2224	0.7776	0.2776	0.55	0.2224	0.7776
0.05	0.0199	0.3199	0.55	0.2257	0.7743	0.2743	0.55	0.2257	0.7743
0.06	0.0239	0.3239	0.55	0.2291	0.7709	0.2709	0.55	0.2291	0.7709
0.07	0.0279	0.3279	0.55	0.2324	0.7676	0.2676	0.55	0.2324	0.7676
0.08	0.0319	0.3319	0.55	0.2357	0.7643	0.2643	0.55	0.2357	0.7643
0.09	0.0359	0.3359	0.55	0.2389	0.7611	0.2611	0.55	0.2389	0.7611
0.10	0.0398	0.3398	0.55	0.2422	0.7578	0.2578	0.55	0.2422	0.7578
0.11	0.0438	0.3438	0.55	0.2454	0.7546	0.2546	0.55	0.2454	0.7546
0.12	0.0478	0.3478	0.55	0.2486	0.7514	0.2514	0.55	0.2486	0.7514
0.13	0.0517	0.3517	0.55	0.2517	0.7482	0.2482	0.55	0.2517	0.7482
0.14	0.0557	0.3557	0.55	0.2549	0.7451	0.2451	0.55	0.2549	0.7451
0.15	0.0596	0.3596	0.55	0.2580	0.7420	0.2420	0.55	0.2580	0.7420
0.16	0.0636	0.3636	0.55	0.2611	0.7389	0.2389	0.55	0.2611	0.7389
0.17	0.0675	0.3675	0.55	0.2642	0.7358	0.2358	0.55	0.2642	0.7358
0.18	0.0714	0.3714	0.55	0.2673	0.7327	0.2327	0.55	0.2673	0.7327
0.19	0.0753	0.3753	0.55	0.2704	0.7296	0.2296	0.55	0.2704	0.7296
0.20	0.0792	0.3792	0.55	0.2734	0.7266	0.2266	0.55	0.2734	0.7266
0.21	0.0831	0.3831	0.55	0.2764	0.7236	0.2236	0.55	0.2764	0.7236
0.22	0.0871	0.3871	0.55	0.2794	0.7206	0.2206	0.55	0.2794	0.7206
0.23	0.0910	0.3910	0.55	0.2823	0.7176	0.2176	0.55	0.2823	0.7176
0.24	0.0948	0.3948	0.55	0.2852	0.7146	0.2146	0.55	0.2852	0.7146
0.25	0.0987	0.3987	0.55	0.2881	0.7116	0.2116	0.55	0.2881	0.7116
0.26	0.1026	0.4026	0.55	0.2910	0.7086	0.2086	0.55	0.2910	0.7086
0.27	0.1064	0.4064	0.55	0.2939	0.7056	0.2056	0.55	0.2939	0.7056
0.28	0.1103	0.4103	0.55	0.2967	0.7026	0.2026	0.55	0.2967	0.7026
0.29	0.1141	0.4141	0.55	0.2995	0.6996	0.1996	0.55	0.2995	0.6996
0.30	0.1179	0.4179	0.55	0.3023	0.6966	0.1966	0.55	0.3023	0.6966
0.31	0.1217	0.4217	0.55	0.3051	0.6936	0.1936	0.55	0.3051	0.6936
0.32	0.1255	0.4255	0.55	0.3078	0.6906	0.1906	0.55	0.3078	0.6906
0.33	0.1293	0.4293	0.55	0.3106	0.6876	0.1876	0.55	0.3106	0.6876
0.34	0.1331	0.4331	0.55	0.3133	0.6846	0.1846	0.55	0.3133	0.6846
0.35	0.1368	0.4368	0.55	0.3161	0.6816	0.1816	0.55	0.3161	0.6816
0.36	0.1406	0.4406	0.55	0.3188	0.6786	0.1786	0.55	0.3188	0.6786
0.37	0.1443	0.4443	0.55	0.3215	0.6756	0.1756	0.55	0.3215	0.6756
0.38	0.1480	0.4480	0.55	0.3242	0.6726	0.1726	0.55	0.3242	0.6726
0.39	0.1517	0.4517	0.55	0.3269	0.6696	0.1696	0.55	0.3269	0.6696
0.40	0.1554	0.4554	0.55	0.3296	0.6666	0.1666	0.55	0.3296	0.6666
0.41	0.1591	0.4591	0.55	0.3323	0.6636	0.1636	0.55	0.3323	0.6636
0.42	0.1628	0.4628	0.55	0.3350	0.6606	0.1606	0.55	0.3350	0.6606
0.43	0.1664	0.4664	0.55	0.3377	0.6576	0.1576	0.55	0.3377	0.6576
0.44	0.1701	0.4701	0.55	0.3404	0.6546	0.1546	0.55	0.3404	0.6546
0.45	0.1737	0.4737	0.55	0.3431	0.6516	0.1516	0.55	0.3431	0.6516
0.46	0.1774	0.4774	0.55	0.3458	0.6486	0.1486	0.55	0.3458	0.6486
0.47	0.1810	0.4810	0.55	0.3485	0.6456	0.1456	0.55	0.3485	0.6456
0.48	0.1846	0.4846	0.55	0.3512	0.6426	0.1426	0.55	0.3512	0.6426
0.49	0.1882	0.4882	0.55	0.3539	0.6396	0.1396	0.55	0.3539	0.6396
0.50	0.1918	0.4918	0.55	0.3566	0.6366	0.1366	0.55	0.3566	0.6366

Calculate the standard Deviation and interpret the results.

(10)

3. An examinee has scored 79 in first semester Statistics test. The mean score of the class is 80 and the standard deviation 5.6. The student is eager to know her percentile rank. Which statistical method should she apply to know that ?

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