3004E297

Candidate's Seat No :_____

IMBA in FM/HRPA/BM Semester-2 Examination

DPPG_IMBA/IMBAF/IMBAH_MDC_124

BS

Time : 2-00 Hours] **April-2024** **[Max. Marks : 50**

Q.1 Write a short note on: 10

a) Skewness and its Types

b) Kurtosis and its Types

Or

Q.1 What is Hypothesis? Explain the procedure of hypothesis test with various steps involved.

Q.2 A financial analyst wanted to find out whether inventory turnover (no. of times) influences any company's earnings per share (in percentage). A random sample of 7 companies listed in a stock exchange were selected and following data was recorded for each: 10

Company	A	B	C	D	E	F	G
Inventory	4	5	7	8	6	3	5
Earnings per share	11	9	13	7	13	8	8

Find the Spearman's rank correlation coefficient for the following data.

Or

Q.2 Find Karl Pearson's Coefficient of Determination for the following data and interpret it. 10

X	78	89	96	69	59	79	68	61
Y	125	137	156	112	107	136	123	108

Q.3 Mysuru Mahanagar Palika surveyed the travel preferences of people who travelled to work by train or bus. The initial analysis suggested that 1 in 5 people travelled by train to work. If 5 people are interviewed, what is the probability that, 10

i) Exactly 3 prefer travelling by train

ii) Three or more prefer travelling by train and

i) Less than 3 prefer travelling by train.

Or

Q.3 The average daily sales of 500 branch offices were Rs. 150 thousand & the SD of Rs. 15 thousand. Assuming the distribution to be normal, indicate how many branches have sales between: 10

(i) Rs. 120 thousand & Rs. 145 thousand

(ii) Rs. 140 thousand & Rs. 165 thousand

Q.4 A coaching centre claims that students will perform better in their exams after going through the coaching offered by their centre. The table given below shows the marks obtained by 6 students before and after the coaching course. Can you conclude that the students score has improved after the course with level of significance $\alpha = 0.05$? ($t_{0.05,5} = 2.571$) 10

Student	1	2	3	4	5	6
Marks (Before)	85	96	70	76	81	78
Marks (After)	88	85	89	86	92	89

Or

Q.4 Two research workers classified some people in income groups on the basis of sampling studies. Their results are as follows: 10

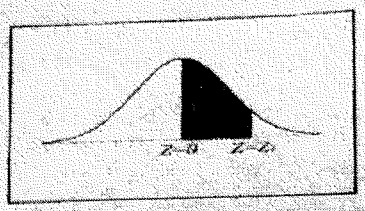
Investigators	Income groups			Total
	Poor	Middle	Rich	
A	160	30	10	200
B	140	120	40	300
Total	300	150	50	500

Show that the sampling technique of at least one research worker is defective. ($\chi^2_{0.05,2} = 5.991$)

Q.5 Calculate Median, Upper quartiles, 3rd Decile from the following data: 10

Heights in Cm	145-150	150-155	155-160	160-165	165-170	170-175	175-180
No. of Persons	2	4	12	22	30	25	10

Table of Standard Normal Curve



Area Under the Standard Normal Curve

$Z = 0$ to $Z = z$, z being standard normal variate

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.0000	.0040	.0080	.0120	.0160	.0199	.0239	.0279	.0319	.0359
0.1	.0398	.0438	.0478	.0517	.0557	.0596	.0636	.0675	.0714	.0753
0.2	.0793	.0832	.0871	.0910	.0948	.0987	.1026	.1064	.1103	.1141
0.3	.1179	.1217	.1255	.1293	.1331	.1368	.1406	.1443	.1480	.1517
0.4	.1554	.1591	.1628	.1664	.1700	.1736	.1772	.1808	.1844	.1879
0.5	.1915	.1950	.1985	.2019	.2054	.2088	.2123	.2157	.2190	.2224
0.6	.2257	.2291	.2324	.2357	.2389	.2422	.2454	.2486	.2518	.2549
0.7	.2580	.2611	.2642	.2673	.2704	.2734	.2764	.2794	.2823	.2852
0.8	.2881	.2910	.2939	.2967	.2995	.3023	.3051	.3078	.3106	.3133
0.9	.3159	.3186	.3212	.3238	.3264	.3289	.3315	.3340	.3365	.3389
1.0	.3413	.3438	.3461	.3485	.3508	.3531	.3554	.3577	.3599	.3621
1.1	.3643	.3665	.3686	.3708	.3729	.3749	.3770	.3790	.3810	.3830
1.2	.3849	.3869	.3888	.3907	.3925	.3944	.3962	.3980	.3997	.4015
1.3	.4032	.4049	.4066	.4082	.4099	.4115	.4131	.4147	.4162	.4177
1.4	.4192	.4207	.4222	.4236	.4251	.4265	.4279	.4292	.4306	.4319
1.5	.4332	.4345	.4357	.4370	.4382	.4394	.4406	.4418	.4429	.4441
1.6	.4452	.4463	.4474	.4484	.4495	.4505	.4515	.4525	.4535	.4545
1.7	.4554	.4564	.4573	.4582	.4591	.4599	.4608	.4616	.4625	.4633
1.8	.4641	.4649	.4656	.4664	.4671	.4678	.4686	.4693	.4699	.4706
1.9	.4713	.4719	.4726	.4732	.4738	.4744	.4750	.4756	.4762	.4767
2.0	.4772	.4778	.4783	.4788	.4793	.4798	.4803	.4808	.4812	.4817
2.1	.4821	.4826	.4830	.4834	.4838	.4842	.4846	.4850	.4854	.4857
2.2	.4861	.4864	.4868	.4871	.4875	.4878	.4881	.4884	.4887	.4890
2.3	.4893	.4896	.4898	.4901	.4904	.4906	.4909	.4911	.4913	.4916
2.4	.4918	.4920	.4922	.4925	.4927	.4929	.4931	.4932	.4934	.4936
2.5	.4938	.4940	.4941	.4943	.4945	.4946	.4948	.4949	.4951	.4952
2.6	.4953	.4955	.4956	.4957	.4959	.4960	.4961	.4962	.4963	.4964
2.7	.4965	.4966	.4967	.4968	.4969	.4970	.4971	.4972	.4973	.4974
2.8	.4974	.4975	.4976	.4977	.4977	.4978	.4979	.4979	.4980	.4981
2.9	.4981	.4982	.4982	.4983	.4984	.4984	.4985	.4985	.4986	.4986
3.0	.4987	.4987	.4987	.4988	.4988	.4989	.4989	.4989	.4990	.4990
3.1	.4990	.4991	.4991	.4991	.4992	.4992	.4992	.4992	.4993	.4993
3.2	.4993	.4993	.4994	.4994	.4994	.4994	.4994	.4995	.4995	.4995
3.3	.4995	.4995	.4995	.4996	.4996	.4996	.4996	.4996	.4996	.4997
3.4	.4997	.4997	.4997	.4997	.4997	.4997	.4997	.4997	.4997	.4998
3.5	.4998	.4998	.4998	.4998	.4998	.4998	.4998	.4998	.4998	.4998

—X—