

Seat No. : _____

MD-207

May-2025

IMBA Full Time, Sem.-II

(Regular/Repeater)-End Semester Exam

IMBA in Finance (FM) / IMBA in HR and Public Administration(HRPA)/

IMBA in Business Management (BM)

Business Statistics (BS)

DPPG-IMBA-MDC-124/ DPPG-IMBAF-MDC-124/DPPG-IMBAH-MDC-124

(NEP Syllabus)

Time : 2:00 Hours]

[Max. Marks : 50

1. (A) The median of the following frequency distribution is 38. Find the value of a and b if the sum of frequencies is 400 : 10

Class	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequencies	42	38	a	54	b	36	32

OR

- (B) If $P_{20} = 9.375$, for the following frequency distribution, find the missing frequency : 10

Class	3-6	6-9	9-12	12-15	15-18	18-21	21-24
Frequency	10	25	?	60	30	20	15

2. (A) The mean height of 500 students is 160 cm with standard deviation 10 cm. Find : 10
- (i) % of students with height between 150 and 170 cm
- (ii) % taller than 175 cm

OR

2. (B) If a call center receives 3 calls per minute on average, find the probability that in a given minute : 10
- (i) No call is received
- (ii) Exactly 2 calls are received
- (iii) More than 4 calls are received

3. (A) In a survey of buying habits, 400 women shoppers are chosen at random in a super market 'A'. Their average weekly food expenditure is ₹ 250 with a standard deviation of ₹ 40. For 400 women shoppers chosen at random in some other super market 'B', the average weekly food expenditure is ₹ 220 with a standard deviation of ₹ 55. Do these two populations have similar shopping habits ? Is the average weekly food expenditure of two populations of shoppers equal ? Test at 5% significance level. 10

OR

3. (B) The sales in 6 shops before and after 'the more sale campaign' are as shown below : 10

SHOP	1	2	3	4	5	6
Sales before Campaign	53	28	32	30	50	42
Sales after Campaign	58	32	30	50	56	45

Can we say that the campaign is successful? Use 5% level of significance, stating null hypothesis vs alternate hypothesis, ($t_{(0.05, 13)} = 2.571$)

4. (A) A certain drug was administered to 458 males out of 720 in a certain locality to test its efficacy against typhoid. Relevant data is given below : 10

	Infection	No infection	Total
Administered the drug	146	312	458
Not Administered	190	72	262
Total	336	384	720

Test the hypothesis if the infection is caused due to administration of drug or otherwise. $\chi^2_{(0.05)} = 3.84$.

OR

- (B) Obtain the co-efficient of determination from the following data and interpret it : 10

Age of Husband	72	71	66	67	68	70	69
Age of Wives	73	71	64	67	70	68	63

5. Answer the following in short : 10
- (i) Give the difference between large sample tests and small sample tests.
 - (ii) What is Skewness ? Explain its types.
 - (iii) What is binomial distribution ? State the difference between Binomial and Poisson distribution.
 - (iv) What is dispersion? Explain the measures of dispersion.
 - (v) Define hypothesis testing. What is Null and Alternate Hypothesis ?

Z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0040	0.0080	0.0120	0.0160	0.0190	0.0239	0.0279	0.0319	0.0359
0.1	0.0398	0.0438	0.0478	0.0517	0.0557	0.0596	0.0636	0.0675	0.0714	0.0753
0.2	0.0793	0.0832	0.0871	0.0910	0.0948	0.0987	0.1026	0.1064	0.1103	0.1141
0.3	0.1179	0.1217	0.1255	0.1293	0.1331	0.1368	0.1406	0.1443	0.1480	0.1517
0.4	0.1554	0.1591	0.1628	0.1664	0.1700	0.1736	0.1772	0.1808	0.1844	0.1879
0.5	0.1915	0.1950	0.1985	0.2019	0.2054	0.2088	0.2123	0.2157	0.2190	0.2224
0.6	0.2257	0.2291	0.2324	0.2357	0.2389	0.2422	0.2454	0.2486	0.2517	0.2549
0.7	0.2580	0.2611	0.2642	0.2673	0.2704	0.2734	0.2764	0.2794	0.2823	0.2852
0.8	0.2881	0.2910	0.2939	0.2969	0.2995	0.3023	0.3051	0.3078	0.3106	0.3133
0.9	0.3159	0.3186	0.3212	0.3238	0.3264	0.3289	0.3315	0.3340	0.3365	0.3389
1.0	0.3413	0.3438	0.3461	0.3485	0.3508	0.3513	0.3554	0.3577	0.3529	0.3621
1.1	0.3643	0.3665	0.3686	0.3708	0.3729	0.3749	0.3770	0.3790	0.3810	0.3830
1.2	0.3849	0.3869	0.3888	0.3907	0.3925	0.3944	0.3962	0.3980	0.3997	0.4015
1.3	0.4032	0.4049	0.4066	0.4082	0.4099	0.4115	0.4131	0.4147	0.4162	0.4177
1.4	0.4192	0.4207	0.4222	0.4236	0.4251	0.4265	0.4279	0.4292	0.4306	0.4319
1.5	0.4332	0.4345	0.4357	0.4370	0.4382	0.4394	0.4406	0.4418	0.4429	0.4441
1.6	0.4452	0.4463	0.4474	0.4484	0.4495	0.4505	0.4515	0.4525	0.4535	0.4545
1.7	0.4554	0.4564	0.4573	0.4582	0.4591	0.4599	0.4608	0.4616	0.4625	0.4633
1.8	0.4641	0.4649	0.4656	0.4664	0.4671	0.4678	0.4686	0.4693	0.4699	0.4706
1.9	0.4713	0.4719	0.4726	0.4732	0.4738	0.4744	0.4750	0.4756	0.4761	0.4767
2.0	0.4772	0.4778	0.4783	0.4788	0.4793	0.4798	0.4803	0.4808	0.4812	0.4817
2.1	0.4821	0.4826	0.4830	0.4834	0.4838	0.4842	0.4846	0.4850	0.4854	0.4857
2.2	0.4861	0.4864	0.4868	0.4871	0.4875	0.4878	0.4881	0.4884	0.4887	0.4890
2.3	0.4893	0.4896	0.4898	0.4901	0.4904	0.4906	0.4909	0.4911	0.4913	0.4916
2.4	0.4918	0.4920	0.4922	0.4925	0.4927	0.4929	0.4931	0.4932	0.4934	0.4936
2.5	0.4938	0.4940	0.4941	0.4943	0.4945	0.4946	0.4948	0.4949	0.4951	0.4952
2.6	0.4953	0.4955	0.4956	0.4957	0.4959	0.4960	0.4961	0.4962	0.4963	0.4964
2.7	0.4965	0.4966	0.4967	0.4968	0.4969	0.4970	0.4971	0.4972	0.4973	0.4974
2.8	0.4974	0.4975	0.4976	0.4977	0.4977	0.4978	0.4979	0.4979	0.4980	0.4981
2.9	0.4981	0.4982	0.4982	0.4983	0.4984	0.4984	0.4985	0.4985	0.4986	0.4986
3.0	0.4987	0.4987	0.4987	0.4988	0.4988	0.4989	0.4989	0.4989	0.4990	0.4990
3.1	0.4990	0.4991	0.4991	0.4991	0.4992	0.4992	0.4992	0.4992	0.4993	0.4993
3.2	0.4993	0.4993	0.4994	0.4994	0.4994	0.4994	0.4994	0.4995	0.4995	0.4995
3.3	0.4995	0.4995	0.4995	0.4996	0.4996	0.4996	0.4996	0.4996	0.4996	0.4997
3.4	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4998

