

Roll No. ....

**JAMIA HAMDARD**  
**BBA II SEMESTER EXAMINATION 2018**  
**BUSINESS STATISTICS**  
**BBA-C-05**

MM: 75

Time: 3hr.

**SECTION – A**

*Answer any six.*

(6 x 5 = 30)

1. What do you mean by Arithmetic Mean, Median and Mode?
2. Marks obtained by eight students in statistics are given below:  
52, 40, 70, 43, 65, 40, 35, 48  
Calculate the Variance and standard deviation.
3. What do you mean by Correlation coefficient (r)? How a negative value of r is different from the positive one?
4. What do you mean by Coefficient of Determination?
5. What do you mean by Hypotheses Testing? How two-tailed test is different from one-tailed test?
6. Explain graphical method of linear programming.
7. Determine the probability for the following normal distribution problems.  
 $\mu = 604, \sigma = 56.8$ . Find  $P(X \leq 635)$ .
8. A population has a mean of 50 and a standard deviation of 10. If a random sample of 64 is taken, what is the probability that the sample mean is greater than 52?
9. What do you mean by Absolute Range and Coefficient of Quartile Deviation?

**SECTION – B**

*Answer any three.*

(3 x 15 = 45)

10. From the following data compute Mean, Standard Deviation, Coefficient of Variation.

|           |      |       |       |       |       |       |       |       |
|-----------|------|-------|-------|-------|-------|-------|-------|-------|
| Class     | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
| Frequency | 5    | 10    | 20    | 40    | 30    | 20    | 10    | 5     |

11. Compute Inter-Quartile Range, Semi-Inter Quartile Range and Coefficient of Quartile Deviation of the marks of 63 students in Mathematics given below:

|                 |       |       |       |       |       |       |       |       |       |        |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Marks Group     | 0 -10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 | 90-100 |
| No. of Students | 5     | 7     | 10    | 16    | 11    | 7     | 3     | 2     | 2     | 0      |

12. Calculate Correlation Coefficient from the following data and interpret the result.

|   |    |    |    |    |    |    |    |   |   |
|---|----|----|----|----|----|----|----|---|---|
| X | 9  | 8  | 7  | 6  | 5  | 4  | 3  | 2 | 1 |
| Y | 15 | 16 | 14 | 13 | 11 | 12 | 10 | 8 | 9 |

13. Given the following data, compute the regression of Y on X and corresponding coefficient of determination.

|   |    |    |   |    |    |
|---|----|----|---|----|----|
| X | 16 | 6  | 8 | 4  | 7  |
| Y | 5  | 12 | 9 | 15 | 17 |

14. For the following given data, conduct hypotheses testing:

a)  $H_0: \mu = 100$ ,  $H_a: \mu \neq 100$

X (Sample Mean) = 98,  $\sigma$  (Population Standard Deviation) = 10, n (Sample Size) = 64 and  $\alpha$  (Level of Significance) = 5%

b)  $H_0: \mu = 60$ ,  $H_a: \mu < 60$

X (Sample Mean) = 58,  $\sigma$  (Population Standard Deviation) = 12, n (Sample Size) = 49 and  $\alpha$  (Level of Significance) = 10%.

15. Use graphical method to solve the following linear programming problem:

Maximize  $Z = 20x + 15y$

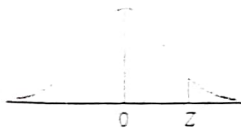
Subject to

$$180x + 120y \leq 1500,$$

$$x + y \leq 10,$$

$$x \geq 0, y \geq 0$$

# Areas of the Standard Normal Distribution



The entries in this table are the probabilities that a standard normal random variable is between 0 and  $z$  (the shaded area).

| 0.00  | 0.01  | 0.02  | 0.03  | 0.04  | 0.05  | 0.06  | 0.07  | 0.08  | 0.09  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| .0000 | .0040 | .0080 | .0120 | .0160 | .0199 | .0239 | .0279 | .0319 | .0359 |
| .0398 | .0438 | .0478 | .0517 | .0557 | .0596 | .0636 | .0675 | .0714 | .0753 |
| .0793 | .0832 | .0871 | .0910 | .0948 | .0987 | .1026 | .1064 | .1103 | .1141 |
| .1179 | .1217 | .1255 | .1293 | .1331 | .1368 | .1406 | .1443 | .1480 | .1517 |
| .1554 | .1591 | .1628 | .1664 | .1700 | .1736 | .1772 | .1808 | .1844 | .1879 |
| .1915 | .1950 | .1985 | .2019 | .2054 | .2088 | .2123 | .2157 | .2190 | .2224 |
| .2257 | .2291 | .2324 | .2357 | .2389 | .2422 | .2454 | .2486 | .2517 | .2549 |
| .2580 | .2611 | .2642 | .2673 | .2704 | .2734 | .2764 | .2794 | .2823 | .2852 |
| .2881 | .2910 | .2939 | .2967 | .2995 | .3023 | .3051 | .3078 | .3106 | .3133 |
| .3159 | .3186 | .3212 | .3238 | .3264 | .3289 | .3315 | .3340 | .3365 | .3389 |
| .3413 | .3438 | .3461 | .3485 | .3508 | .3531 | .3554 | .3577 | .3599 | .3621 |
| .3643 | .3665 | .3686 | .3708 | .3729 | .3749 | .3770 | .3790 | .3810 | .3830 |
| .3849 | .3869 | .3888 | .3907 | .3925 | .3944 | .3962 | .3980 | .3997 | .4015 |
| .4032 | .4049 | .4066 | .4082 | .4099 | .4115 | .4131 | .4147 | .4162 | .4177 |
| .4192 | .4207 | .4222 | .4236 | .4251 | .4265 | .4279 | .4292 | .4306 | .4319 |
| .4332 | .4345 | .4357 | .4370 | .4382 | .4394 | .4406 | .4418 | .4429 | .4441 |
| .4452 | .4463 | .4474 | .4484 | .4495 | .4505 | .4515 | .4525 | .4535 | .4545 |
| .4554 | .4564 | .4573 | .4582 | .4591 | .4599 | .4608 | .4616 | .4625 | .4633 |
| .4641 | .4649 | .4656 | .4664 | .4671 | .4678 | .4686 | .4693 | .4699 | .4706 |
| .4713 | .4719 | .4726 | .4732 | .4738 | .4744 | .4750 | .4756 | .4761 | .4767 |
| .4772 | .4778 | .4783 | .4788 | .4793 | .4798 | .4803 | .4808 | .4812 | .4817 |
| .4821 | .4826 | .4830 | .4834 | .4838 | .4842 | .4846 | .4850 | .4854 | .4857 |
| .4861 | .4864 | .4868 | .4871 | .4875 | .4878 | .4881 | .4884 | .4887 | .4890 |
| .4893 | .4896 | .4898 | .4901 | .4904 | .4906 | .4909 | .4911 | .4913 | .4916 |
| .4918 | .4920 | .4922 | .4925 | .4927 | .4929 | .4931 | .4932 | .4934 | .4936 |
| .4938 | .4940 | .4941 | .4943 | .4945 | .4946 | .4948 | .4949 | .4951 | .4952 |
| .4953 | .4955 | .4956 | .4957 | .4959 | .4960 | .4961 | .4962 | .4963 | .4964 |
| .4965 | .4966 | .4967 | .4968 | .4969 | .4970 | .4971 | .4972 | .4973 | .4974 |
| .4974 | .4975 | .4976 | .4977 | .4977 | .4978 | .4979 | .4979 | .4980 | .4981 |
| .4981 | .4982 | .4982 | .4983 | .4984 | .4984 | .4985 | .4985 | .4986 | .4986 |
| .4987 | .4987 | .4987 | .4988 | .4988 | .4989 | .4989 | .4989 | .4990 | .4990 |
| .4990 | .4991 | .4991 | .4991 | .4992 | .4992 | .4992 | .4992 | .4993 | .4993 |
| .4993 | .4993 | .4994 | .4994 | .4994 | .4994 | .4994 | .4995 | .4995 | .4995 |
| .4995 | .4995 | .4995 | .4996 | .4996 | .4996 | .4996 | .4996 | .4996 | .4996 |
| .4997 | .4997 | .4997 | .4997 | .4997 | .4997 | .4997 | .4997 | .4997 | .4997 |

.4998

.49997

.50000