REV-00 MBA/01/06

MASTER OF BUSINESS ADMINISTRATION **First Semester (Repeat) STATISTICAL & QUANTITATIVE METHODS** (MBA - 104)

Duration: 3Hrs.

Full Marks: 70

Part-A (Objective) =20 Part-B (Descriptive) =50

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins.

Marks: 50

Answer any four from Question no. 2 to 8 **Question no. 1 is compulsory.**

1. What is sampling? Critically	y examine the well-known me	ethods of sampling
techniques.	2-	(2+8=10)
2. (A) Find the determinant of	the following matrix:	(3)

2. (A) Find the determinant of the following matrix:

	[1	3	4]
A=	2	-3	2
	l1	5	6]

(B) Solve the following system of linear equations, using Matrix Inverse Method:

2X-Y+3Z=9	. (7)
X+Y+Z=6	
X-Y+Z=2	

3. (A) What is meant by 'correlation'? Distinguish between positive, negative and zero correlation with examples and diagrams. (5)

(B) Given the following information about advertising expenditure and sales:

	Advertisement (X) (Rs. in lakh)	Sales (Y) (Rs. in lakh)
Arithmetic mean, \overline{X}	10	90
Standard deviation, σ	3	12

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Correlation coefficient = 0.8						
Obtain the two regression eq	uations.					(5)
. The following distribution gives	the patter	rn of ov	ertime w	ork don	e by 100	n (1)
employees of a company. Calcul	ate mean	and var	iance fo	r overtin	ne work	done b
per employee.						(10)
Overtime hours: 10-15	15-20	20-25	25-30	30-35	35-40	
Number of employees: 11	20	35	20	8	6	
. (A) Find the values of : $\lim_{x\to 2}$	$\frac{x2-3x+2}{X2+x-6}$	1				(5)
(B) Find $\frac{dy}{dx}$						(5)
Y = sin (cos	x^2)					
(A) What are the different measu	ires of co	ntrol ton	danav?	Thora or	o two un	its of a

- 6. (A) What are the different measures of central tendency? There are two units of an automobile company in two different cities employing 760 and 800 employees respectively. The A.M of monthly salaries paid to employees in these two units is Rs. 18,750 and Rs. 16,950. Find the combined A.M of salaries of the employees in both the units. (4)
 - (B) Two salesman selling the same product, show the following results over a long period of time:

	Salesman X	Salesman Y
Average sales volume per month(Rs.)	30,000	35,000
S.D	2,500	3,600

- Which salesman seems to be more consistent in the volume of sales?
- 7. (A) A husband and wife appear in an interview for two vacancies in the same post. The probability of husband's selection is 1/7 and that of wife's selection is 1/5. What is the probability that: (5)

(6)

- a) Both of them will be selected.
- b) Only one of them will be selected.
- c) None of them will be selected.

(B) The incidence of occupational disease in an industry is such that the workers have 20 percent chance of suffering from it. What is the probability that out of six workers 4 or more will come in contact of the disease? (5)8. (A) Write short notes on the following: (3)a) Null and alternative hypothesis. b) Type I and Type II errors. c) Level of significance. (B) 200 digits are chosen at random from a table. The frequencies of the digits are as follows: Digit: 0 2 3 4 5 6 9 Frequency: 18 19 23 21 16 25 22 20 21 15 Use χ^2 test to assess the correctness of the hypothesis that the digits were distributed in equal numbers in the table from which they were chosen. Given, $\chi^2_{0.05}$ (9 df) = 16.22 (7)

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MBA/01/06 2017/08	7. The sum of squares of deviations from mean is: A. maximum B. minimum
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STATISTICAL & OUANTITATIVE METHODS	D. none of the above
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	8. If the first and third quartiles are 22.16 and 56.36, respectively, then the quartile deviation is: 17.1
Duration: 20 minutes Marks – 20	R 34 2
(PART A - Objective Type)	C. 51.3
L Choose the correct answer: 1×20=20	D. none of the above
$1. Choose the correct answer, 1^20-20$	0. A has contains 2 red 6 white and 7 hlue halls. If two halls are drawn at random than the
1. If two coefficients of regression are 0.8 and 0.2, then the value of coefficient of correlation is:	9. A dag contains 5 red, 6 white and 7 blue bans. If two bans are drown at random, then the nrobability of getting both white balls is:
A. 0.16	A. 5/40
C = 0.40	B. 6/40
D0.40	C. 7/40
	D. 14/40
2. The standard deviation of the binomial distribution is:	10. Find ${}^{n}C_{r}$, if n=9 and r=3
A. IIP B. Ing	A. 84
C_{n}/m	B. 46
D_{μ}	C. 42
D. Vnpd	D. 40
3. A null hypothesis is accepted when:	11.If $P(A \cap B) = 0.20$ and $P(B) = 0.8$, then $P(A/B)$ is:
A. $\chi^2_{\text{cal}} \leq \chi^2_{\text{tab}}$	A. 0.25
B. $\chi_2^{\text{cal}} \geq \chi_1^{\text{tab}}$	B. 0.4
C. $\chi_{\text{cal}} = \chi_{\text{tab}}$	C. 0.5
D. None of these	D. 0.75
4. An m x n matrix is said to be square matrix if:	12.A significant difference between the statistic and parametric value implies that:
A. m =n	A. statistic values used to approximate parameter.
$B, m \ge n$	B. sample statistic is representative of the population.
D. None of the above	D none of the above
	D. none of the doove.
5. The algebraic sum of the deviations from mean is:	13. The degrees of freedom used in a t- distribution are equal to:
B minimum	A. sample size n
C. zero	D. sample size $n+1$
D. none of the above	D. (a) or (b) but not (c)
6. If mean and coefficient of variation of a set of data is 10 and 5 respectively, then the	
standard deviation is:	14.11 the relationship between x and y is positive, as variable y decreases, variable x:
A. 10	B. decreases
B. 50	C. remains same
C. 5	D. changes linearly
D. none of the above	

15.1f $f(x) = x^n$, then derivatives of f(x) is: A. nx^{x-1} B. x^{n-1} C. xⁿ D. None 16.1f μ =30.5, n=100, \bar{x} = 28.8 and σ = 8.35, then IzI = A. 2.5 B. 1.98 C. 2.4 D. 2.68 17. Which of the following is non-probability sampling? A. Purposive sampling B. Random sampling C. Cluster sampling D. Stratified sampling 18. The value of correlation coefficient lies between: A. -1 to +1 B. 0 to 1 C. -1 to 0 D. None of the above 19.If variables X and Y are independent, then the angle between the two regression lines: A. 90° B. 45° C. 180[°] D. None of the above 20. The test statistic to test $\mu_1 = \mu_2$ for normal population is: A. F-test B. z- test C. t-test D. None of the above



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Instructions to Candidates	For Obj	ective	Session: 2016-17
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writing whether it is complete or in good condition.	Page No.	Marks	Course
2. Do not write your name anywhere in the answer booklet.			Roll No
3. Write legibly on both sides of the paper			1
4. You may use some space for any rough notes or calculation			Enrollment No
on the answer booklet if you need. These rough notes,			Semester
calculations must be scored out before submitting the answer			Name of the Paper
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hall.	Total	Section wat	Paper Code
6. Do not tear any page from the answer booklet.	For Descrip	tive Type	
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