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Register Number

Name of the Candidate:

M.B.A. DEGREE EXAMINATION, May 2015**(HUMAN RESOURCE MANAGEMENT)****(FIRST YEAR)****160: BUSINESS MATHEMATICS AND STATISTICS**

(Common with M.B.A Marketing Management and M.B.A Financial Management)

Time: Three hours

Maximum: 75 marks

SECTION-A**(5×3=15)****Answer any FIVE questions**

1. Find the value of the determinant $\begin{bmatrix} 2 & 3 & 5 \\ 4 & 7 & 9 \\ 1 & 6 & 4 \end{bmatrix}$
2. Write four properties of normal distribution.
3. State central limit theorem.
4. Explain one and two tail tests.
5. Discuss about sampling distribution and standard error.
6. What is the principle of least squares?
7. What do you mean by irregular variations?
8. What is Control Chart?

SECTION-B**(3×10=30)****Answer any THREE questions**

8. If $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{bmatrix}$ find A^{-1}
9. Explain the nature of statistics.
10. Annual sales for the last seven years for an organization are given in the following table. Determine the linear square regression line.

Year	Annual Sales
1	₹ 1,760,000
2	₹ 21,20,000
3	₹ 23,50,000
4	₹ 28,00,000
5	₹ 32,00,000
6	₹ 37,50,000
7	₹ 38,00,000
11. List different non parametric tests.

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12. Explain briefly the various methods of determining trend in a time series.

SECTION-C**(1×15=15)****Answer any ONE question**

13. Discuss in detail the process of testing hypothesis. What are null and alternative hypotheses?
14. A PTA group wishes to determine whether a baggage of letters sent to the local station has reduced the amount of violence broadcast between the hours of 4.P.M and 9.P.M. The results of a survey of viewers are given here.

Response	Number of Respondents
More Violence	4
Less Violence	11
No change	6

Carry out a sign test to determine whether or not the letters were effective in reducing the amount of violence during the 4 to 9.p.m period. Use a 0.5 level of significance. Be sure to state the null and alternative hypothesis.

15. Discuss the objectives and advantages of statistical quality control.

SECTION-D**(1×15=15)****[Compulsory]**

16. A group of 200 individuals from different cities were asked whether they owned a foreign or a domestic car. The following contingency table shows the results of the survey

Type of Car	CITY			Total
	Detroit	Altanta	Denver	
Domestic	80	200	520	800
Foreign	120	600	480	1200
Total	200	800	1100	2000

At $\alpha = 0.05$ test to determine the car they purchased is independent of the city in which the purchasers live.
