

IM6113

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M.B.A. I sem. (Main & Back) Examination Dec.- 2016
M-103 A Business Mathematics and Statistics

Time : 3 Hours

Maximum Marks : 70
Min. Passing Marks : 28

Instructions to Candidates:

- The question paper is divided in two sections.
- There are sections A & B. Section A contains 6 questions out of which the candidate is required to attempt any 4 questions. Section B contains short case study/application base 1 question which is compulsory.
- All questions are carrying equal marks.

Section - A

1. a) Find
- $A^2 - 3A + 9I$
- , if

$$A = \begin{bmatrix} 1 & -2 & 3 \\ 2 & 3 & -1 \\ -3 & 1 & 2 \end{bmatrix}, \text{ where } I = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} \quad (7)$$

$$b) \text{ If } A = \begin{bmatrix} 1 & -1 & 0 \\ 2 & 1 & 3 \\ 3 & 1 & 1 \end{bmatrix}, B = \begin{bmatrix} 2 & 1 & 3 \\ -1 & 0 & 1 \\ 1 & 0 & 1 \end{bmatrix}$$

$$\text{Find i) } A^T \text{ ii) } B^T \text{ iii) } (A+B)^T \text{ iv) } (2A)^T \quad (7)$$

2. a) Compute the inverse of the matrix

$$A = \begin{bmatrix} 1 & 2 & -1 \\ -2 & 1 & 1 \\ 3 & -3 & 2 \end{bmatrix} \quad (7)$$

- b) Solve the following system of equations by using determinants (Cramer's rule)

$$x - 4y - z = 11$$

$$2x - 5y + 2z = 39$$

$$-3x + 2y + z = 1$$

(7)

Additional Information :

- i) Investment costing Rs. 8000 were sold during the Year for Rs. 8500.
 - ii) Provision for tax made during the year was Rs. 9000
 - iii) During the year part of the plant and machinery costing Rs. 10,000 were sold for Rs. 12000 the profit was included in profit and loss account.
 - iv) Dividend paid during the year amounted to Rs. 44,080.
- You are required to prepare cash flow statement in new format as per Accounting standard 3 (Revised) by indirect method.

4. a) From the following information, compute the value of goodwill by using Annuity method. (8)
- i) Average capital employed Rs. 4,00,000
 - ii) Normal Rate of profit 12%.
 - iii) Profit for the year 2012-13 Rs. 62000, 2013-14 Rs. 59000 and 2014-15 Rs. 66000.
 - iv) Profit for year 2013-14 has been arrived at after writing off abnormal loss of Rs. 2000, and profit for the year 2014-15 includes a non-recurring income of Rs. 3000.
 - v) Good will is to be valued on the basis of annuity of 3 year purchase of super profit.
- b) The Annual requirement of a company's factory working 300 days a year, are 9000 units of a Raw material costing Rs. 10 per unit, placing each order costs Rs. 45 and the carrying cost is Rs. 10% per year of average inventory. You are required to calculate the economic order quantity. (6)

5. Write notes on:

- a) Responsible Accounting (6)
 - b) Price level change (4)
 - c) Methods of depreciation valuation. (4)
6. "The analysis and interpretation of the financial statement results in the presentation of information." Explain illustrate your answer with suitable example. (14)

SECTION - B

(Case Study)

7. From the given information make out a Balance sheet of XYZ Ltd. With as many details as possible:

	Rs	
Sales	1800000	
Total Assets turnover	03.0	
Fixed assets turnover	05.0	
Current Assets Turnover	07.5	
Inventory turnover	20.0	
Debtors Turnover	15.0	
(Total Assets/Net worth)	02.5	
Debt equity	01.00(one)	
Current Ratio	02.00	(14)

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