**Name……………**

 **Roll No…………….**

 **SAINTGITS COLLEGE OF APPLIED SCIENCES, PATHAMUTTOM P.O, KOTTAYAM**

**FIRST INTERNAL EXAM [SEPTEMBER-2016]**

**B.A CORPORATE ECONOMICS**

**FIRST SEMESTER**

**MATHEMATICS FOR ECONOMICS I**

Time: 2 hours Maximum: 50 Marks

**Section A**

*Answer* ***all*** *questions. Each question carries* ***1 mark****.*

 1. Define nonsingular matrix.

2. Find X such that P+Q-X=0.Where P=$\left[\begin{matrix}\begin{matrix}-1&-4\\2&5\\3&1\end{matrix}& \\ & \end{matrix}\right]$ Q=$\left[\begin{matrix}\begin{matrix}-1&-2\\0&1\\3&2\end{matrix}& \\ & \end{matrix}\right]$

3. Find the trace of the matrix $\left[\begin{matrix}\begin{matrix}-7&3&8\\2&4&0\\1&2&3\end{matrix}& \\ & \end{matrix}\right]$

4. Fnd (x y) if (x y)-(0 -1)=(5 4)

5.Define identity matrix.

 **(5×1=5)**

**Section B**

*Answer any* ***five*** *questions . Each question carries* ***2 marks****.*

6. Define transpose of a matrix with example.

7. If A=$\left[\begin{matrix}\begin{matrix}-1&2&3\\4&1&5\end{matrix}& \\ & \end{matrix}\right]$ and B=$\left[\begin{matrix}\begin{matrix}2&5&1\\-2&3&8\end{matrix}& \\ & \end{matrix}\right]$, find 5A-2B

8. Show that I3 is an idempotent matrix.

9. If A= $\left[\begin{matrix}\begin{matrix}5&7&2\\2&3&1\\4&6&2\end{matrix}& \\ & \end{matrix}\right]$ , find determinant of A

10. If A=$\left[\begin{matrix}\begin{matrix}-5&0&2\\4&2&3\\1&3&1\end{matrix}& \\ & \end{matrix}\right]$ , find determinant of A

11. Define symmetric matrix with example.

 **(5×2=10)**

**Section C**

*Answer any* ***five*** *question. Each question carries* ***4 marks****.*

12. If A=$\left[\begin{matrix}\begin{matrix}2&3&-1\\-1&0&1\end{matrix}& \\ & \end{matrix}\right]$ , B= $\left[\begin{matrix}\begin{matrix}2&3&5\\-1&3&4\\2&1&0\end{matrix}& \\ & \end{matrix}\right]$ find $(AB)^{ˈ}$ and BA

13. Solve 2x+4y=7, 5x+3y=1

14. If A=$\left[\begin{matrix}\begin{matrix}-1&-2&-2\\2&1&-2\\3&-2&1\end{matrix}& \\ & \end{matrix}\right]$ , show that Adj A=3At

15. If A=$\begin{matrix} & \\ & \end{matrix}\left[\begin{matrix}\begin{matrix}1&2&3\\2&0&1\\1&-1&2\end{matrix}& \\ & \end{matrix}\right]$ , B=$\left[\begin{matrix}\begin{matrix}1&0&5\\2&1&4\\3&-1&0\end{matrix}& \\ & \end{matrix}\right]$ find AB.

16. Show that A=$\left[\begin{matrix}\begin{matrix}2&-3&-5\\-1&4&5\\1&-3&-4\end{matrix}& \\ & \end{matrix}\right]$ is idempotent.

17. Find the adjoint of A=$\left[\begin{matrix}\begin{matrix}0&1&2\\1&2&3\\3&1&1\end{matrix}& \\ & \end{matrix}\right]$.

 **(5×4=20)**

**Section D**

*Answer any* ***one*** *question. Each question carries* ***15 marks****.*

18. Solve 3x+y+z=1, 2x+2z=0, 5x+y+2z=2 using Crammer’srule.

19. Solve x+2y+3z=2, 2x+4y+5z=3, 3x+5y+6z=4 using matrix method

 **(1×15=15)**