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Total No. of Pages : 01

Total No. of Questions : 08

B.Sc. (CS) (2013 & Onwards) (Sem.-1)

ALGEBRA

Subject Code : BCS-101

M.Code : 70878

Time : 2 Hrs.

Max. Marks : 30

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE question(s), each question carries 6 marks.

Q1 Use Ferrari's method to solve $x^4 - 8x^3 + 11x^2 + 20x + 4 = 0$.

Q2 Use Cardan's method to solve $x^3 - 18x - 35 = 0$.

Q3 Use Descartes's method to solve $x^4 - 3x^2 - 42x - 40 = 0$.

Q4 State and prove Cayley Hamilton theorem.

Q5 Find all the eigen values and vectors of the matrix $\begin{bmatrix} 3 & 1 & 4 \\ 0 & 2 & 6 \\ 0 & 0 & 5 \end{bmatrix}$.

Q6 Find the minimal polynomial of the matrix $\begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 1 \\ 3 & 1 & 2 \end{bmatrix}$.

Q7 a) Define matrix.

b) Define Unitary Matrix.

Q8 a) Define Row rank.

b) Prove that the row rank of a matrix is the same as its rank.

Note: Any student found attempting answer sheet from any other person(s), using incriminating material or involved in any wrong activity reported by evaluator shall be treated under UMC provisions.

Student found sharing the question paper(s)/answer sheet on digital media or with any other person or any organization/institution shall also be treated under UMC.

Any student found making any change/addition/modification in contents of scanned copy of answer sheet and original answer sheet, shall be covered under UMC provisions.