**Printed Pages : 1** **Roll No.** | | | | | | | | | | | **ECE012**

# B. TECH.

## THEORY EXAMINATION (SEM–VI) 2016-17

## MATRIX ANALYSIS OF STRUCTRES

***Time : 3 Hours*** ***Max. Marks : 100***

***Note :*** *Be precise in your answer. In case of numerical problem assume data wherever not provided.*

### SECTION-A

**1** **Explain the following :** **(10×2=20)**

**a)** Relation in flexibility and stiffness
**b)** Flexibility matrix
**c)** Stiffness matrix
**d)** Degree of freedom
**e)** Yielding of supports
**f)** Displacement method
**g)** Matrix inversion
**h)** Translational stiffness
**i)** Kinematic indeterminacy
**j)** Structural stability

### SECTION-B

**2** **Attempt any five of the following :** **(10×5=50)**

**a)** Find indeterminacy of 3 span continuous beam fixed at both ends and its suitable method of analysis
**b)** A one span beam 4m fixed at ends find its stiffness matrix.
**c)** Discuss indeterminacy static and kinematic for pin jointed frames
**d)** Discuss Transfer matrix method of analyzing framed structure.
**e)** Discuss Generalized computer oriented treatment of stiffness method
**f)** Discuss substructure technique for solving very large structures.
**g)** How you will form stiffness matrix for a beam of one span ends pinned
**h)** Discuss force method.

### SECTION-C

**Attempt any two of the following :** **(15×2=30)**

**3.** A rigid jointed building frame has ten story .it has 5 bays in one direction and 8 bays in other. Determine the degrees of static and kinematic indeterminacy for bases fixed and hinged.

**4.** Solve 2 span beam 4m each fixed at ends by any suitable method subjected to udl of 30 kN/m on full span. Take EI constant.

**5.** How you will solve settlement of intermediate support in 2 span beam fixed at ends.