M.E. First Semester (Civil (Structural Engg.)) (New-CGS)

13087 : Structural Dynamics : 1 SFSE 4

P. Pages : 1 | AW - 3616

Time : Three Hours | Max. Marks : 80

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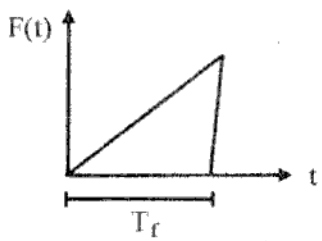
Notes : 1. Answer **three** question from Section A and **three** question from Section B.
2. Assume suitable data wherever necessary.

SECTION – A

1. Analyse the Single Degree of Freedom damped system for under damped condition? **13**

2. Explain response of a system of triangular pulse for undamped condition? The pulse is as under- **13**



3. a) Derive Newmarks β method for constant acceleration? **7**

b) Derive Newmarks β method for linear acceleration? **7**

4. Derive the complete solution that includes Homogeneous and particular solution for single Degree of Freedom Damped Forced case? **13**

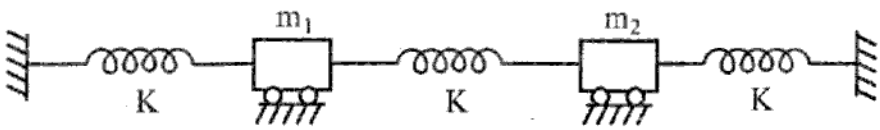
5. Explain modal superposition method for response of MDOF system? **14**

SECTION – B

6. a) What do you mean by mode shape? **5**

b) Explain orthogonality of mode shape? **8**

7. Derive formulation for MDOF for given structure by stiffness approach? **13**



8. Utilize Rayleigh method to analyse MDOF – undamped free vibration? **13**

9. How the continuous structure – Beam behaves for free transverse vibration? Consider simply supported case. **13**

10. a) Explain Response spectrum Analysis? **6**

b) What are the various clause consideration as per IS13920: for earthquake for multistoreyed structure. **8**

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