Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

MVSE-302(D)

M.E./M.Tech., III Semester

Examination, June 2017

Reliability Based Civil Engineering Design

(Elective-II)

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Differentiate between jointly distributed discrete variables and jointly distributed continuous variables.
   b) Discuss the utility of Gamma and Beta distributions.

2. Discuss Probabilistic approach for statistical analysis of live loads in civil Engineering design.

3. Explain general Expression for structural reliability and show how it follows normal distribution curve for strength(s) and load (L).

4. Describe Monte Carlo Method of Inverse transformation applicable to columns beams and frames.

5. Explain Hasofer and Lindys method for first and second order moment for calculating reliability index of structural elements.

6. Write short notes on :
   i) Calibration of IS-456 and IS-800.
   ii) Development of Reliability based criteria

7. Explain separately the procedure of generation of mechanism for reliability analysis of RCC and Steel Frames.

8. Write short notes on any two of the following :
   i) Maximum sustained load intensity Model
   ii) Probability model for wind load
   iii) Maximum total load model

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