

Roll No .....

**FT-704**

**B.E. VII Semester**

Examination, December 2016

**Safety Engineering and its Industrial Application**

**Time : Three Hours**

**Maximum Marks : 70**

- Note:** i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.  
ii) All parts of each question are to be attempted at one place.  
iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.  
iv) Except numericals, Derivation, Design and Drawing etc.

**Unit - I**

1. a) Explain causation of accident due to Act of God.  
b) Describe procedure of accident investigation.  
c) Why and how safety committee is constituted?  
d) Describe frequency rate, severity rate and safety activity rate.

OR

Describe any three theories of accident causation.

**Unit - II**

2. a) What hazards are possible due to overlooking principles of ergonomics?  
b) Write short note on Local exhaust ventilation.  
c) Explain the need of personal protective equipments.  
d) Explain work permit system and develop its format for working in dangerous confined space.

OR

Explain Fault Tree analysis method for hazard identification with some example.

**Unit - III**

3. a) Explain the effect of light in work environment.  
b) Explain the effect of noise in work environment.  
c) Describe roles of supervisor and trade union of a factory in promoting safety.  
d) Describe principles of machine-guarding and types of machine guards.

OR

Explain the eligibility criteria and duty of a safety officer in a factory registered under factories Act.

**Unit - IV**

4. a) Explain hazard-process industries.  
b) Describe dangerous properties of various chemicals.  
c) Advise the safety measures for a factory using highly flammable liquid.  
d) Describe the procedure of safety audit of a LPG bottling plant.

OR

Describe the hazards with their control measures in an industry manufacturing rayon by viscose process?

**Unit - V**

5. a) What are the hazards in using refractory material?  
b) How manufacturing of fertilizer can be hazardous?  
c) Describe the hazards of flammable compressed gases.  
d) Identify the hazards in LPG bottling plant and advise the hazard-control measures?

OR

Advise the safety measures to the management of a factory manufacturing sulphuric acid and single super phosphate fertilizer.