MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent institution of MAHE, Manipal)

II SEMESTER M.TECH. (ENVIRONMENTAL ENGINEERING)
END SEMESTER EXAMINATIONS, MAY/ JUNE 2018

SUBJECT: OCCUPATIONAL SAFETY AND HEALTH [CIE 5247]
REVISED CREDIT SYSTEM
(27/ 04/ 2018)

Time: 3 Hours   MAX. MARKS: 50

Instructions to Candidates:
- ❖ Answer ALL the questions.
- ❖ Missing data may be suitably assumed

Q.No		Marks
1A.	Define OSAH. Explain briefly the characteristics of OSAH	4
1B.	Explain in brief the Factory act	4
1C.	Explain International Labour Organization	2
2A.	Explain ergonomics hazards at work place and how you prevent it?	5
2B.	Explain the need for accident investigation. Explain fault tree and event tree analysis.	5
3A.	Explain Fukushima Daiichi nuclear disaster	8
3B.	With a neat sketch, explain fire triangle.	2
4A.	Plot flammability diagram for methane. Assume the following Flammability limit in air (LFL = 5.3% fuel in air and UFL = 15% fuel in air) Flammability limit in pure oxygen (LFL =5.1 % fuel in oxygen and UFL =61% fuel in oxygen) LOC =12% of oxygen	5
4B.	What is static electricity and how it is usually controlled.	3
4C.	Define fire point, lower flammability and upper flammability limit	2
5A.	Explain the difference between Peak over threshold and block maxima in calculating the hazards	4
5B.	Write a MATLAB code for calculating probabilistic hazards using block maxima approach.	6