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

II SEMESTER M.TECH. (PRINTING AND MEDIA TECHNOLOGY)

END SEMESTER EXAMINATIONS, APRIL 2018

PE - II ENVIRONMENT MANAGEMENT FOR PRINTING INDUSTRY
[PME 5237]
REVISED CREDIT SYSTEM
(25/04/2018)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitable assumed.

- 1A. (i).** Discuss the objective and importance of the following requirements for EMS
- a)** Objectives and Targets
 - b)** Emergency Preparedness and Response
- (ii).** Explain any four alternative prepress technologies that can be implemented to reduce pollution from printing industry.
- 1B. (i).** What do you mean by the term 'Ecofriendly printing'? Explain the possible ways to achieve ecofriendly printing.
- (ii).** What are the precautionary measures that can be taken to control toxic poisoning in printing industry?

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- 2A. (i).** List all the possible wastes given out from a flexographic printing process and indicate the hazardous wastes and their possible treatment.
- (ii).** Mention the pollution prevention strategies (Four) with reference to fountain solution as the potential P2 area in offset press.
- 2B. (i).** What is the main objective of P2 plan? Discuss the steps to conduct waste audit and develop a P2 plan.
- (ii).** The implementation of Environmental Management System in any industry will lead to operational and marketing benefits'. Illustrate this statement.

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- 3A. (i).** Explain the following with reference to the assessment phase of P2 program.
- a)** Setting of goal and defining problem
 - b)** Generating and screening of options
- (ii).** Discuss the causes and adverse effects of Greenhouse effect.
- 3B. (i).** Discuss the stages involved in the life cycle concept of an industrial product as per Society of Environmental Toxicology and Chemistry.
- (ii).** Explain, how the installation of the following instruments can reduce pollution from printing industry.
- a)** Ink viscosity measuring system
 - b)** Web brake detector

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- 4A. (i).** Explain how the following can reduce the pollution from printing industry
- a)** Proper job planning
 - b)** Inventory management
- (ii).** Discuss the principle and advantages of the following Silver recovery methods.
- a)** Electrolytic method
 - b)** Reverse osmosis
- 4B. (i).** What are listed wastes? Discuss on the types of listed wastes.
- (ii).** Explain the benefits of implementation of P2 program.

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- 5A. (i).**
- a)** Mention the techniques that can be employed to reduce hazardous level and minimize the generation of wastewater in printing industry.
 - b)** What are the success factors of P2 plan?
- (ii).** Discuss the advantages (any four) of using UV inks to control pollution from printing industry.
- 5B. (i).** What are hazardous wastes? Discuss the characteristics nature of a hazardous waste.
- (ii).** With a neat diagram explain the activated sludge method for the treatment of Industrial sewage.

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