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SARDAR PATEL UNIVERSITY

M.Sc. (Polymer Science & Technology) Semester-IV Examination-2016

Saturday, 9th April-2016

02:30 P.M. to 05:30 P.M.

PS04CPST11: INDUSTRIAL HYGIENE & SAFETY

Total Marks: 70

- Note:** (1) Attempt all questions.
(2) Figures to the right indicate marks.

Q.1 Answer the following multiple choice questions. **(08)**

- (1) Pumps used for handling of flammable chemicals can be made up of _____.
(a) brass (b) nonmetal matter (c) both of above (d) none of above
- (2) _____ is to be mentioned in the middle left section of Hazchem plate.
(a) Company symbol (b) ADR number (c) EAC number (d) UN number.
- (3) Lanyard is a flexible line up to _____ inch.
(a) 6 (b) 60 (c) 72 (d) none of above
- (4) PPEs should be _____.
(a) durable (b) minimum weight (c) attractive (d) All of above
- (5) IDLH means _____.
(a) Immediately dangerous to lungs or health (b) Immediately dangerous to life or heart (c) Immediately dangerous to lungs or heart (d) none of above
- (6) The compliance audits in industries must be performed at least every _____ years.
(a) 4 (b) 3 (c) 2 (d) 1
- (7) SEISO means _____.
(a) use of name plates (b) maintaining of cleanliness (c) both of above (d) none of above
- (8) Pressure vessels should be designed as per IS _____.
(a) 2825 (b) 2528 (c) 2852 (d) 2582

Q.2 Attempt any **seven** of the following **(14)**

- (1) Discuss Hazchem plate with neat labeled diagram.
- (2) What do you mean by vent pipe?
- (3) Elaborate the classification of vaporous contaminants in terms of chemical characteristics.
- (4) Describe process flow chart.

- (5) Enlist various preventive measures for skin protection.
- (6) Enlist the contents of MSDS.
- (7) When canister and chemical cartridge respirators cannot be used?
- (8) Explain exothermic reactions.
- (9) Write down the factors because of which the need of PPEs exists.
- Q.3** (a) Write a detail note on following (06)
1. HAZOP
 2. 5s concept for housekeeping.
- (b) What are the factors considered in the Incident investigation program? (06)
- OR**
- (b) Give an account on toxicity (06)
- Q.4** (a) Write down different types of chemical hazards & its control in industries. (06)
- (b) Describe in detail about fire with different classes. (06)
- OR**
- (b) Write a detail note on Chemical transportation. (06)
- Q.5** (a) Describe in detail about safe start up and shut down procedures. (06)
- (b) Explain various safety aspects of pipelines. (06)
- OR**
- (b) Write a note on following. (06)
- 1) Dyke
 - 2) Pressure relief devices
- Q.6** (a) Explain following. (06)
- 1) Oxygen deficiency
 - 2) Particulate contaminants
- (b) Discuss on following (06)
- 1) Hand and Arm protection
 - 2) Foot and Leg protection
 - 3) Head and Hair protection
- OR**
- (b) Write a note on Air purifying Respirators. (06)
