

GUJARAT TECHNOLOGICAL UNIVERSITY**BE SEM-VIII Examination May 2012****Subject code: 181905****Subject Name: Industrial Safety & Maintenance Engineering (D. E.-II)****Date: 08/05/2012****Time: 10.30 am – 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What are important provisions of Indian Factories Act with regard to safety? Explain briefly. **07**
- (b) Describe roll of management and roll of government in Industrial safety. **07**

- Q.2** (a) Write important functions of safety committees in big industries, namely, refineries, petro-chemicals and fertilizers where safety is of prime importance, Also write organization structure of safety committee. **07**
- (b) Describe importance of following in preventing accidents in industries: Plant Layout, Illumination, Ventilation, House-keeping **07**

OR

- (b) Write short notes on (i) Boiler Act (ii) ESI Act (iii) Explosive act **07**

- Q.3** (a) What are seven basic parameters which form basis of Condition Monitoring Techniques in maintenance of industrial equipments? Write briefly on each Technique. **07**
- (b) Write methods and instruments used for condition monitoring of a Gear Box used for speed-reduction of a prime mover. **07**

OR

- Q.3** (a) What is FMEA? How does FMEA help maintenance personnel? **07**
- (b) What is Fault Tree Analysis? Explain briefly. **07**

- Q.4** (a) What is Total Productive Maintenance (TPM)? How does it differ from Total Quality Management (TQM)? **07**
- (b) Write two basic systems adopted in TPM and explain briefly the systems. **07**

OR

- Q.4** (a) Compare in brief : **07**
Break-down maintenance, Opportunistic maintenance,
Routine maintenance
- (b) How Equipment Life Cycle is useful for deciding maintenance activities? Draw Bath Tub Curve and show which part is important from maintenance point of view. **07**

- Q.5** (a) Define various performance measuring parameters/indices used for analysis of effectiveness of maintenance function. **07**
- (b) Draw chart of System approach of Maintenance Functions **07**

OR

- Q.5** (a) Enumerate three basic approaches for preparation of maintenance **07**

budget.

- (b) Differentiate between Fixed Costs and Variable Costs associated with Maintenance Function. Give suitable example in each case. **07**
