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Register Number:

7231

Name of the Candidate:

**DIPLOMA EXAMINATION, 2010**  
**(MAINTENANCE ENGINEERING AND MANAGEMENT)**  
**(PAPER-II)**

**120. CONDITION MONITORING AND FAULT DIAGNOSIS**

Dec]

[Time : 3 Hours

Maximum : 100 Marks

*Answer any FIVE questions*

1. a) State and describe any two instruments for analysis using radiation and electrical properties. (10)  
b) Discuss the methodology to diagnose resonance and misalignment. (10)
2. a) Discuss how noise measurement and vibration can be used as effective tools for the condition monitoring of machinery. (10)  
b) Explain how surface and sub-surface flaws can be diagnosed. (10)
3. a) Explain the factors that affect the performance of a seal. (10)  
b) State the different causes of vibration and their effects on machinery. (10)
4. a) Explain the working principle of (10)  
(i) Moving coil instrument  
(ii) Fibre optic laser vibrometer.  
b) Explain the working principle of an ultrasonic flaw detector with a sketch. (10)
5. a) Compare and contrast the stress strain diagrams of a brittle and ductile material. (10)  
b) Explain how tensile and compression testings are performed. (10)
6. a) Discuss the various factors that affect the fatigue strength of metals. (10)  
b) Describe the methods that are used for enhancing the fatigue strength of metals. (10)
7. With suitable sketches, explain the following tests. (10+10)  
(i) Vickus hardness test  
(ii) Creep test
8. a) Explain the different steps involved in the specimen preparation of micro-examination. (10)  
b) With suitable example define torsional fracture and bending fracture. (10)

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