

Time: 3 Hours

Max Marks:80

- Note: 1. Q1 is compulsory
2. Solve any three from remaining

Q1 Solve any Four out of Six 20

- A. Explain the benefits of Vibration based condition monitoring?
- B. Describe the different applications of Laser Doppler vibrometry (LDV).
- C. Explain the essential settings in Data Acquisition System (DAS).
- D. Discuss the importance of continuous pump vibration monitoring.
- E. Describe the characteristic of cavitation experienced in Centrifugal pump.
- F. Explain the Unique reasons for mechanical looseness.

Q2

- A. Illustrate the concept prognosis and diagnosis in vibration-based condition monitoring with example. **10**
- B. Explain the methods to diagnose the vibrations due to bearing faults? Also explain the vibration generated by defective rolling bearings. **10**

Q3

- A. Explain the main methods are used for attaching sensors to monitoring locations in predictive maintenance. **10**
- B. What are the methods for shaft alignment and how do you diagnose a misalignment situation? **10**

Q4

- A. What is the effect of bent shaft on machine vibration? Also explain the monitoring frequency for bent shaft? **10**
- B. Describe the methods to reduce the gearbox problems using condition monitoring. **10**

Q5

- A. What are the challenges that needed to be addressed by the vibration monitoring system in sugar mills. **10**
- B. Explain the four classes of Fourier transform with graph. **10**

Q6

- A. Explain vibration-based condition monitoring and fault diagnosis in rotating machine. **10**
- B. What Is Windowing? Describe Windowing functions with diagram. **10**