

sem III | e-scheme | mech | Nov 25 | 20.11.25
op code - 82929

Time: 3 hour

Max Marks:80

112

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

- Q1 Solve any Four out of Six 20
- A. Explain the four areas that should be incorporated in an industrial centrifugal pump maintenance program.
 - B. Describe different sensor mounting techniques?
 - C. Clarify the Laser Doppler vibrometry (LDV) with diagram.
 - D. Discuss the selection criteria of representing a vibration signal.
 - E. Explain different faults associated with a Gearbox.
 - F. Describe the corrective measures for mechanical looseness?
- Q2
- A. Describe the methods to diagnose the Vibration Generated by Defective Rolling Bearings. 10
 - B. Describe the steps involved in condition monitoring system for maintenance. 10
- Q3
- A. Explain how to decide the optimum sensor location in condition monitoring? 10
 - B. Explain the effect of bent shaft on monitoring frequency? 10
- Q4
- A. Explain the different faults associated with fans and blowers? 10
 - B. Explicate the significance of continuous Pump Vibration Monitoring? 10
- Q5
- A. Explain the working principle of the laser vibrometer in terms of displacement, velocity, acceleration, and force measurement. 10
 - B. Describe the different faults associated with a mechanical gearbox. 10
- Q6
- A. Explain misalignment with its different types and its unique vibration characteristics? 10
 - B. Describe the four classes of Fourier transform with graph. 10